# **<u>Lighting Appendix</u>**

In-pool Lighting Images

The following images were developed using Lightscape modeling of the in-pool lighting. Realistic modeling of light in water is next to impossible due to the scattering, attenuation, caustics, etc. involved with the physics of modeling light in water. In an attempt to gather images to replicate the scene, undulating surfaces were created to represent small water waves and assigned the physics template for water within Lightscape. The following images are, therefore, obtained when attempting to replicate the lighting possible through the fiber optic system.
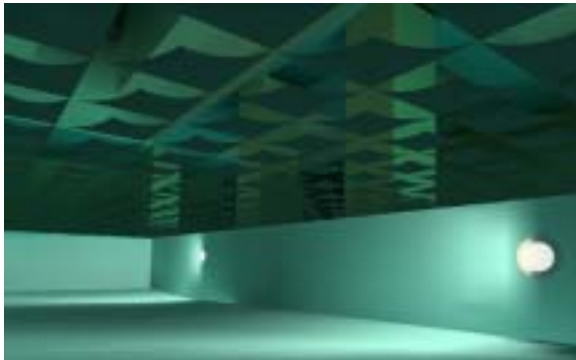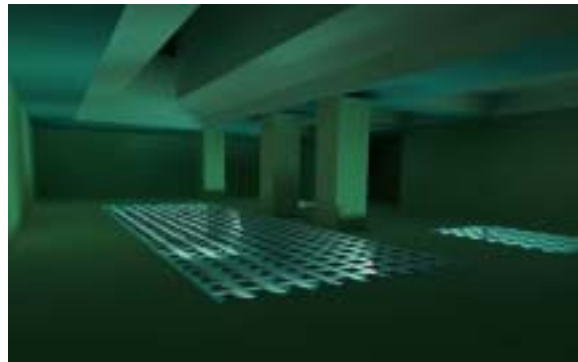
Figures a-b (Above): In-Pool Lighting Only
Figure c (At Left): View From Within the Pool

Striations should be created on the wall due to the reflections of light in water. These striations are similar to those seen below and shall invoke a feeling of serenity for the occupants.

SPECIFICATIONS - CYCLO 04

PHYSICAL

L x W x H . . . . .1190 x 98 x 88 mm (50 x 4 x 3.7 in)
Weight . . . . .5.5 kg (12.1 lbs)
Shipping dimensions . . . . 1210 x 115 x 95 mm, (51 x 4.8 x 4 in)
Shipping weight. . . . . 5.9 kg (13 lbs)
Fixture color . . . . white (NCS 0402-G06-Y)

INSTALLATION

Orientation. . . . . any
Minimum free space around fixture when installed . . . . 25 mm (1 inch)

SOURCE

Approved lamp type . . . . .OSRAM T5 FH 28 watt tubes
Light source. . . . . T5 tubes (3x28W)
Expected lamp life. . . . . .20000 hours

POWER

AC power. . . . . 115 V - 254 V, 50 / 60 Hz
Dimmer control . . . . , 1-10V control
Maximum power and current @ 254 V / 60 Hz . . . . 0.56 A / 128 watts

THERMAL

Maximum ambient temperature (Ta). . . . . 40° C (104° F)

DYNAMIC EFFECTS

Dimmable tubes. . . . . Red, green, blue and white
Independent dimming of each tube via 516 Converter

CONTROL (VIA 516 CONVERTER)

Number of independently controllable dimming channels 16
Channels required per independently controlled Cyclo 02 group 2
Channels required per independently controlled Cyclo 03 group 3
Channels required per independently controlled Cyclo 04 group 4
Number of Cyclos per group (fixtures wired in series). . . . . .1-10 (of the same model)

ORDERING INFORMATION

Cyclo 04. . . . . P/N 90550000

INCLUDED ITEMS

Lamp . . . . OSRAM T5 FH28W/60 (red)
Lamp . . . . .OSRAM T5 FH 28W/66 (green)
Lamp . . . . OSRAM T5 FH28W/67 (blue)
Lamp . . . . OSRAM T5 FH28W/840 (white)
User manual

INTRODUCTION

Thank you for selecting the Martin Cyclo. The Cyclo Series is a range of controllable, fluorescent color changers. These fixtures are designed to be used for cove lighting, perimeter lighting, light walls, behind semi-transparent materials, or any place where room is restricted.

Cyclo is a family of fixtures based on dimmable fluorescent T5 tubes. The T5 tubes have achieved widespread popularity due to their sleek design and high efficacy combined with their long lamp life.

In order to be DMX controlled, the Cyclo fixtures require the Martin 516 DMX to 0-10 V Converter. The 516 Converter converts DMX to 0-10 V analog output. Additional Cyclos can be daisy-chained for synchronous dimming. A single 516 Controller can control 4-8 Cyclo groups individually, each group consisting of one to ten of the same Cyclo model wired in series (the number of groups depends on the model of Cyclo that is installed). The member fixtures in each group will react similarly when controlled.

Cyclo control and power-cables are through-wired for easy installation.

The Cyclo series offers:

- Controllable RGB color-mixing and/or color temperature
- Bright output
- Long lamp life of 20,000 hours

Note: ***It is important to read this manual through before you attempt to install this product.***

Cyclo fixtures

CYCLO 02

Cyclo 02 contains a single warm white tube and a single cold white tube.

It is designed as a functional lighting fixture for applications where dimmable color temperature control ranging from 2700K up to 6000K are desirable.

CYCLO 03

Cyclo 03 contains dimmable red, green and blue tubes and is a cost efficient RGB solution.
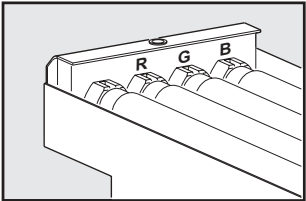
FLUORESCENT TUBES

Burning in new tubes

In order to obtain the full 20000 hour life time, new fluorescent tubes must be burned in for 100 hundred hours at full power (10 volts).
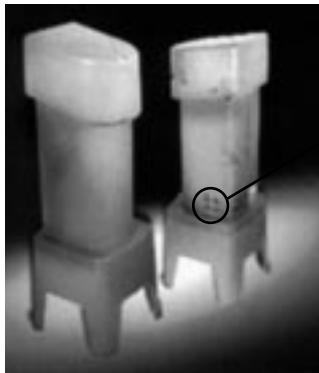
Identifying tube positions

Tube positions are identified in the Cyclo 03 and Cyclo 04 as follows:

Marking in fixture	Marking on tube	Color	Reference illustration
R	OSRAM 28/60	Red	
G	OSRAM 28/66	Green	
B	OSRAM 28/67	Blue	
	OSRAM 28/827	2700K white	
None	OSRAM 28/840	4000K white	
	OSRAM 28/860	6000K white	

CLEANING

We recommend that you clean the dust cover with a damp cloth.

1 Dedicated to each C3 unit (2 total)
1 Dedicated to C4 units and C5 unit (1 total)

SV150T Tower Illuminator
150 Watt Metal Halide lamp,
10,000 hour average lamp life,
550 strand fiber capacity
(upgradable to 756),
white light or 6-color,
mounting base included.
5 year limited warranty.

9.5"
20"

NEW!
External Control for Color Wheel Tempo
There is now a dial on the outside of the light source that easily allows the builder or homeowner to increase or decrease the amount of time spent on each color. Screwdriver included.

REMOTE CONTROL

Remote Kit
Part No.: SVRFCK*
Description: remote control for SV150T
- order separately

REPLACEMENT LAMP

Replacement lamp
Part No.: 40-GA

FIBERHEAD UPGRADE

756 Fiberhead Upgrade Kit
Part No.: SVFH756KIT

Model Number	Description	Ctn. Qty.	Ctn. Weight	List Price
Standard Units				
SV150T1	White Light Only - remote control optional			
SV150T6	6-Color: Moonlight white, hot pink, tangerine dream, lime green, ocean deep blue, indigo blue			
Synchronous Units for use with Multi-Illuminator Systems				
SV150T6C	6-Color: Moonlight white, hot pink, tangerine dream, lime green, ocean deep blue, indigo blue *Important! When adding wireless remote to a synchronous system, one receiver (svRFR) must be installed in each tower)			
Note: 17.0609 Data cable must be installed between light sources.				
Synchronization Component				
17.0609	Data Cable - 3 wire per foot	1		
Replacement Lamp				
40-GA	Replacement Lamp for 150 watt Metal Halide Light Source	1	1/3 lb.	
Wireless Remote Control - Optional. May be added to ANY tower style light source.				
SVRFCK	Wireless remote control kit	1	.6 lbs.	
SVRFT	Transmitter only	1	.4 lbs.	
SVRFR	Receiver only	1	.4 lbs.	
Upgrade Kit - Optional.				
SVFH756KIT	Kit increases light source capacity to 756 strands	1		

4

Features:
Standard Units
- 550 strand capacity, upgradable to 756 strands.
- Mounting pedestal base included for clean installation.
- Easy lamp replacement.
- Taupe color blends easily with the environment.
- On/off, start/stop switches on all units.
- Hard wire ready for external remote systems.
- Quick disconnects allow Wireless Remote Control to be added easily.
- Limited lifetime warranty on lamp.

Synchronous Units
- Control amount of time spent on each color.
- Slow, smooth transition from one color to the next.
- Color Tempo dial located on outside of light source.
- One unit can be either a master or a slave unit when synchronization is desired.
- May be used as a stand alone unit in single light source installation.

Features of Wireless Remote Control
- Can be added to any metal halide light source.
- Quick disconnects provide easy installation.

SPECIFICATIONS
UL Listed for Wet Locations
Electrical Rating:
- 120 VAC, 60 Hz / 3 Amps (start up)
- 120 VAC, 60 Hz / 1.8 Amps (running)
- 220-240 VAC, 50 Hz / 3.0 Amps (start up)
- 220-240 VAC, 60 Hz / 1.2 Amps (running)
Lamp:
- 150 watt metal halide - 4000K
- 10,000 hours average life
Fiber Capacity:
- 550 fibers maximum - PAF30
- 756 fibers max. upgrade
Power Consumption:
- 200 watts max.
Storage Temperature:
- -40°F to 140°F
- -40°C to 60°C
Ambient Operating Temperature:
- -20°F to 110°F
- -29°C to 44°C
Motors:
- 1RPM motor
Dimensions:
- 9.5 x 9.5 x 20"
- 241mm x 241mm x 508mm
Weight:
- 21 lbs.
- 9.5 kg.
Material/Finish:
- UV stabilized materials
- Water, corrosion and chemical resistant
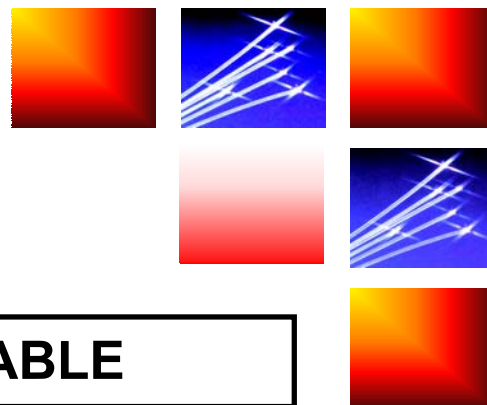Mounting / Installation:
- Surface or burial mount
Ventilation:
- Forced ventilation 115 CFM, FAN: 20 Watts, 80,000 life hours. 6" clearance required to nearest surface. 2' clearance between each illuminator.
Warranty:
- 1 Year (excluding lamp)

Poly Optics Australia

Leaders in Fibre Optic Lighting …

END LIGHT FIBRE OPTIC CABLE

Poly Optics is the leading manufacturer of solid core plastic fibre optic cable for lighting.

Our fibre is rugged, non-conductive, water resistant and flexible.

The fibre is able to transmit light along its length with minimal loss of intensity and no heat transfer.

End Light Fibre is designed to be illuminated with halogen or metal halide light sources.

FOR USE IN A RANGE OF APPLICATIONS:

- Safety Lighting
- Decorative Lighting
- Inspection Lighting

- Non-Conductive Lighting for Electricity-Free Areas
- Alternative Lighting

Poly Optics Australia
1/18 Leda Drive
Burleigh, Q, 4220
Australia

Ph: +61 7 5520 2222
Fax: + 61 7 5520 2255

www.fiberopticlight.com
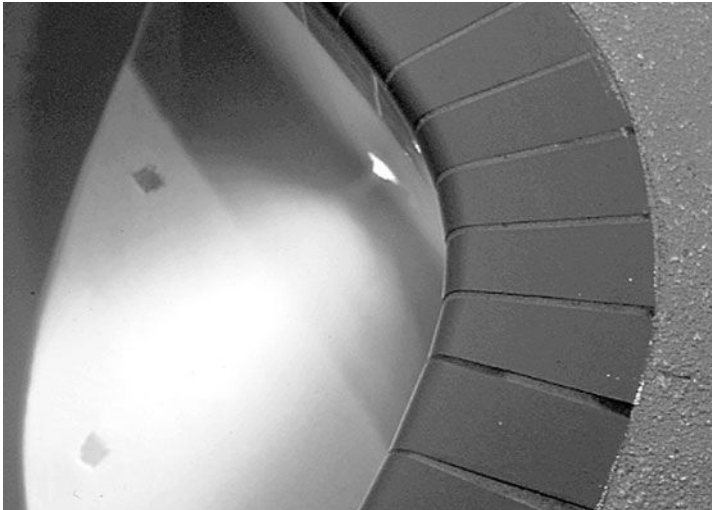
Underwater Lens
Maximum fiber capacity: 300
Description: White, PVC housing
Applications: Pools, spas and fountains.

Underwater Lens

| Model No.	Description	Qty	Weight
Original Polycarbonate Lens			
SVG1	Gunite/white lens assembly	1	.5 lbs
SVG1BLK	Gunite/black lens assembly	1	.5 lbs
SVF1	Fiberglass pools/white lens assembly	1	.5 lbs
SVV1	Vinyl pool/white lens assembly	1	1 lbs
Flat Glass - Flood			
SVG1FLD	Gunite/white lens assembly	1	1 lbs
SVG1FLDBLK	Gunite/black lens assembly	1	1 lbs
SVF1FLD	Fiberglass pools/white lens assembly	1	1 lbs
SVV1FLD	Vinyl pool/white lens assembly	1	1.50 lbs
Convex Glass - Spot			
SVG1SPOT	Gunite/white/white lens assembly	1	1.25 lbs
SVG1SPOTBLK	Gunite/black lens assembly	1	1.25 lbs
SVF1SPOT	Fiberglass pools/white lens assembly	1	1.25 lbs
SVV1SPOT	Vinyl pool/white lens assembly	1	1.50 lbs
SVLKEY2	Lens Key	1	.25 lbs.

Lens Key fits all lenses
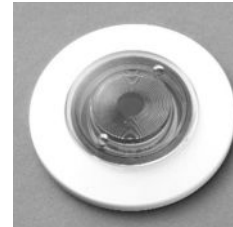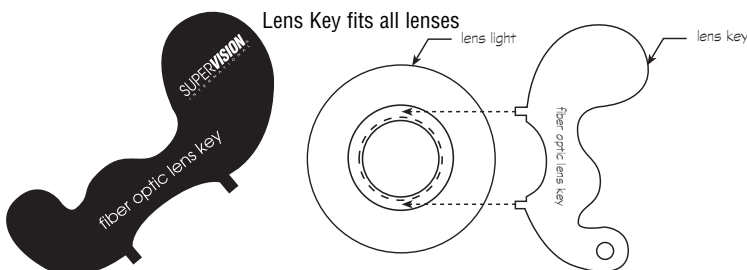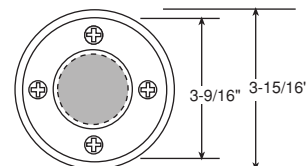

Original Polycarbonate Lens
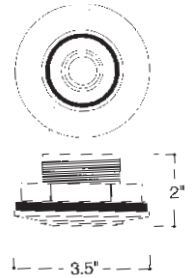
Flat Glass Lens - Flood
Multiple Lens application
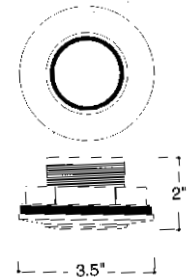
Convex Glass Lens - Spot
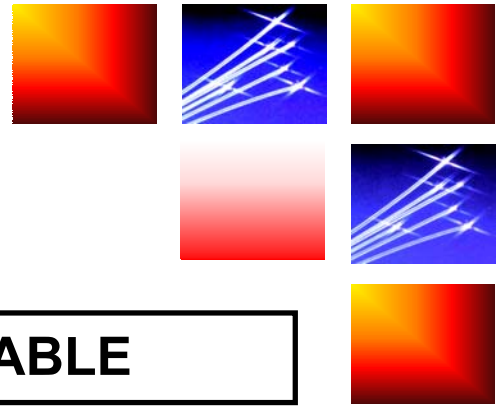Single lens for pools
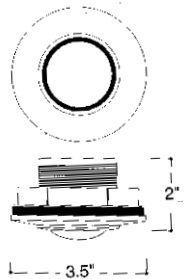
Vinyl Lens

Features of glass Lenses

• Provides up to 30% more light transmission
• Flat glass "flood" lens and convex "spot" lens
  accommodate a variety of applications
• Sealed lens prevents water in the conduit, eliminating
  problems such as clouding, algae growth, etc.
• 300 strand capacity

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SIDE LIGHT FIBRE OPTIC CABLE

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www.fiberopticlight.com

FOCAL POINT

COVELIGHT 26

FCV 26

Low-profile cove mounted 2" x 6" luminaire with indirect asymmetric distribution.

1 Lamp T8

1 Lamp T5 & T5HO

2 Lamp T5 & T5HO

Features

Construction
One piece housing of die-formed 22 Ga. C.R.S. forming 2"H x 6"W rectangular profile. Socket bridge and 20 Ga. Galvanized end caps are mechanically fastened.

Weight: 4' unit—7 lbs
         8' unit—14 lbs

Optic
Die-formed 20 Ga. steel reflector with aluminum insert, finished in high reflectance white paint (90% reflectance).

Electrical
Luminaires are pre-wired with factory installed branch circuit wiring with over-molded quick connects. All ballasts are thermally protected and have a Class "P" rating.

Consult Ballast Ordering Guide on following page for ballast specifications

Optional DALI and other dimming ballasts available. Consult factory for specifications and availability. UL and cUL listed.

Emergency
Emergency battery packs provide 90 minutes of one lamp illumination. Initial lumen output for lamp types are as follows:

T8 Lamp: Up to 550 lumens
T5 Lamp: Up to 550 lumens
T5HO Lamp: Up to 825 lumens

Battery pack requires unswitched hot from same branch circuit as AC ballast.

Finish
Luminaire housing and reflector are finished in high reflectance white paint (90% reflectance).
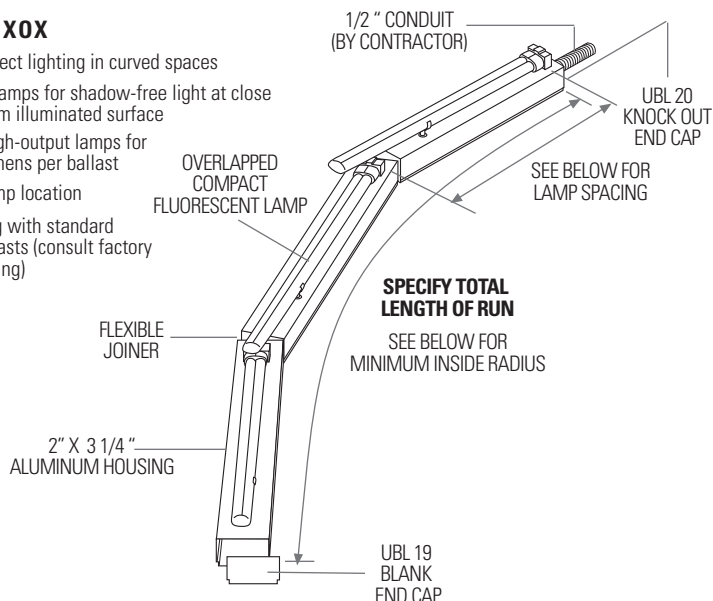
- High performance indirect luminaire designed for concealed cove applications.
- Covelight provides pleasing and even illumination that highlights architectural details.
- Continuous row installations may be configured with 2', 3', 4', 5', 6', 7' and 8' luminaires.
- Metric housing design for T5/T5HO lamps minimizes socket shadows.
- Enhanced ease of installation: simple plug connection eliminates need to access electrical components in luminaire housing.

6.00"
152.4mm

2.00"
50.8mm

Cove by others

THE ART OF LIGHT

© COPYRIGHT 2004

DRAWING NO. CL 404
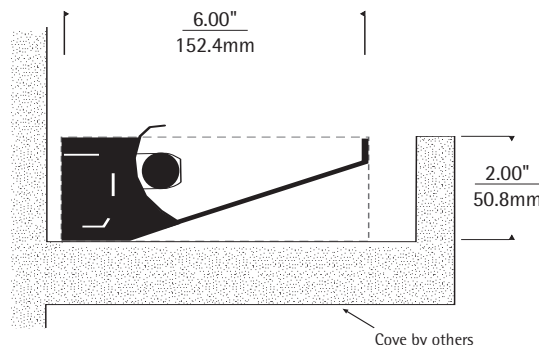
UBL 5000 BXOX

- Ideal for indirect lighting in curved spaces
- Overlapping lamps for shadow-free light at close distances from illuminated surface
- Uses long, high-output lamps for maximum lumens per ballast
- Listed for damp location
- 10% dimming with standard dimming ballasts (consult factory for 5% dimming)

1/2 " CONDUIT (BY CONTRACTOR)

UBL 20 KNOCK OUT END CAP

SEE BELOW FOR LAMP SPACING

OVERLAPPED COMPACT FLUORESCENT LAMP

SPECIFY TOTAL LENGTH OF RUN
SEE BELOW FOR MINIMUM INSIDE RADIUS

FLEXIBLE JOINER

2" X 3 1/4 " ALUMINUM HOUSING

UBL 19 BLANK END CAP

END VIEW

4 1/2"
2"
BALLAST
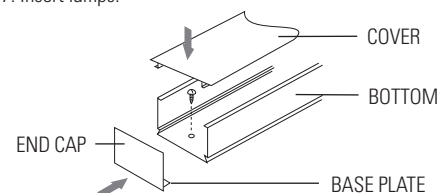3 1/4"

QUICK REFERENCE INSTALLATION INSTRUCTIONS
1. Remove cover piece from module, by removing screws and using flathead screwdriver to pry open.
2. Screw mount bottom piece directly onto secure surface.
3. Snap cover piece into bottom piece and replace screws.
4. To continue run, attach and mount next module and make electrical connections.
5. Attach end caps at beginning and end of run, sliding base plate into bottom piece and securing with screw.
6. Connect lead wires at beginning of run to power source and ground. Do not power until installation complete.
7. Insert lamps.

COVER
BOTTOM
END CAP
BASE PLATE

LAMP SELECTION
TYPE : COMPACT FLUORESCENT
BRANDS : GE "HIGH LUMEN BIAX," PHILIPS "PL-L," OSRAM "DULUX-L"

WATTS	LENGTH	BASE	RATED HRS.	LUMENS	COLOR TEMP.	CRI
18W	10.5"	2G11	12000-20000	1160-1250	3000-6500	82
27W/24W	12.8"	2G11	12000	1800	3000-4100	82
39W/36W	16.5"	2G11	12000	2850-2900	3000-4100	82
40W/38W	22.5"	2G11	20000	2900-3300	3000-5000	82
50W	22.5"	2G11	14000	4000-4300	3000-4100	82

Refer to manufacturers' catalog for full selection and details.
LAMPS NOT INCLUDED
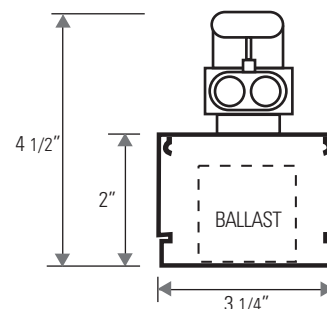
SPECIFICATIONS

PRODUCT CODE	LAMP WATTAGE & SPACING		BALLAST LOCATION		BALLAST TYPE		DIMMING		VOLTS	FINISH	
UBL 5000 BXOX	18W	9 " on center (21" minimum inside radius)	I	Integral	ELE	Electronic	ND	Non-dimming	120 V	NAL	Natural aluminum
	27W / 24W	11" on center (25" minimum inside radius)					DM	Dimming*	277 V	SAT	Anodized satin
	39W / 36W	15" on center (34" minimum inside radius)								WHT	High reflectance white powder coat
	40W	20" on center (46" minimum inside radius)									
	50W	20" on center (46" minimum inside radius)						*Available for 36W thru 50W			Or specify other

EXAMPLE

UBL 5000 BXOX	–	40 W	–	20" o.c.	–	I	–	ELE	–	ND	–	120V	–	NAL

FILL OUT BELOW FOR SUBMITTAL

UBL 5000 BXOX	–		–		–	I	–	ELE	–		–		–	

PROJECT NAME		SPECIFIER	
FIXTURE SCHED. TYPE		CONTRACTOR	
QUANTITY		DISTRIBUTOR	
LENGTHS		REPRESENTATIVE	

FEATURES

OPTICAL SYSTEM
- Reflector - Self-flanged, specular clear or semi-diffuse reflector. Fluted vertical upper section works in conjunction with Bounding Ray Optical Principle to provide lamp before lamp image and smooth transition from top of reflector to bottom. Minimum flange matches reflector finish. White painted flange optional.
- Baffle/cone - Specular clear upper reflector. Microgroove baffle with white painted flange or specular black cone with flange that matches cone finish.
- Hinged lampdoor seals upper trim for optimal fixture efficiency and the reduction of stray light in the plenum.

MECHANICAL
- 16-gauge galvanized steel mounting/plaster frame with integral yoke to retain optical system. Maximum 1-1/2" ceiling thickness.
- Mounting bars are 16-gauge galvanized steel with continuous 4" vertical adjustment, held in place with tool-less, integral cam-action locking system. Post installation adjustment possible without the use of tools from above or below the ceiling. Shipped pre-installed.
- Galvanized steel junction box with bottom-hinged access covers and spring latches. Two combination 1/2"–3/4" and three 1/2" knockouts for straight-through conduit runs. Capacity: 8 (4 in, 4 out) No. 12 AWG conductors, rated for 90°C.

ELECTRICAL SYSTEM
- Horizontally-mounted, four-pin, positive-latch, thermoplastic socket.
- Class P, thermally-protected high power factor electronic ballast mounted to the junction box (CP and EL ballast mounted on ballast tray).

LISTING
- Fixtures are UL listed for thru-branch wiring, recessed mounting and damp locations. Listed and labeled to comply with Canadian Standards (see Options).

ENERGY

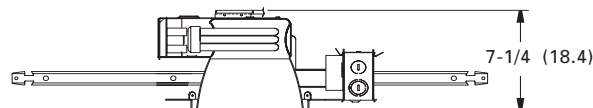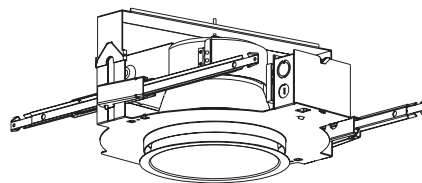| LER.DOL	Annual Energy Cost	Lamps	Lamp Lumens	Ballast Factor	Input Watts
41	$5.83	1/26TRT	1800	0.98	27

Calculated in accordance with NEMA standard LE-5.
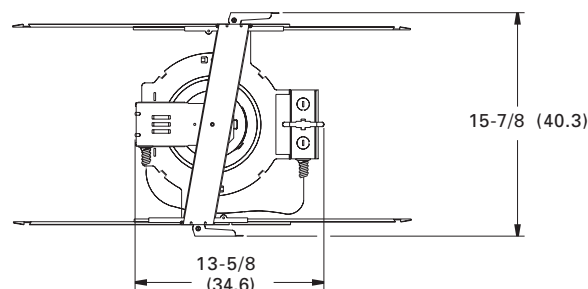
Compact Fluorescent Downlights

6" AF

Open Reflector

Horizontal Lamp
Triple-Tube

7-1/4 (18.4)

Aperture: 6-1/4 (15.9)
Ceiling Opening: 7-1/8 (18.1)
Overlap Trim: 7-1/2 (19.1)

15-7/8 (40.3)

13-5/8 (34.6)

All dimensions are inches (centimeters).

ORDERING INFORMATION

Example: **AF 1/26TRT 6AR MVOLT**

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog number (shipped separately).

AF

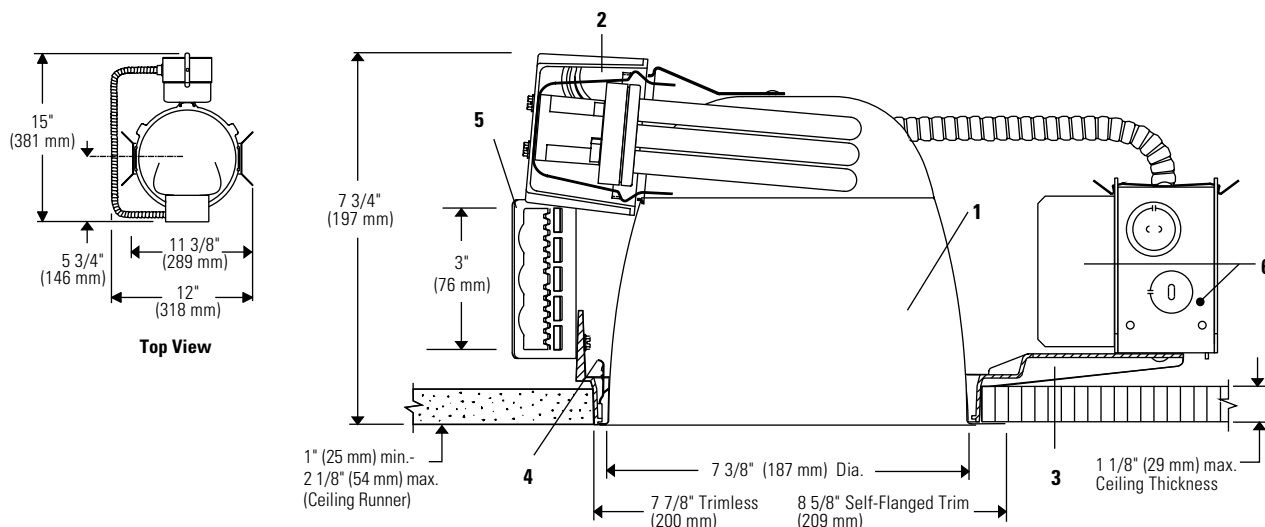| Series	Wattage/Lamp	Reflector/Color	Finish	Voltage	Ballast	Options
AF	**1/18TRT**	**6AR** Clear	**(blank)** Specular low iridescent	**MVOLT**[4]	**(blank)** GEB10 standard. Electronic ballast.	**WLP** With 35°K lamp (shipped separately).
	1/26TRT	**6PR** Pewter	**LD** Semi-diffuse low iridescent	**120**	**DMHL**[5] Lutron Hi-Lume electronic dimming ballast	**TRW** White flange.
	1/32TRT	**6UBR** Umber		**277**	**ADEZ**[5] Advance Mark X electronic dimming ballast.	**EL**[6] Emergency battery pack. Integral test switch provided.
	1/42TRT	**6WTR** Wheat		**347**		**ELR** Emergency battery pack. Remote test switch provided.
		6CR Champagne Gold[1]				**GMF** Single, slow-blow fuse (not available with MVOLT).
		6GR Gold[1]				**RIF** Radio Interference Filter.
		6MB Black Baffle[2,3]				**LRC** Provides compatibility with Lithonia Reloc System. Reloc System can be installed less this option with connectors provided by others. Access above ceiling required. For compatible Reloc Systems, see options and accessories tab.
		6BC Black Cone[2]				**QDS** Quick Disconnect for easy ballast replacement. Not available with EL or ELR option.
						CP Chicago Plenum (consult factory).
						CSA CSA Certified.

NOTES:
1. Not recommended for use with compact fluorescent lamp. Consult factory.
2. Not available with finishes.
3. White flange standard.
4. Multi-volt electronic ballast capable of operating on any line voltage between 120-277 volt.
5. Consult factory for specific availability.
6. Not available with black cone.

Accessories
Order as separate catalog number.

SC6FL Sloped ceiling adaptor. Degree of slope must be specified (10D, 15D, 20D, 25D, 30D). Ex: SC6FL **10D**

Top View

15" (381 mm)

5 3/4" (146 mm)

11 3/8" (289 mm)

12" (318 mm)

7 3/4" (197 mm)

3" (76 mm)

1" (25 mm) min.- 2 1/8" (54 mm) max. (Ceiling Runner)

7 3/8" (187 mm) Dia.

7 7/8" Trimless (200 mm)

8 5/8" Self-Flanged Trim (209 mm)

1 1/8" (29 mm) max. Ceiling Thickness

Ceiling Cutout: 8" (203 mm) Dia.

Reflector Trim	
8037CLW	Clear Iridescence Free, White Flange
8037CLP	Clear Iridescence Free, Polished Flange
8037CL	Clear Iridescence Free, Molded Trim Ring
8037☐	Add suffix. See options for other finishes.

Frame-In Kit			Lamp
7132BU	Electronic	120V - 277V	**26 or 32W Triple Tube**
7132BCU	PowerSpec® Dimming	120V - 277V	4-Pin (Amalgam)
7142BU	Electronic	120V - 277V	**42W Triple Tube**
7142BCU	PowerSpec® Dimming	120V - 277V	4-Pin (Amalgam)

Remodeler Frame-In Kit			Lamp
7132BURM	Electronic	120V - 277V	Same as **7132BU**
7142BURM	Electronic	120V - 277V	Same as **7142BU**

Features

1. **Reflector:** 16 ga. Alzak® aluminum, 55° visual cutoff to lamp and lamp image, wide distribution. Iridescence Free finish. Self-flanged or flangeless with molded white trim ring (field paintable).
2. **Socket Cup:** Die-cast aluminum cup effectively dissipates heat and positions lamp holder. Snaps onto reflector neck to assure consistently correct optical alignment without tools.
3. **Mounting Frame:** Die-cast aluminum for dry or plaster ceilings.
4. **Retaining Springs:** Precision-tooled steel friction springs secure reflector to mounting frame for quick, tool-less installation.
5. **Mounting Brackets:** 16 ga. steel. Adjust from inside of fixture. Use 3/4" or 1 1/2" lathing channel, 1/2" EMT, or optional mounting bars.
6. **Ballast/J-Box:** Outboard mounted to reduce heat transfer and maintain lamp efficacy and life. Service from below without tools.

Electrical

Note: For ballast electrical data and latest lamp/ballast compatibility refer to **"Ballast"** specification sheet for complete electrical data.
7132BU, 7132BCU, 7142BU, 7142BCU: UL listed for through branch circuit wiring with max of (8) No. 12 AWG, 90°C supply conductors.
7132BURM, 7142BURM: UL listed for No. 12 AWG, 90°C supply conductors.

Options and Accessories

Comfort Clear™ Finishes[1]

Clear	**CCL**	
Diffuse	**CCD**	
Champagne Bronze	**CCZ**	
Pewter	**CPW**	

Other Finishes

White	**WH**
Multigroove	**MG**

[1]Specify desired flange
W White, **P** Polished
Blank - Molded Ring

Options and Accessories (continued)

Emergency	Add suffix **EM***
Chicago Plenum	Add suffix **LC**
Existing/Thk. Ceiling	**FA EC7***
Emergency Ltg. Kit	**FA EM3E***
	FA EM4E*
Fuse (Slow Blow)	Add Suffix **F**

*See Spec. Sheets: FAEC, FAEM

Mounting Bars & Accessories; see Specification Sheet MBA.
Sloped Ceiling Adapters; see Specification Sheet SCA.

Labels

UL listed for damp locations, I.B.E.W.

Alzak® is a registered trademark of ALCOA.
US Patent Pending.

Job Information	**Type:**
Job Name:	
Cat. No.:	
Lamp(s):	
Notes:	

LIGHTOLIER

DELRAY LIGHTING INCORPORATED

4740

7"

3.5"

6.75"

12.75" X 7.75"
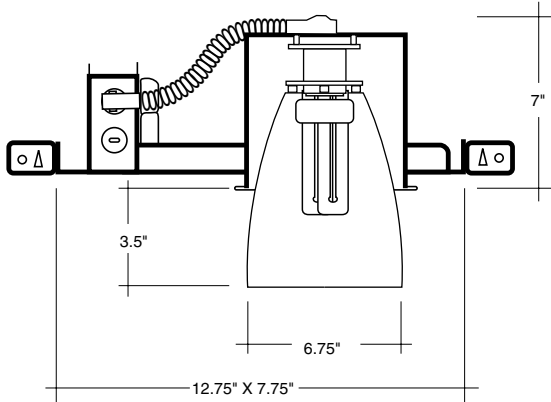
SPECIFICATION INFORMATION

HOUSING ASSEMBLY
Mounting Frame and J-box are galvanized, pre-coated steel. Telescopic bar hangers are supplied and provide for off center mounting. Socket has twist lock mechanism for re-lamping with a pole. Can is spun aluminum with self flange trim, finish is matte white powder coat. Fixture is prewired with ground wire included.

GLASS
The glass is hand blown and available in four colors, glass color must be specified.
I - indigo
M - marine
O - opal
T - tangerine

BALLAST
Electronic ballasts use 4 pin lamps and provide rapid start .99 power factor with THD<10%. Standard ballast operates 26, 32 or 42W lamps. Outboard mounting provides quiet cool operation. Dimming ballast controls lumen output down to $\pm5\%$. All require compatible dimmers.

ELECTRICAL
Allows 4-in / 4-out #12 AWG conductors rated at minimum 90° C. For use in damp locations. J-box and ballast are accessible through fixture. U.L. Listed for use in damp locations.

ACCESSORIES
CHANGER for re-lamp pole
D1 Lutron Hi-Lume dimming ballast (specify wattage)
D3 Advance Mark X dimming ballast (specify wattage)
D4 Lutron Tu-Wire dimming ballast 120V only(specify wattage)
EM emergency power pack ignites one lamp for 90 minutes with remote charge indicator light

ORDERING INFORMATION

LAMP
1-26 26 watt triple tube
1-32 32 watt triple tube
1-42 42 watt triple tube

120V ELECTRONIC
4740.I.1 120V indigo
4740.M.1 120V marine
4740.O.1 120V opal
4740.T.1 120V tangerine

277V ELECTRONIC
4740.I.2 277V indigo
4740.M.2 277V marine
4740.O.2 277V opal
4740.T.2 277V tangerine

SUBMITTAL INFORMATION

TYPE:

PROJECT:

NOTES:

DESCRIPTION:

11916

VALERIO ST.

NORTH

HOLLYWOOD,

CALIFORNIA

91605

PHONE

818 982 3701

FAX

818 982 3715

FEATURES

OPTICAL SYSTEM

- Semi-specular clear anodized aluminum upper reflector.
- Available with tempered prismatic lens (T73), flat fresnel lens (FFL), concave Holophane lens (CHL), polycarbonate clear lens (PCL), prismatic poly-carbonate lens (PPC), acrylic prismatic lens (A!@), acrylic clear lens (CAL) or flat opal (acrylic) lens (FOL).

DOOR

- Regressed white splay or stepped matte black baffle lens door frame.
- Self-aligning butterfly door support springs.

MECHANICAL SYSTEM

- 16-gauge galvanized steel mounting/plaster frame accommodates up to 1-1/4" thick ceiling standard.
- Mounting bars are 16-gauge galvanized steel with continuous 4" vertical adjustment, held in place with tool-less, integral cam-action locking. Post installation adjustment possible without the use of tools from above or below the ceiling. Shipped pre-installed.
- Galvanized steel junction box with bottom-hinged access covers and spring latches. Two combination 1/2"-3/4" knockouts and three 1/2" knockouts for straight-through conduit runs. Capacity: 8 (4 in, 4 out) No. 12 AWG conductors rated for 90°C.

ELECTRICAL SYSTEM

- Die-cast aluminum socket housing. Ventilated top for effective heat dissipation.
- Vertically-mounted, positive latch thermoplastic sockets.
- Class P, thermally-protected, high power factor ballasts mounted to the junction box.

LISTING

- Fixtures are UL listed for thru-branch wiring, recessed mounting and wet locations. Listed and labeled to comply with Canadian Standards.
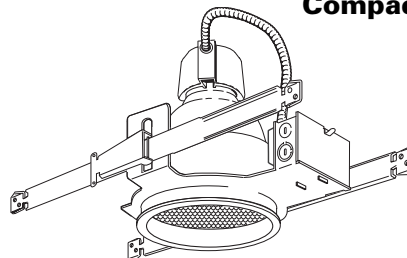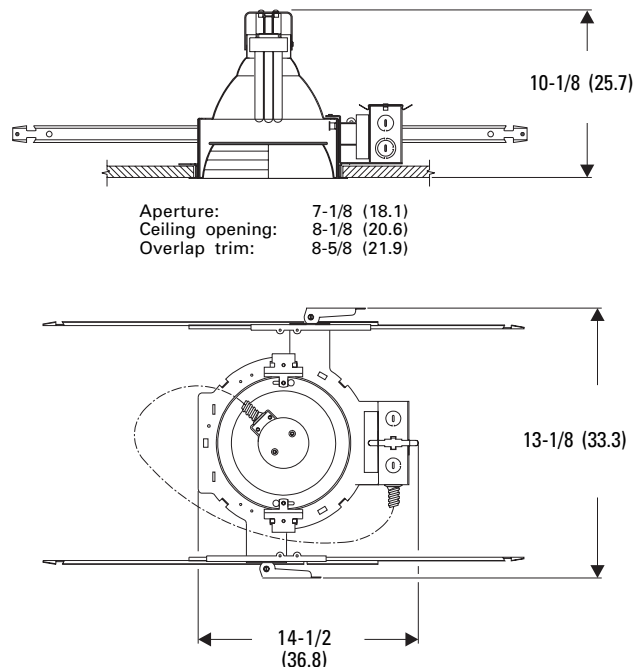
Compact Fluorescent Downlights

7" LGFV

Round Lens
Wet Location
Vertical Lamp
Tri-Tube

10-1/8 (25.7)

Aperture: 7-1/8 (18.1)
Ceiling opening: 8-1/8 (20.6)
Overlap trim: 8-5/8 (21.9)

13-1/8 (33.3)

14-1/2 (36.8)

All dimensions are inches (centimeters).

ORDERING INFORMATION

Example: **LGFV 26TRT 7RW T73 120**

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog numbers (shipped separately).

LGFV

| Series	Wattage/lamp[1]	Door frame	Shielding	Voltage	Options
LGFV	**26TRT** One 26W tri-tube	**7RW** Regressed white door	**T73** Prismatic lens	**120**	LP With 30K lamp (shipped separately).
	32TRT One 32W tri-tube		**CHL**[2] Concave Holophane lens	277	SSC Provides compatibility with Lithonia Reloc System 820. System 820 can be installed less this option with connectors provided by others.
	42TRT One 42W tri-tube	**7SB** Stepped black baffle	**FFL** Flat fresnel lens	347	GMF Single slow-blow fuse.
		7FW Flush white door			RIF Radio interference filter.
					DMHL Lutron Hi-lume[3] electronic dimming ballast, 120V or 277V, 32W only.
					ELR Emergency battery pack. Remote test switch provided. (Consult factory for dimensional changes.)
					TPS Tamperproof. (Includes two tamperproof screws. Not available with flush white door frame.)
					CSA Listed and labeled to comply with Canadian Standards.

Accessories

Order as separate catalog number.

SC7 Sloped ceiling adaptor. Degree of slope must be specified (10D, 15D, 20D, 25D, 30D). Ex: SC7 **10D**.

Notes:
1 Operates Philips PL-T or Osram Dulux T/E type lamp.
2 Not available with 42TRT.
3 Hi-lume is a registered trademark of Lutron Electronics.

LGV 7   DCF-530
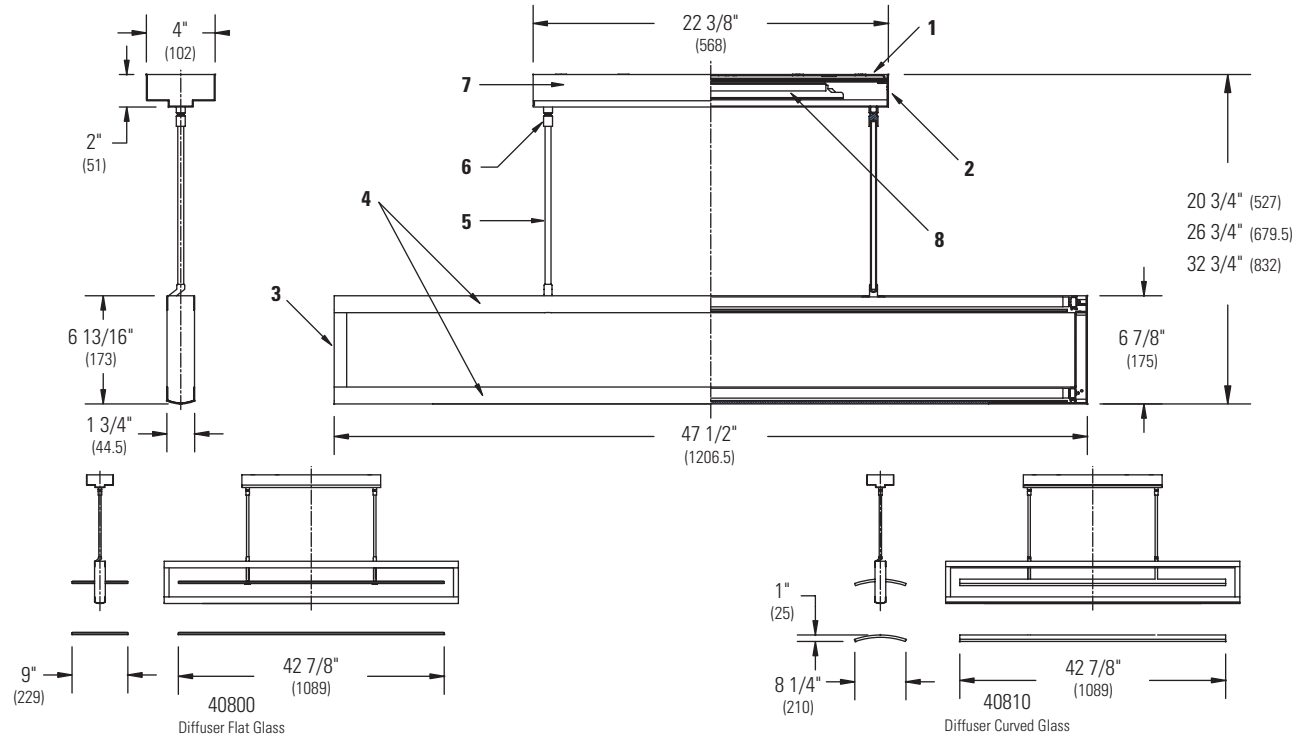
Note: Luminaire can be ordered with or without diffuser shield. Order each separately.

( ) Denotes dimensions in mm

Fixture Ordering Information

Catalog No.	Finish	Wattage	Voltage	Lamping
48228ALU	Metallic Aluminum Powder Coated	2 x 28W	120/277V	T-5, Mini-Bipin
48254ALU	Metallic Aluminum Powder Coated	2 x 54W	120/277V	T-5 HO, Mini-Bipin High Output

Diffuser Ordering Information (Order diffuser separately)

Catalog No.	Description	Dimensions	Finish
40800	Flat Glass Diffuser (3/"8 Thick)	9" W x 42 7/8" L	White ceramic coated top, etched bottom. Clear polished edges.
40810	Curved Glass Diffuser (3/8" Thick)	8 1/4" W x 42 7/8" L	Etched top and bottom. Clear polished edges.

Features

1. **Mounting Plate:** 18 GA. (.048) Galvanized steel for direct mounting to most junction boxes. Secondary mounting holes provided to mount directly to ceiling.
2. **End Cap:** (2) Die cast aluminum. See above for finish.
3. **End Cover:** (2) Die cast aluminum. See above for finish.
4. **Lamp Enclosure:** (2) Extruded aluminum. See above for finish.
5. **Support Stem:** (2) 3/8" diameter steel tubing. Luminaire provided with three lengths (10", 16" and 22"). See above for overall heights. Stems can not be added together.
6. **Swivel:** (2) Meets California Earthquake codes.
7. **Housing:** Extruded aluminum. See above for finish.
8. **Ballast:** See below for details.

Lamping (by others)

Linear Fluorescent: 28W T5 or 54W T5 HO, Mini Bipin

Electrical

Lampholders: G5 (Mini-Bipin) base with rotor for securing lamp. cULus Listed.
Ballast: Electronic, HPF, Universal voltage 120V-277V.

	28 Watt		54 Watt	
Voltage	120V	277V	120V	277V
Total Input Watts	64	63	120	117
Max. Line Current (Amps)	0.55	0.23	1.0	0.43
Ballast Factor	1.03	1.03	1.0	1.0

Min. Starting Temp: 0°F/-18°C
THD<10%

Options

Dimming: (Voltage Specific/54W HO lamps)
Add MX1 suffix code (for 120V) to Cat. No.
Add MX2 suffix code (for 277V) to Cat. No.
example: 48254ALMX1

Emergency: Integral Bodine LP550 emergency battery pack, test switch and light, add E suffix code to Cat. No.

DALI: Digital Dimming System ballast 120/277V. Add DA suffix code to Cat. No.

Labels

cULus Listed. Suitable for Damp Locations

Job Information	Type:
Job Name:	
Cat. No.:	
Lamp(s):	
Notes:	

LIGHTOLIER

American Glass Light Product Spec Sheet:

Fixture Name: Harrington Uplight

Catalog #: 2746-U

Selected Width: 30"

Selected Height: 36"

Selected Lamping: (4) 42W Triple Tube Compact Fluorescent

Selected Glass/Panel: White Sandblasted Glass
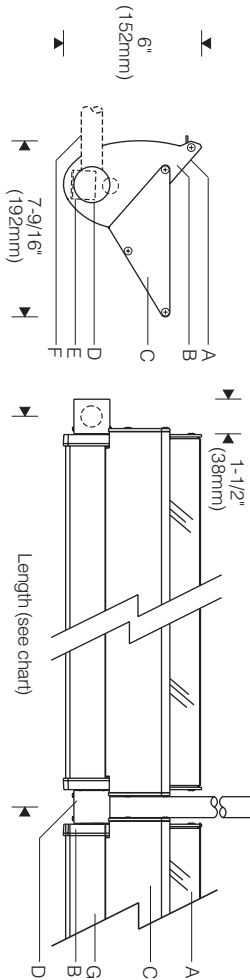
Selected Finish: Polished brass (std.)

Additional Details: Weight for standard lamping 24" width: 10 Lbs. Weight for standard lamping 30" width: 24 Lbs. Weight for standard lamping 48" width: 51 Lbs. Please contact us for lamp specification and ballast remoting information. Metal halide lamping requires remote ballast. Extension Option Available. Dimensions, finishes,and lamping ship standard as listed unless special order options are requested.

120 volts is standard unless other voltage is ordered.

Your Notes:

When specifying this product, please indicate all selected options so we have complete information when an order is placed.
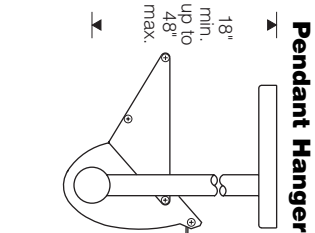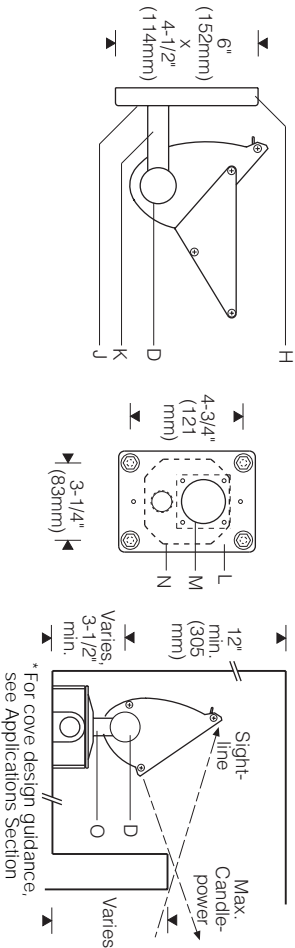
Style F164 1:8 Scale

6"
(152mm)

6"
(152mm)

7-9/16"
(192mm)

4-1/2"
(114mm)

Surface Hanger

H
J
K
D
E
F
C
B
A

Mounting Plate

4-3/4"
(121 mm)

3-1/4"
(83mm)

N
M
L

Cove* 1:10 Scale

12"
min.
(305 mm)

Varies,
3-1/2"
min.

Sight-line

Max.
Candle-power

Varies

O
D

* For cove design guidance,
see Applications Section

1-1/2"
(38mm)

Length (see chart)

D
B
G
C
A
H

18"
min.
up to
48"
max.

Lamp Length	Length (center to center of hubs)
1 x 2'	25-1/4" (640mm)
1 x 3'	37" (940mm)
1 x 4'	48-3/4" (1240mm)
1 x 5'	60-5/8" (1540mm)
2 x 3'	72" (1830mm)
2 x 4'	96" (2440mm)

Pendant Hanger

Specifications

A UV and impact resistant acrylic snap-on lens with silicone gasket

B Die-cast aluminum end plates

C Extruded aluminum visor with stamped end plates

D Aluminum hubs with silicone o-ring gaskets (ordered separately)

E Integral electronic ballast / internal wireway

F 1/2" rigid conduit supports (by others)

G Specular extruded aluminum reflector

H Surface or pendant hangers with hubs (ordered separately)

J Aluminum cover (conceals fasteners)

K Tubular steel arm or stem

L Aluminum mounting plate

M Access with gasketed cover (electrical feed)

N Recessed outlet box

O 1/2" fittings (by others)

Finish:

Exterior surfaces - 6 stage pretreatment and electrostatically applied thermoset polyester powder coating for a durable abrasion, fade and corrosion resistant finish. Choice of semi-gloss colors (see ordering information).

Reflector - extruded high purity aluminum with clear anodized specular finish. All hardware and components - non corrosive stainless steel or aluminum.

Snap-on lens - composite of impact resistant and UV stabilized acrylic. Silicone gasket for watertight operation.

Mounting:

1-1/2" dia. x 1-1/2" aluminum hubs with 1/2" NPT threaded entry. Reflector aiming is adjustable - locks with set screws. Specify with hubs only for use with 1/2" rigid conduit or fittings supplied by others, or specify accessory surface or pendant hangers (ordered separately). Hangers include aluminum mounting plate, cover and hub with 7/8" O.D. steel arm/stem required - allow 3 lbs/ft (21.6kg/m) (8' unit = 24 lbs). Suitable backing structure required - allow 1/4-20 fasteners by others). Specify end kit or intermediate hubs/hangers.

Electrical:

Use 90°C wire for supply connections and through wire. Electrical feed hanger (optional) mounts over recessed outlet box (by others) with gasketed access cover. Internal wireway allows supply wiring to be fed through mounting hub to adjacent units. Locate electrical feed at end of row.

Integral electronic HPF thermally protected class P ballast rated for 0°F/-18°C starting.

For complete ballast specifications, see Accessories Section.

Standard:
UL listed or CSA certified for wet locations when mounted horizontally. For positions other than horizontal, consult factory.
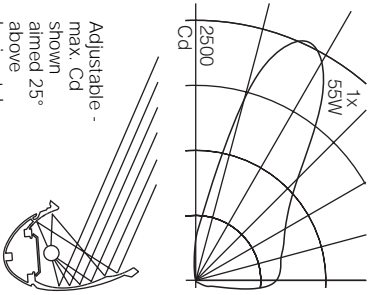
Features

■ *Reflector optimized for T5 - uplight canopies, vaults, soffits with unequaled uniformity from minimal setbacks*

■ *Secure snap-on UV resistant acrylic lens - easy to relamp*

■ *Extruded visor provides shielding - concealed drainage*

■ *Polyester powder coat - exceeds 1000 hour salt spray test*

■ *Integral electronic ballast - internal wireway for thru wiring*

Performance

Two parabolic reflector sections drive light across the overhead plane from one edge. An elliptical section redirects its light to a parabola and shields the lamp. Asymmetry is maximized resulting in high beam efficiency and superior surface uniformity. The fast "runback" minimizes wasted spill light.

Note: Lamp light output may be diminished when operated in low ambient temperatures.

For complete photometrics, visit www.elliptipar.com

2500
Cd

1x
55W

Adjustable - max. Cd shown aimed 25° above horizontal.

U
2.2

Patent pending

elliptipar

U 2.3

To form a Catalog Number

F	1 6 4	-T		-H	-		-		- V		
1	2	3	4	5	6	7	8

Project:

Type:

1 Source

F = Linear fluorescent

2 Style

164 = Medium outdoor, integral ballast

3 Lamp

T = T5 Fluorescent Lamp Code

Lamp Wattage (see chart below)

Number of Lamps in Length, specify **1** or **2**

Example: **T155** = Nominal 4' (1.2m) housing with one 55W T5HO lamp

T5 Fluorescent

Lamp Length (nominal)	Code	T5 Lamp(s)	Code	T5HO Lamp(s)
2'	T114	1 x F14T5	T124	1 x F24T5/HO
3'	T121	1 x F21T5	T139	1 x F39T5/HO
4'	T128	1 x F28T5	T155	1 x F55T5/HO
5'	T135	1 x F35T5	T180	1 x F80T5/HO
6'	T221	2 x F21T5	T239	2 x F39T5/HO
8'	T228	2 x F28T5	T255	2 x F55T5/HO

For complete lamp and ballast information, see Accessories Section. Standard T5 lamp color is 3000K / 80+ CRI.

4 Mounting

H = For use with mounting hubs (1/2" rigid conduit supports or fittings supplied by others), or
For use with accessory surface or pendant hangers.

Note: Order either hubs only or hubs with hangers separately. For reflector positions other than horizontal, consult factory.

5 Finish

02 = Semi-gloss white
06 = Dark bronze
07 = Silver
08 = Semi-gloss black
12 = Green
99 = Custom RAL or computer matched color to be specified, consult sales representative.

6 Voltage/Ballast

Electronic:
00
1 = 120V
2 = 277V
3 = 347V

* Dimmable ballasts available for F55T5/HO only. Consult sales representative.

7 Option

V0 = Cutoff visor included, no other option
00 = Cutoff visor NOT included, no other options (Suggested when architectural cove or other detail provides shielding of lens brightness.)
VX = For modification not listed, include detailed description. Consult factory prior to specification.

8 Standard

0 = UL, Underwriters Laboratories
J = CSA, Canadian Standards Association

Example

F164 - T155 - H - 08 - 1 - V00

Medium outdoor fluorescent for use with one 55W T5HO lamp in nominal 4 foot reflector. For use with mounting hubs (1/2" rigid conduit supports by others) or accessory hangers. Semi-gloss black powder coat finish. Integral 1-lamp 120V electronic ballast. Cutoff visor included. UL. (Order end kit and intermediate mounting hubs or hangers separately.)
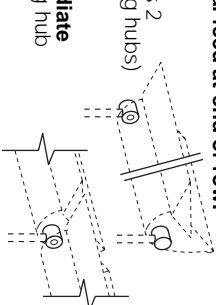
Hubs Only (order separately)

For use with 1/2" rigid conduit or fittings (supplied by others). Order one hub **end kit** for each individually mounted luminaire or each row. For a continuous row, order one **intermediate** hub for each additional luminaire in the row. Example: a row of six reflectors requires 1 hub end kit and 5 intermediate hubs. **Note: Locate electrical feed at end of row.**

HOD _ 000 = **End kit** (includes 2 mounting hubs)
5

HOC _ 000 = **Intermediate** mounting hub
5

Hubs with Hangers (order separately)

Order one hanger **end kit** for each individually mounted luminaire or each row. For a continuous row, order one **intermediate** hanger for each additional luminaire in the row. Example: three rows of four reflectors requires 3 end kits and 9 intermediate hangers. **Note: Hubs included. End kit includes one electrical feed hanger - locate at end of row.**
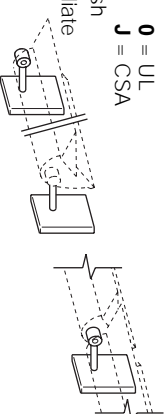
HB _ 00 _ = Outdoor **surface** hanger
5 Finish
A = Intermediate
B = End kit
0 = UL
J = CSA

HB _ 00 _ = Outdoor **pendant** hanger
5 Finish
Length, in inches, specify 18, 24, 30, 36, 42 or 48
0 = UL
J = CSA
F = Intermediate
G = End kit

LITHONIA LIGHTING

FEATURES & SPECIFICATIONS

Low-Profile T5 Direct Channel

MS5

2', 3', 4' or 8' Lengths
1 or 2 Lamps

T5
Technology
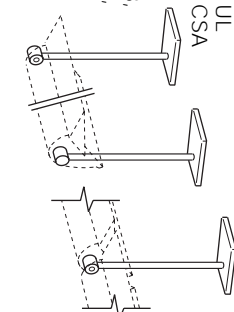
INTENDED USE

T5 linear direct fluorescent intended for use in low-profile commercial, retail, manufacturing, warehouse, cove and display applications.

ATTRIBUTES

Designed exclusively for use with T5 lamps, T5 sockets and T5 electronic ballasts.

CONSTRUCTION

Housing formed from cold-rolled steel. No asbestos is used in this product. Heavy-duty 20-gauge channel.

Extended-height end caps retain and support sockets. Compact T5 socket features rotating collar and enclosed contacts.

FINISH

High-gloss, baked white enamel finish. Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance.

OPTICAL SYSTEM

A variety of optical assemblies are available. See the MS5-Reflector or MS5-Louver spec sheets.

ELECTRICAL SYSTEM

Thermally protected, resetting, Class P, HPF, non-PCB, UL Listed.

Suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

INSTALLATION

Labor-saving coupler supplied for row mounting. Numerous knockouts for easy installation. Surface-mount or suspended.

LISTING

UL Listed and CSA Certified (see Options).

WARRANTY

Guaranteed for one year against mechanical defects in manufacture.

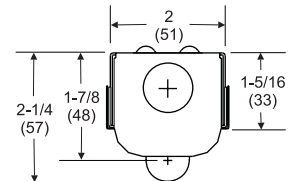*Specifications subject to change without notice.*

Specifications

Length: 22-7/16 (569), 34-1/4 (869), 46-1/16 (1169) or 92-1/16 (2337)

Width: 2 (51)

Depth: 2-1/4 (57)

Weight: 4.8 lbs (2.2 kg)

ORDERING INFORMATION

MS5

Series	Number of lamps	Lamp type	Voltage	Options
MS5 T5 low-profile direct	**1**, **2**	**14T5** 14W T5 (22")	**347**[2], **MVOLT**[3]	**GEB10PS** Electronic ballast, ≤10% THD, Program Start
	Not included.	**21T5** 21W T5 (34")	Others available.	**GLR** Internal fast-blow fuse[4]
For tandem double-length unit, add prefix **T**.[1] Example: **TMS5**		**24T5HO** 24W T5 HO (22")		**GMF** Internal slow-blow fuse[4]
		28T5 28W T5 (46")		**PLF_** Plug-in wiring, specify 1, 2 or 3 branch circuits and hot wires (**A**=black, **B**=red, **C**=blue, **AB** or **AC**)
		39T5HO 39W T5 HO (34")		**EL55** Emergency battery pack (nominal 390-700 lumens; see Fluorescent Battery Packs tab)[1, 4]
		54T5HO 54W T5 HO (46")		**CSA** CSA Certified

Accessories

Order as separate catalog number.

WGMS5Z	Wireguard, 4', zinc
THMS5	Tong hanger
1B	Ceiling spacer (adjusts from 1-1/2" to 2-1/2" from ceiling)
SQ_	Swivel stem hanger (specify length in 2" increments)

NOTES:
1 Only available with 28W and 54W.
2 Only available with 54W.
3 Available with GEB10PS only.
4 Specify voltage.

SKY
Specification Grade
Deep Regressed
Lens Troffer
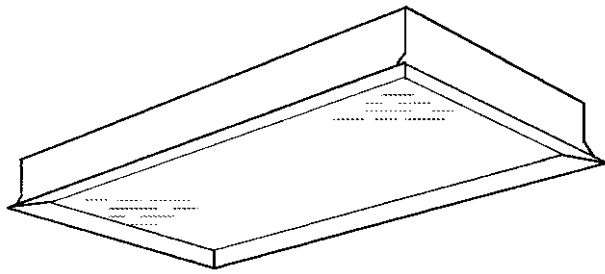
Available in a wide assortment of sizes

Type: _____

Job Description: _____

Features

- Deep regressed trim without a surrounding black reveal enables the fixture to imitate a natural skylight.
- Extruded aluminum white trim presents a clean highly gloss finish.
- Available in an assortment of sizes.
- Standard white opal lens produces a luminaire with a true skylight appearance.
- Available with a wide assortment of lamps.
- Optional trim finishes available to match ceiling tiles.
- Lay-in lens ensures lens security with ease of removal.
- Designed to fit NEMA type G, F and M ceilings.
- 8″ deep housing ensures no lamp imaging which retains the skylight appearance.

Housing
Fixture is constructed of die formed and embossed code gauge steel. End caps are riveted to the housing for added rigidity. Designed for installation in all ceilings as shown below. Specify exact ceiling type.

Ballast & Electrical
All luminaires are completely wired with class "P", thermally protected, resetting, HPF, CBM, LE ballast, sound rated A. Lampholders are medium bi-pin with positive retention and edge-wipe contacts. Furnished with an access plate.

Finish
All metal parts processed with a five-stage phosphate bonding treatment and finished with a high reflectance baked white enamel after fabrication.

Shielding
Standard lens is an acrylic, matte white opal finish. Fixtures are designed to accept any flat unframed sheet of light diffusing plastic. Lens must lay in place and is supported by the extruded trim on all four sides. Regressed trim is finished in matte white and is 1⁹⁄₁₆″ deep. Trim is secured rigidly in place to the housing with rivets. Larger sizes of luminaires (such as 4′ x 4′) may require pre-arched panels in some shielding to prevent sagging. Contact your Columbia Representative for details.

Labels
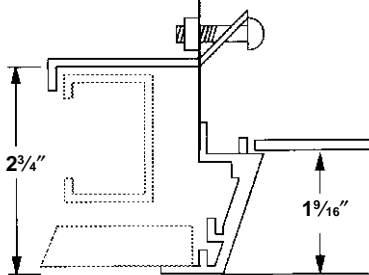All fixtures carry a UL or CSA listing and bear the appropriate UL labels.
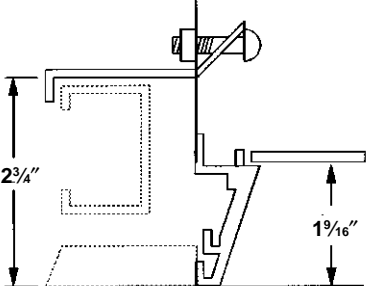
Ceiling Compatibility

Type G

1⁹⁄₁₆″
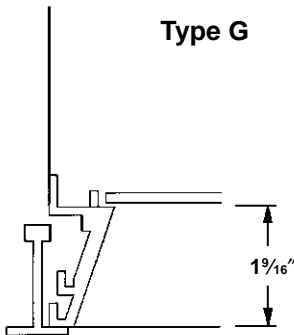
For lay-in installation in exposed grid ceilings. Maximum tee widths of 1″ and maximum tee heights of 1½″ allowed.

Type F

2³⁄₄″

1⁹⁄₁₆″

Overlapping extruded aluminum trim conceals edges of ceiling opening. Cantilever arm suspension system included. For in-row mounting, row information is required.
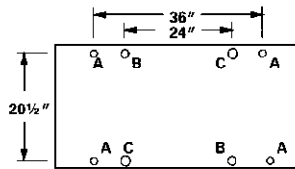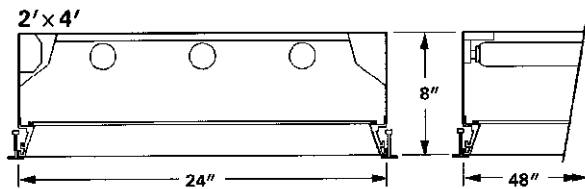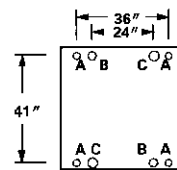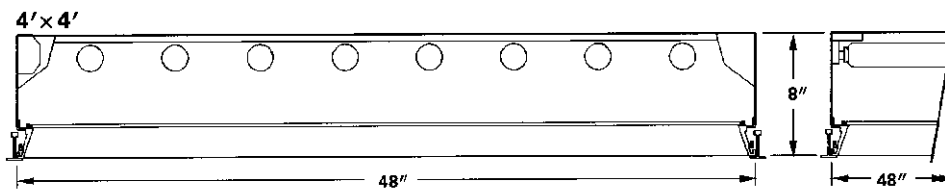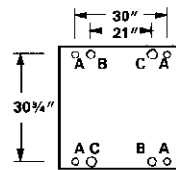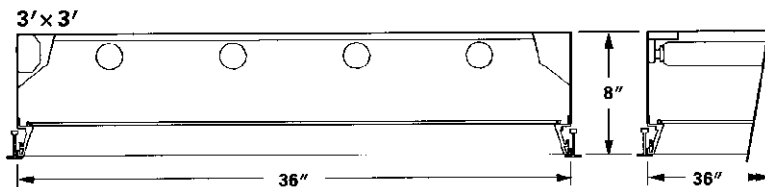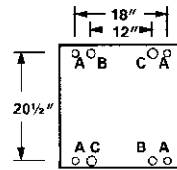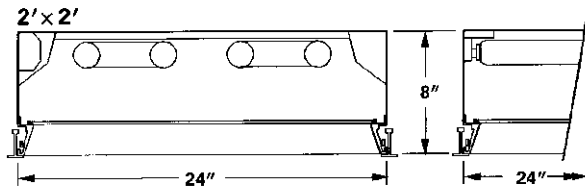
Type M

2³⁄₄″

1⁹⁄₁₆″

"Fit-in" style extruded trim align with modular tile joints. Fixture is supported from concealed suspension, includes adjustable wing hangers. Cantilever arm suspension system included.

Complete ordering information on back. Dimensions and specifications subject to change without notice.

T53

Columbia LIGHTING

SKYLIGHT Cross Sections

A - ½″ Diameter Knockout
B - ⅞″ Diameter Knockout
C - 1½″ Diameter Knockout

Ordering Information

Example: SKY24-332G-RAOA-3EB8LH120-EL

Series

Fixture Size

14 - 1′ x 4′	**33** - 3′ x 3′
22 - 2′ x 2′	**44** - 4′ x 4′
24 - 2′ x 4′	

No. of Lamps

1 - One	**4** - Four
2 - Two	**8** - Eight
3 - Three	

Lamp Type

1 x 4, 2 x 4, 3 x 3, 4 x 4
40 - 4′, T12, 40 Watt
32 - 4′, T8, 32 Watt

2 x 2
40U6 - U-bent, T12, 40 Watt, 6″ Leg Spacing
40U3 - U-bent, T12, 40 Watt, 3⅝″ Leg Spacing
32U6 - U-bent, T8, 32 Watt, 6″ Leg Spacing
31U1 - U-bent, T8, 31 Watt, 1⅝″ Leg Spacing
17 - 2′, T8, 17 Watt
20 - 2′, T12, 20 Watt

Ceiling Type

G - Inverted T-Bar
F - Overlap Flange
M - Modular

Door Style

RA - Regressed Aluminum

Shielding

A12 - Pattern 12 Acrylic
OP - Opal Acrylic, Matte Finish (Std.)

Ballast

Blank	- HPF, T12, 20 Watt
LE	- Energy Saving Magnetic T12
EB8	- Electronic T8
EB8LH	- Electronic T8
3EB8	- (1) 3-Lamp Electronic T8
3EB8LH	- (1) 3-Lamp Electronic T8
4EB8	- (1) 4-Lamp Electronic T8
4EB8LH	- (1) 4-Lamp Electronic T8
24EB8	- (1) 2-Lamp & (1) 4-Lamp Electronic T8
24EB8LH	- (1) 2-Lamp & (1) 4-Lamp Electronic T8

For a specific ballast vendor, show as option.

Voltage

120	- 120V
277	- 277V
347	- 347V
UNV	- 120V/277V (T8 w/LH only)

Options

SLL	- Spring Loaded Latches
SPH	- Specular Laminate Housing
GMF	- Slow Blow Fuse
GLR	- Fast Blow Fuse
EL	- Emergency Battery Pack

T53

LITHONIA LIGHTING

FEATURES & SPECIFICATIONS

PARAMAX® Parabolic Troffer

PM3 2'x4'

INTENDED USE
High performance deep-cell parabolic luminaires for superior light control, visual comfort and light cutoff in open area applications.

ATTRIBUTES
Choice of low iridescent diffuse or specular louver finishes. Also available with Achroma™ non-iridescent louver finish.

Models available to meet IES RP-1 minimum luminance criteria for office lighting systems in VDT applications. Optimax products are available to meet preferred criteria.

CONSTRUCTION
Black reveal provides floating louver appearance, conceals optional air-supply slots. Optional heat-removal dampers and air-pattern control blades allow airflow control.

Overlapping flange and modular ceiling trims factory-installed with standard swing-gate hangers or field convertible with optional trim and hangers. T-hinges die-formed for maximum strength. Latches spring-loaded, concealed in reveal.

Housing formed from cold-rolled steel. Louvers formed from anodized aluminum. No asbestos is used in this product.

FINISH
Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with high-gloss, baked white enamel.

ELECTRICAL SYSTEM
Thermally-protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast is standard. Energy saving and electronic ballasts are sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTING
UL Listed (standard). CSA Certified or NOM Certified (see Options).
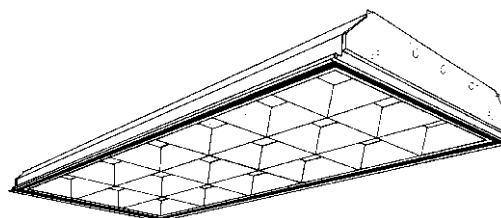
WARRANTY
Guaranteed for one year against mechanical defects in manufacture.

Specifications subject to change without notice.

3" Deep Louver

Specifications

Length: 48 (1218)

Width: 24 (609)

Depth: 5-15/16 (151)

Weight: 35 lbs (16 kg)

48 (1218)

5-15/16 (151)

24 (609)
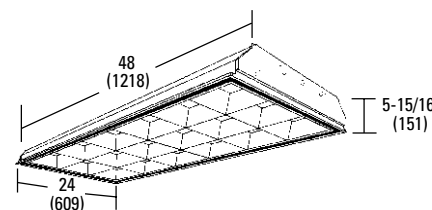
All dimensions are inches (millimeters).

ORDERING INFORMATION

Example: **2PM3 G B 3 32 24ND 120 GEB**

2PM3

Series	Number of lamps	Lamp type	Voltage	Options
2PM3 Paramax 3" deep cell parabolic, 2' wide	2, **3**, 4, 6 Not included.	**32** 32W T8 (48") **40** 40W T12 (48")	**120**, 277, 347, **MVOLT**[2] Others available.	**1/3** One 3-lamp ballast **1/4** One 4-lamp ballast **GEB** Electronic ballast, ≤20% THD **GEB10IS** Electronic ballast, ≤10% THD, Instant Start **GEB10RS** Electronic ballast, ≤10% THD, Rapid Start **EL** Emergency battery pack (nominal 300 lumens; see Fluorescent Battery Packs tab) **LST** Tandem fixture pairs (shared ballasts) **PWS1836** 6' prewire, 3/8" dia., 18-gauge, 3 wires **GLR** Internal fast-blow fuse **GMF** Internal slow-blow fuse **LP__** Lamped; specify lamp type and color **CRE** Flanged trim for continuous row mounting (end) **CRM** Flanged trim for continuous row mounting (middle) **HRD** Heat-removal dampers **APB** Air-pattern control blades (A and D models only) **ACS** Air closure strips (A and D models only) **PAF** Painted after fabrication (white enamel) **JP10** Palletized and stretch-wrapped without individual cartons (10 per), G and MT trim only **CSA** CSA Certified **NOM** NOM Certified **2R** Two reflector channel covers[3]

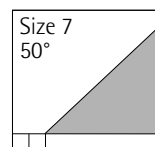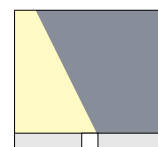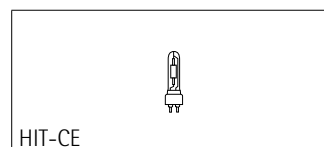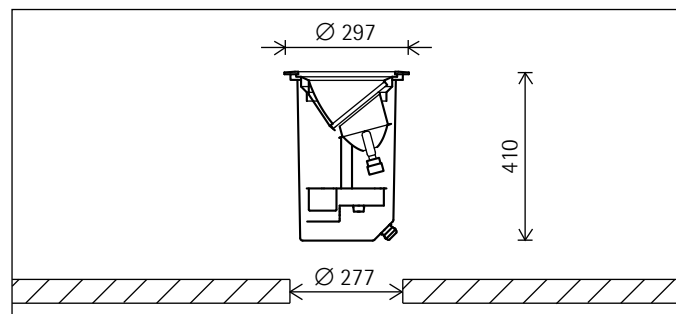| Trim type	Air function	Number of cells[1]	Louver finish
G Grid **F** Overlapping flange **MT** Modular fit-in **ST** Screw slot	**A** Air supply/return (slots in side trim) **H** Heat removal (through lamp cavity, dampers available) **D** Combination A & H **B** Static (no air function, matching appearance)	12, 16, 18, **24**, 32	**ND** Achroma™ non-iridescent diffuse silver **LD** Low iridescent anodized diffuse silver **LS** Low iridescent anodized specular silver **C** Diffuse gold anodized (champagne)

NOTES:
1 Where applicable, number of rows is divisible by number of lamps unless specified otherwise.
2 MVOLT available with GEB10IS only.
3 Only available with 3-lamp 18 and 24 cell versions.

ERCO

Tesis Recessed floor luminaire

Lens wallwasher for metal halide lamps

HIT-CE

IP68 3m

Ø 297
410
Ø 277

Size 7
50°

33724.000
Reflector colour Silver
HIT-CE 70W G12 6600lm

Product description
Housing: corrosion-resistant cast aluminium, No-rinse surface treatment. Black double powder-coated. Mounting by means of an adjustable bar. Clamp extension up to 35mm.
Cable 3x1.5mm², L 1m.
Control gear with temperature controller, timed ignitor, capacitor.
Wallwasher reflector: Aluminium, silver anodised.
Darklight reflector: aluminium, silver, bright anodised, with wallwasher lens. Cut-off angle 50°. Without spill light.
Screw-mounted cover ring with flush safety glass: corrosion resistant stainless steel.
Safety glass: 12mm, clear. Surface temperature 75°C. Can be driven over by vehicles with pneumatic tyres. Load 44kN.
Installation with separate connection sleeve.
Protection mode IP68 3m: protection against dust ingress, and continuous immersion up to 3m deep.
On site protection must be provided using a residual current circuit breaker, FI<30mA.
Weight: 10.20 kg

750 cd/klm
150°   150°
120°   120°

HIT-CE 70W G12 6600lm

Ø 56
2
70
Ø 40
Ø 45

LED

IP68
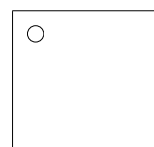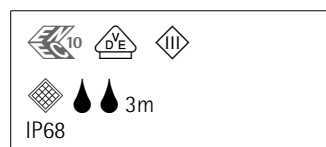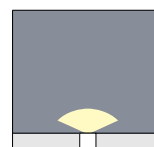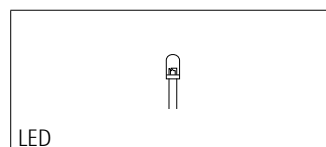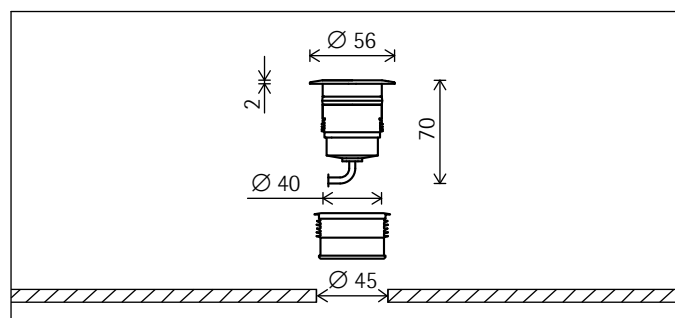
33764.000
LED White

Product description
Housing with gasket: stainless steel.
Installation bush with ribs: plastic.
Cable 4x0.75mm², L 500mm.
LED module:
Power consumption 0.5W.
Nominal voltage 30V DC.
Clear prismatic diffuser with circular light aperture.
Cover ring: corrosion resistant stainless steel, with 6mm safety glass. Load 5kN.
Control gear to be ordered separately.
Protection mode IP68 3m: protection against dust ingress, and continuous immersion up to 3m deep.
Weight: 0.16 kg

PH 4½-3½ Glass Floor
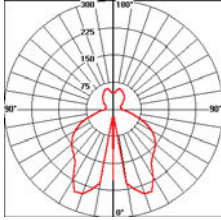
Photometric Report:	PH41/2-31/2-F-1-100W-A19-IF.IES
Report No.:	LP0380
Poulsen Report No.:	PH41/2-31/2-F-1-100W-A19-IF.IES
Luminaire:	PH 4 Glass Table and Floor
Lamp:	1/100W/A19/IF
Efficiency:	55.1%
Description:	All data shown are per 1750 lumens. This report can be used for calculation on all versions. Use only actual lumen data when calculating.

Candlepower Distribution

Vertical Angle	Candela
0	196
5	20
10	208
25	252
35	183
45	159
55	138
65	102
75	57
90	24
120	28
150	53
180	44

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0-30	197	11.3	20.4
0-40	315	18.0	32.6
0-60	561	32.1	58.1
0-90	758	43.3	78.5
90-120	69	3.9	7.2
90-130	98	5.6	10.2
90-150	161	9.2	16.7
90-180	207	11.8	21.5
0-180	965	55.1	100.0

Coefficients of Utilization - Zonal Cavity Method
Effective Floor Cavity Reflectance 20%

Ceiling Reflectance (%)	80				70				50			30			10			0
Wall Reflectance (%)	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio																		
0	63	63	63	63	60	60	60	60	55	55	55	50	50	50	45	45	45	43
1	57	54	51	49	54	52	49	47	47	45	44	43	41	40	39	38	37	35
2	51	47	43	40	49	45	41	38	41	38	36	37	35	33	34	32	31	29
3	47	41	36	33	44	39	35	32	36	32	30	33	30	28	30	28	26	24
4	43	26	31	27	40	34	20	27	32	28	25	29	26	23	26	24	22	20
5	39	32	27	23	37	30	26	23	28	24	21	26	23	20	24	21	19	17
6	36	29	24	20	34	28	23	20	25	22	19	23	20	18	21	19	17	15
7	33	26	21	18	32	25	21	17	23	19	16	21	18	16	20	17	15	13
8	31	24	19	16	29	23	18	15	21	17	15	19	16	14	20	17	15	12
9	29	22	17	14	27	21	17	14	19	16	13	18	15	12	17	14	14	11
10	27	20	16	13	26	19	15	12	18	14	12	17	13	11	15	13	11	10

PH 4½-3½ Glass Floor (1927) provides soft illumination. The PH 4½ family is based on the principle of a reflecting multi-shade system, producing a harmonious and glare free illumination. The shades are drawn over a logarithmic spiral, with the center of the light source placed in the spiral's focal point.

Finish
White opal glass. High lustre chrome plated.

Material
Shades: Handblown white opal glass. Base: High lustre chrome plated, spun brass. Top plate: High lustre chrome plated, spun brass. Stem: High lustre chrome plated, steel.

Mounting
Cord type: Black. Cord length: 9'. Plug: 120V.

Weight
Max. 34 lbs.

Label
cUL, Dry location. IBEW.

specification

Ordering example:

1	2	3	4
Prod.code	Light source	Volt.	Finish
PH4½-3½-F	1/100W/A-19/IF medium	120V	GLASS

1 | **Product code**
PH4½-3½-F

2 | **Light source**
1/100W/A-19/IF medium

3 | **Voltage**
120V

4 | **Finish**
GLASS

Info notes:
I. In-line on/off foot switch provided.
II. All handblown opal glass shades are sandblasted on the undersides for uniform light distribution.
III. The comparable EU version has the following classification: Ingress Protection Code: IP20.

Spare parts:
PH4½-3½ top shade
PH4½-3½ middle shade
PH4½-3½ lower shade

louis poulsen

Louis Poulsen Lighting, Inc., 3260 Meridian Parkway, Fort Lauderdale, FL 33331 Telephone: (954) 349-2525 Fax: (954) 349-2550

www.louispoulsen.com

The original BEGA classic caged sphere

General purpose pole mounted sphere luminaires with diffused source.

Enclosure: Molded high impact acrylic, minimum ⅛" thick, two piece half spheres clamped and gasketed at the equator by a die cast aluminum six spoke lower guard and clamping ring secured by eight (8) socket head stainless steel fasteners. (9150/9156 is hand blown, seamless, three-ply opal glass). Enclosure assembly is secured to fitter by four (4) socket head stainless steel set screws threaded into stainless steel inserts.

Guard: One piece 8-rib die cast aluminum slip fitter slip fits pole and is secured by secured by six (6) stainless steel socket head set screws. 9150/9156/9250/9350 slip fit a 2⅜" O.D.; 9259 slip fits a 3" O.D.

Electrical: Lampholders: Incandescent are medium base porcelain with nickel plated copper screw shell supplied with 200°C high temperature leads, rated 600V. H.I.D. rated 4KV. Fluorescent are type GX23-2 (13W). Ballasts are located in the base of the selected BEGA pole and are available in 120V or 277V, HPF - specify.
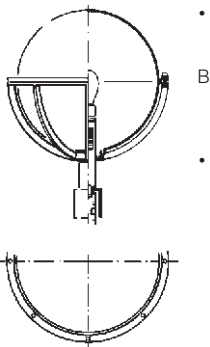
Finish: Standard finish is an eight step process consisting of two coats of black or white polyurethane, one with light texture over a phosphate base.

Custom colors supplied on special order.

U.L. listed, suitable for wet locations.

Pole mounted luminaires with lower guard. Die cast aluminum fitter which slip fits a pole top or tenon. 9150, 9156, 9250, 9350 slip fits 2⅜" O.D. and 9259 slips 3"O.D. Three-ply opal glass standard on 9150, 9156; optional opal acrylic available - suffix PDC. Opal DR acrylic half spheres clamped at the equator standard on 9250, 9350, 9259.
Color: Black or white.
Note: Metal Halide and HPS pole top units require ballasts mounted in base of 5" butt pole.

			Lamp		Lumen	A	B
9150	Pole top	1	100W	A-19	1750	13¾	16¼
9156P	Pole top	1	13W	PLC	860	13¾	16¼
9250	Pole top	1	150W	A-21	2850	17¾	20¼
9350S	Pole top	1	50W	E-17 HPS	4000	17¾	20¼
9350MH	Pole top	1	100W	ED-17 MH	8500	17¾	20¼
9259S	Pole top	1	70W	E-17 HPS	6400	21⅝	25½
9259MH	Pole top	1	175W	ED-17 MH	14000	21⅝	25½

Sample Catalog Number

CB6638	-	1FS24(120V)	-	LBZ	-	CAL	-	XPS
Model		Lamp (Voltage)		Frame Finish		Panel Finish		Option

Model	Lamp (Voltage)	Frame Finish	Panel Finish	Options
CB6638	**1FS24** 24w T-5/HO, mini bi-pin base (Voltage) **120V** **277V**	**PTD** Painted - specify color code, see page 519 (ex. **WHT** for White) **BA** Brushed Aluminum	**PTD** Painted - specify color code, see page 519 (ex. **WHT** for White)	• **ABA** Hand painted alabaster alternative **IEM** Integral emergency battery pack **FU** Fusing • **DIM** Fluorescent dimming, Lutron Eco-10 **ULD** UL damp location label (painted only) **VR** Vandal resistant housing fasteners **XPS** Express 10 day shipment • Option is not available with **XPS** program

Model	Lamp (Voltage)	Frame Finish	Panel Finish	Options
CB6640	**1FS39** 39w T-5/HO, mini bi-pin base (Voltage) **120V** **277V**	**PTD** Painted - specify color code, see page 519 (ex. **WHT** for White) **BA** Brushed Aluminum	**PTD** Painted - specify color code, see page 519 (ex. **WHT** for White)	• **ABA** Hand painted alabaster alternative **IEM** Integral emergency battery pack **FU** Fusing • **DIM** Fluorescent dimming, Lutron Eco-10 **ULD** UL damp location label (painted only) **VR** Vandal resistant housing fasteners **XPS** Express 10 day shipment • Option is not available with **XPS** program

Model	Lamp (Voltage)	Frame Finish	Panel Finish	Options
CB6642	**1FS54** 54w T-5/HO, mini bi-pin base (Voltage) **120V** **277V**	**PTD** Painted - specify color code, see page 519 (ex. **WHT** for White) **BA** Brushed Aluminum	**PTD** Painted - specify color code, see page 519 (ex. **WHT** for White)	• **ABA** Hand painted alabaster alternative **IEM** Integral emergency battery pack **FU** Fusing • **DIM** Fluorescent dimming, Lutron Eco-10 **ULD** UL damp location label (painted only) **VR** Vandal resistant housing fasteners **XPS** Express 10 day shipment • Option is not available with **XPS** program

| Model	Lamp (Voltage)	Frame Finish	Panel Finish	Options
CB6644	**1FS80** 80w T-5/HO, mini bi-pin base (Voltage) **120V** **277V**	**PTD** Painted - specify color code, see page 519 (ex. **WHT** for White) **BA** Brushed Aluminum	**PTD** Painted - specify color code, see page 519 (ex. **WHT** for White)	• **ABA** Hand painted alabaster alternative **FU** Fusing **ULD** UL damp location label (painted only) **VR** Vandal resistant housing fasteners **XPS** Express 10 day shipment • Option is not available with **XPS** program

Features

▾ ADA compliant
▾ Extruded aluminum frame
▾ Solid metal trim and accents
▾ Oven cured low VOC lacquer paint
▾ 1/8″ thick virgin acrylic diffuser with matte finish, UV stable, UL-94 HB Flame Class rated
▾ Easy tool-less relamping
▾ Fluorescent lamping
▾ High power factor electronic ballast
▾ Shallow 3-1/2″ depth recessed housing rated for through-circuit wiring
▾ Recessed housing in stock and available for rough-in installation
▾ Rated for insulation contact
▾ 5 year product warranty

Variations

▾ Specialty finishes to match architectural detail
▾ Mix and match accents and trim from other product designs
▾ Increase/decrease fixture height and/or width

Installation Instructions

Stud

Wall Cutout
◄ 4-3/4″ ►

1″ Maximum wall thickness

RL

3-1/2″
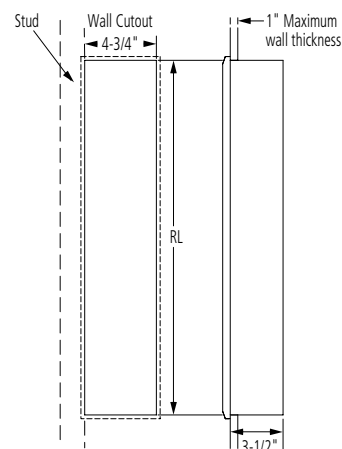
Note: One long edge of cutout must be adjacent to a wall stud or other appropriate mounting structure.

Fixture Length	RL
24″	23-1/2″
36″	35-1/2″
47-1/2″	47″
59-1/2″	59″

UL & C UL Dry Locations

VISA LIGHTING
An Oldenburg Group Company

ARTRES SCONCE

énergie®

Catalog Number

FIXTURE
ARS – Artres Sconce

VOLTAGE
120 – 120 Volt
277 – 277 Volt

EXAMPLE: ARS-120

Specifications

CONSTRUCTION
Fixture is constructed of extruded aluminum, type F22. All seams and edges are welded together with invisible welds. Fixture mounts to wall-bracket with recessed screws.

SHIELDING
Lamp openings are shielded with gasketed glass plates.

FINISH
Finished in lightly textured gray polyester powdercoat. Finish specially developed for outside exposure with excellent all weather resistance.

ELECTRICAL
Specify 120 volt or 277 volt. Fixture is supplied with internal electronic transformer and is fully gasketed and U.L./C.U.L. wet location labeled. Fixture may be dimmed with no special modification or specification.
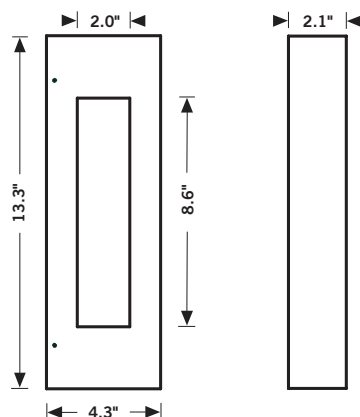
LAMPING
Single, 35 Watt, MR-11. Lamp is placed above the vertical window to evenly illuminate both sides of the vertical opening. Lamp not included.

MOUNTING
Fixture is supplied with an Énergie junction box. See reverse for detail. Fixture may be mounted in any orientation.

Dimensions

2.0"   2.1"

13.3"   8.6"

4.3"

multiline®

Wall up/downlight luminaires

High output wall mounted luminaires with fully shielded light source for dual up and down lighting effects for indoor or outdoor applications.

Housing: One piece die cast aluminum supplied with universal mounting bracket for direct attachment to 3½" or 4" octagonal wiring box (6610/615) use 538 small opening wiringbox). A round "rotation" plate allows the housing to be precisely leveled (or rotated) after installation.

Enclosure: Tempered clear glass, ³⁄₁₆" thick, retained by one piece die cast aluminum step baffle frame on bottom, flush on top, secured by stainless steel screws threaded into stainless steel inserts. Internal full, dual semi-specular optical system. Fully gasketed for weather tight operation using molded silicone rubber "U-channel".

Electrical: Lampholders: Incandescent are double contact bayonet, (6610) stainless steel with porcelain insulator disk with 250°C high temperature leads, rated 600V, or medium base porcelain (6615) with nickel plated copper screw shell supplied with 200°C high temperature leads. H.I.D. are G12, bi-pin, pulse rated 4KV.
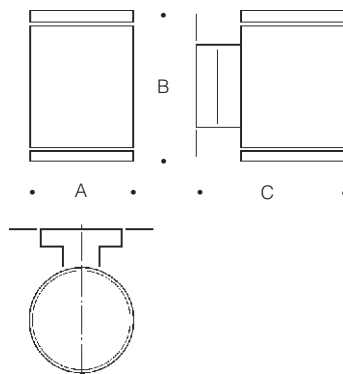Ballasts: are magnetic, HPF, available in 120V or 277V - specify.

Finish: Standard finish is an eight step process consisting of two coats of black or white high solids, UV stabilized polyurethane, one with light texture over a phosphate base.
Custom colors supplied on special order.
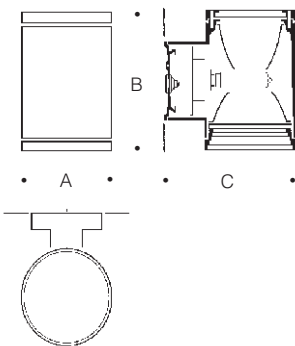
U.L. listed, suitable for wet locations.

Photometry

Wall mounted luminaires with fully shielded single, horizontal light source for up/down lighting.
Die cast aluminum housing, arm, canopy and step baffle. Full anodized aluminum double reflector with clear tempered glass.
Color: Black or white.

			Lamp	Lumen	A	B	C
6616MH	Wall	1	39W G12T6 MH	3300	7½	10⁷⁄₁₆	12
6620MH	Wall	1	70W G12T6 MH	6600	8⅝	12⁹⁄₁₆	13⁹⁄₁₆

Wall mounted luminaires with fully shielded single horizontal light source for up/down lighting.
Die cast aluminum housing, arm, canopy and step baffle.
Full anodized aluminum double reflector with clear tempered glass.
Color: Black or white.

			Lamp	Lumen	A	B	C
6610/538	Wall	1	Q100W T4 DCB	1800	4⅜	6¼	6¼
6615/538	Wall	1	Q150W MED T10	2500	6	8⅝	8½
538		Small opening wiring box included					

Metal Halide

High Pressure Sodium

Tungsten Halogen

V Mount 1:10 Scale

8" (203mm)

5-1/8" (130mm)

8-7/8" (225mm)

H G F E B A
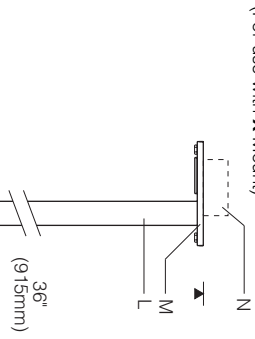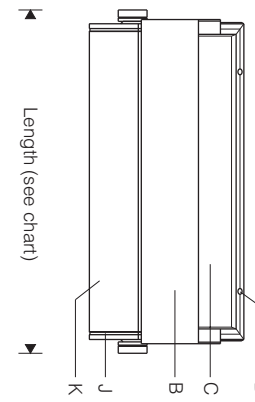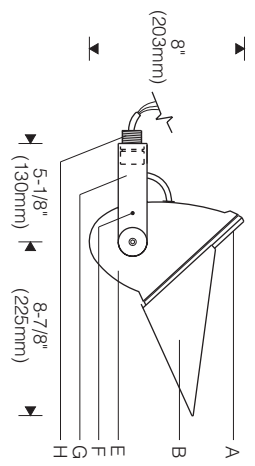
Wattage	Source	Length
150	HPS	12-1/16" (306mm)
175	MH	
300-500	Halogen	
250, 400	MH/HPS	17-13/16" * (452mm)
900, 1000	Halogen	
2x400	MH/HPS	24-7/8" * (632mm)

* Yoke includes (2) 9/32" dia. holes at 12" (305mm) centers for supplemental mounting support (1/4" fasteners by others)

Side-Mount Slipfitter 1:12 Scale (For use with **X** Mount)

5-7/8" (149m)

6" (152mm)

4-1/8" (105mm)

Length (see chart)

8-7/8" (225mm)

O

K J B C D

Cantilever 1:12 Scale (For use with **X** Mount)

4" (102mm)

36" (915mm)

2-1/4" (57mm)

N M L
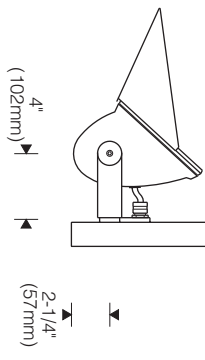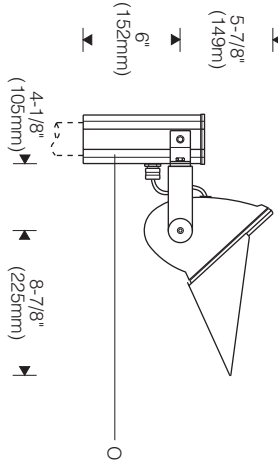
Specifications

A Mitred extruded aluminum door with silicone gasket

B Cutoff visor (included)

C Clear, flat, thermal and impact resistant tempered glass lens

D Tamper-resistant captive door screws

E Die-cast aluminum end plates

F Locking set screw

G Aluminum yoke

H 1/2" NPT nipple

J Aluminum reveal plates (black)

K Specular extruded aluminum reflector

L 1-1/2" x 2" aluminum arm

M Welded aluminum mounting plate with splice access cover

N Recessed outlet box

O Accessory extruded aluminum slipfitter for 2-3/8" O.D. pole or tenon

Finish:

Exterior surfaces - 6 stage pretreatment and electrostatically applied thermoset polyester powder coating for a durable abrasion, fade and corrosion resistant finish. Choice of semi-gloss colors (see ordering information).

Reflector and internal end plates - extruded high purity aluminum with clear anodized specular finish. All hardware and components - non corrosive stainless steel or aluminum. Door secured with captive tamper-resistant (#10 Torx) screws in stainless steel threaded reflector inserts to prevent seizing. Yoke attaches with recessed hex socket screws.
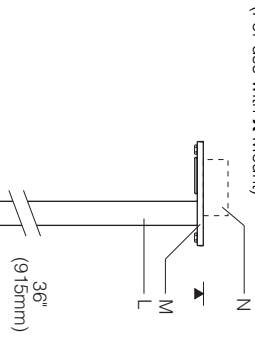
Mounting:

1/2" NPT nipple (wet location outlet box or fitting by others). Aluminum cantilever mounting assembly ordered separately; specify **X** mount. Suitable backing structure required.

Accessory slipfitter ordered separately. Top-mount for single unit, or side-mount for one or two (back-to-back) units; specify **X** mount. Fits 2-3/8" O.D. stanchion, pole or tenon (by others).

Standard:

UL listed or CSA certified for wet locations.

Electrical:

Use 90°C wire for supply connections. Leads exit reflector through watertight flush cord entry, silicone coated fiberglass sleeving; 8" exposed beyond nipple. (60" leads on **X** mount).

Tungsten halogen - recessed single contact (RSC) lampholders in patented clamping supports for maximum heat dissipation.

Metal halide - position oriented mogul lampholder for use with either POMB horizontal or universal position lamp (medium base for 175W). Rotating bracket allows horizontal lamp to be locked in proper position after aiming (hinged lampholders for 2x400W are fixed in position for uplighting across overhead surface). End-of-lamp aligner ensures consistent optical performance and minimizes damage from shock or vibration.

HPS - pulse rated mogul lampholder (medium base for 150W).

Ballast - remote HPF constant wattage autotransformer (CWA) rated for -20°F/29°C starting (high reactance autotransformer (HX-HPF) for 150W HPS). Weatherproof aluminum enclosure includes three 7/8" dia. entries and one 3/8" liquidtight conduit connector. Optional remote ballast for dry indoor location.

For complete ballast specifications, see Accessories Section.
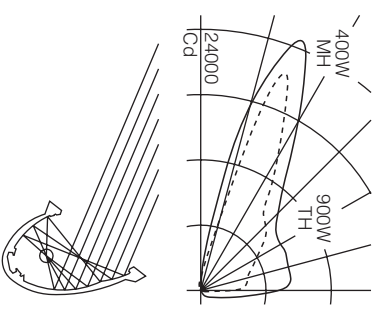
Features

- Compact yet powerful - up to 1000W halogen, 2x400W metal halide for uplighting large vaults, canopies or arches
- Optimum performance - high output position oriented metal halide, end-of-lamp aligner, set screw locks aiming
- Built to last - all aluminum and stainless steel components, tempered glass lens, tamper-resistant door screws

Performance

Two parabolic reflector sections drive light across the overhead plane from one edge. An elliptical section redirects its light to a parabola and shields the lamp. Asymmetry is maximized resulting in high beam efficiency and superior surface uniformity. The fast "runback" minimizes wasted spill light. Wide lateral distribution permits greater spacings.

For complete photometrics, visit www.elliptipar.com

400W MH

900W TH

24000 Cd

2000 Cd

U 7.0

To Order

To form a Catalog Number

1	5	2	-		-		-	V	-		-		-		-	
1	2	3		4		5		6		7		8			

Project: _____

Type: _____

1 Source

M = Metal halide
H = High pressure sodium
T = Tungsten halogen

2 Style

152 = Large outdoor, **remote** ballast

3 Lamp

Lamp Code	Watt-age	Lamp Number	Volt-age(s) / Ballast	Dis-tance
Metal Halide*				
0175	175	MH175/U/MED	A, B, H	CWA	105'(32m)
0250	250	MH250/HOR	A, B, H	CWA	75'(23m)
0400	400	MH400/HOR	A, B, H	CWA	50'(15m)
2400‡	2x400	(2) MH400/HOR	A, B, H	CWA	50'(15m)
High Pressure Sodium				
0150	150	LU150/MED	A, B, H	HX-HPF	5'(1.5m)
0250	250	LU250	A, B, H	CWA	5'(1.5m)
0400	400	LU400	A, B, H	CWA	10'(3.0m)
2400	2x400	(2) LU400	A, B, H	CWA	10'(3.0m)
Tungsten Halogen				
0300	300	Q300T3	A		
0350+	350	Q350T3/CL/HIR+	A		
0500	500	Q500T3	A		
0900+	900	Q900T3/CL/HIR+	B, G		
1000	1000	Q1000T3	A, F, G		

4 Mounting

V = External yoke with 1/2" NPT nipple (wet location outlet box or fitting by others)

X = External yoke for use with accessory cantilever or slipfitter (order separately)

5 Finish

02 = Semi-gloss white
06 = Dark bronze
07 = Silver
08 = Semi-gloss black
12 = Green
99 = Custom RAL or computer matched color to be specified, consult sales representative.

6 Voltage

A = 120V
B = 277V
F = 220V (1000W TH only)
G = 240V
H = 347V (900W, 1000W TH only)

7 Option (See Accessories Section for specifications)

V0 = Cutoff visor included, no other options

VD = Remote ballast for dry indoor location

VH = Long distance remote HPS ballast up to 35' (10m) for 150W HPS, up to 50' (15m) for 250W and 400W HPS

VL = Micro-prismatic tempered glass lens (replaces clear, flat lens, offers smoother light pattern at reduced peak candlepower).

VX = For modification not listed, include detailed description. Consult factory prior to specification.

Note: Cutoff visor included unless specified otherwise.

8 Standard

0 = UL, Underwriters Laboratories
J = CSA, Canadian Standards Association

Example

H152 - 0400 - V - 07 - B - VH0

Large outdoor model for use with 400 watt high pressure sodium lamp. External yoke with 1/2" NPT nipple. Silver powder coat finish. Long distance (up to 50') remote 277V ballast in weatherproof enclosure. UL. Cutoff visor included.

Footnotes

* For complete lamp and ballast information, see Accessories Section.

* Use clear metal halide horizontal or universal position lamp with compact envelope. 250 and 400W lamps are horizontal position oriented mogul envelope (POMB) that yield higher light output than universal position lamps. Standard metal halide lamp colors are 4000K for 175W, 3200K for 250 and 400W.

‡ 2x400W metal halide uses position oriented mogul lampholders that are hinged and fixed in position to uplight across an overhead surface (±15°).

+ 350 and 900W IR coated halogen yield approximately the same light output as conventional 500 and 1500W halogen lamps respectively.

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Accessories

Order separately. See Accessories Section for specifications.

AC [__] 36 [__] = **Cantilever**, 36' (914mm) setback (for use with **X** mount unit)

L = single unit
U = double unit (back to back)

5 Finish

0 = UL
J = CSA

ASF [__] S [__] 0 = **Side-mount slipfitter**, for 2-3/8" O.D. pole, stanchion or tenon (for use with **X** mount units)

5 Finish

1 = single unit
2 = double unit (back to back)

ASF [__] T10 = **Top-mount slipfitter**, for 2-3/8" O.D. pole, stanchion or tenon (for use with single **X** mount unit)

L = single unit
U = double unit

AE [__] V [__] 0D0 = External vertical blade **baffle**, black, for lengthwise shielding
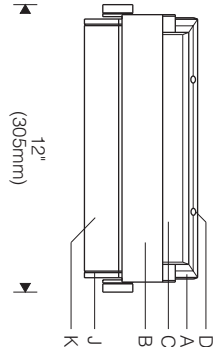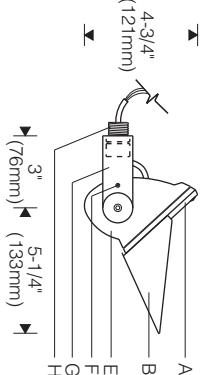
2 = 25° shielding
4 = 45°

AXF = Wet location **color filter** assembly, interchangable frame with stripped color glass.

Not suitable for all lamp wattages. Consult factory for complete specifications and ordering information.

C = 300W-350W TH; 150W-175W HID (not for use with 500W TH)
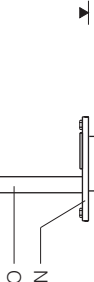D = 250W, 400W HID
F = 900W, 1000W TH, 2x400W HID

AFK000X [__] = Ballast **fuse** kit

0 = UL
J = CSA

Style 152

V Mount 1:8 Scale

4-3/4" (121mm)

3-3/8" (86mm)

6" (152mm)

3" (76mm)

5-1/4" (133mm)

M
H
G
F
E
B
A

Side-Mount Slipfitter 1:12 Scale
(For use with **X** Mount)

11-3/8" (289mm)

M

Top-Mount Slipfitter 1:12 Scale
(For use with **X** Mount)

7-1/2" (190mm)

6-1/2" (165mm)

3" (76mm)

M
L
K
N

Cantilever 1:12 Scale
(For use with **X** Mount)

12" (305mm)

30" (762mm)

1-3/8" (35mm)

N
O

D
A
C
B
J
K
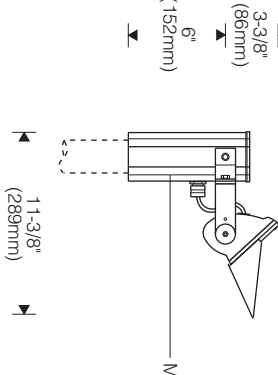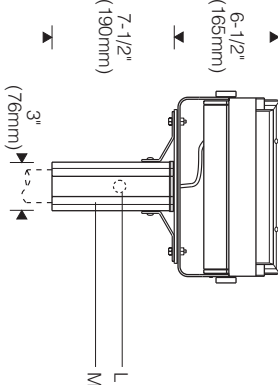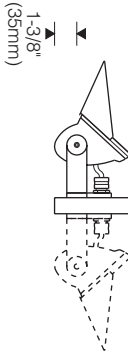
Specifications

A Mitred extruded aluminum door frame with silicone gasket

B Cutoff visor (included)

C Micro-prismatic, thermal and impact resistant tempered glass lens

D Tamper-resistant captive door screws

E Die-cast aluminum end plates

F Locking set screw

G Aluminum yoke

H 1/2" NPT nipple

J Aluminum reveal plates (black)

K Specular extruded aluminum reflector

L 1/2" NPT entry (with plug)

M Accessory extruded aluminum slipfitter for 2-3/8" O.D. pole or tenon

N Welded aluminum mounting plate with splice access cover

O 1" x 1-1/2" aluminum arm

Finish:
Exterior surfaces - 6 stage pretreatment and electrostatically applied thermoset polyester powder coating for a durable abrasion, fade and corrosion resistant finish. Choice of semi-gloss colors (see ordering information).

Reflector - extruded high purity aluminum with clear anodized specular finish. All hardware and components - non corrosive stainless steel or aluminum. Door secured with captive tamper-resistant (#10 Torx) screws in stainless steel threaded reflector inserts to prevent seizing. Yoke attaches with recessed hex socket screws.

Mounting:
1/2" NPT nipple (wet location outlet box or fitting by others). Aluminum cantilever mounting assembly ordered separately; specify **X** mount. Suitable backing structure required.

Accessory slipfitter ordered separately. Top-mount for single unit, or side-mount for one or two (back-to-back) units; specify **X** mount. Fits 2-3/8" O.D. stanchion, pole or tenon (by others).

Electrical:
Use 90°C wire for supply connections. Leads exit reflector through watertight flush cord entry and silicone coated fiberglass sleeving with 8" (.2m) leads for **X** mount. 60" (1.5m) leads for **X** mount.

Tungsten halogen - recessed single contact (RSC) or DC bayonet lampholders retained with patented clamping supports for maximum heat dissipation.

Metal halide - G12 lampholder for use with single ended lamp. Remote HPF high reactance autotransformer (HX-HPF) ballast rated for -20°F/-29°C starting. Die-cast aluminum weatherproof ballast enclosure includes four 1/2" NPT threaded entries. Optional electronic ballast with automatic shut-off to eliminate end-of-life cycling. Optional remote ballast for dry indoor location.

For complete ballast specifications, see Accessories Section.

Standard:
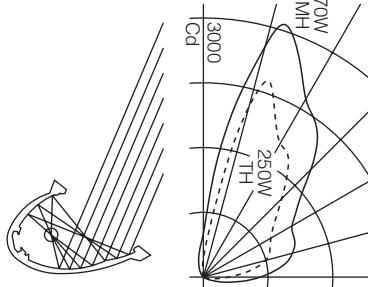UL listed or CSA certified for wet locations.

Features

- Compact size, minimal setbacks and wide spacings - ideal for unobtrusive uplighting of soffits, canopies, vaults

- Durable and secure - thermal and impact resistant lens, tamper-resistant fasteners, set screw in yoke locks aiming

- Precured silicone gaskets, unique flush cord entry - seal out dirt and moisture, maintain performance

Performance

Two parabolic reflector sections drive light across the overhead plane from one edge. An elliptical section redirects its light to a parabola and shields the lamp. Asymmetry is maximized resulting in high beam efficiency and superior surface uniformity. The fast "runback" minimizes wasted spill light. Wide lateral distribution permits greater spacings.

For complete photometrics, visit www.elliptipar.com

70W MH
250W TH
3000 Cd

U 1.0

elliptipar

U 1.1

To Order

To form a Catalog Number

1	2	3	4	5	6	7	8
1 5 1	-	-	-	-	-	- V	

Project:

Type:

1 Source

M = Metal halide
T = Tungsten halogen

2 Style

151 = Small outdoor, **remote** ballast

3 Lamp

Lamp Code	Watt-age	Lamp Number	Volt-age(s)	Ballast	Dis-tance
*Ceramic Metal Halide**					
035G	35	CMH35/T6/G12	A, B	HX-HPF	15'(4.5m)
070G	70	CMH70/T6/G12	A, B, H	Electr.	10'(3m)
150G	150	CMH150/T6/G12	A, B, H	Electr.	10'(3m)
Tungsten Halogen					
0100	100	Q100DC	A	HX-HPF	15'(4.5m)
0150	150	Q150DC	A	HX-HPF	15'(4.5m)
0200	200	Q200T3	A	Electr.	15'(4.5m)
0250	250	Q250DC	A	Electr.	15'(4.5m)

* For complete lamp and ballast information, see Accessories Section.
* Metal halide lamps using ceramic arc tubes yield higher light output than lamps with quartz arc tubes. They also offer improved lamp-to-lamp color consistency and a more stable color temperature over their life (±200K). Standard lamp color is 3000K / 80+ CRI.

4 Mounting

V = External yoke with 1/2" NPT nipple (wet location outlet box or fitting by others)
X = External yoke for use with accessory cantilever or slipfitter (order separately)

5 Finish

02 = Semi-gloss white
06 = Dark bronze
07 = Silver
08 = Semi-gloss black
12 = Green
99 = Custom RAL or computer matched color to be specified, consult sales representative.

6 Voltage/Ballast

Magnetic
A = 120V
B = 277V
H = 347V (Canada)*

* Not available for 35W metal halide

Electronic
1 = 120V
2 = 277V

7 Option (See Accessories Section for specifications)

V0 = Cutoff visor included, no other options
VD = Remote ballast for dry indoor location
VH = Long distance remote metal halide ballast,
35W: 15 min. up to 50' max. (15m)
70W: up to 50' max. (4.5m - 15m),
150W: up to 50' max. (15m)
VX = For modification not listed, include detailed description. Consult factory prior to specification.

Note: Cutoff visor included unless specified otherwise.

8 Standard

0 = UL, Underwriters Laboratories
J = CSA, Canadian Standards Association

Example

M151 - 150G - X - 06 - A - VDJ

Small outdoor model for use with 150 watt metal halide lamp. External yoke for use with accessory cantilever or slipfitter (order separately). Dark bronze powder coat finish. Remote encapsulated 120V magnetic ballast suitable for dry indoor location. CSA. Cutoff visor included.
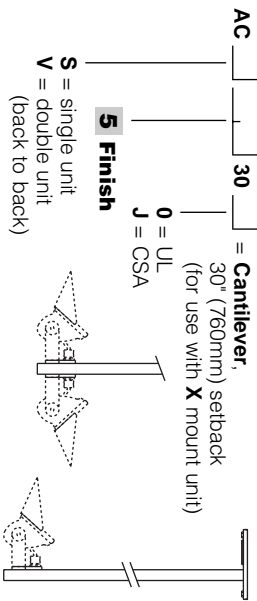
Accessories

Order separately. See Accessories Section for specifications.

AC ___ 30 ___ = **Cantilever,** 30" (760mm) setback (for use with **X** mount unit)

5 Finish
0 = UL
J = CSA

ASF ___ T10 = **Top-mount slipfitter,** for 2-3/8" O.D. pole, stanchion or tenon (for use with single **X** mount unit)

S = single unit
V = double unit (back to back)

ASF ___ S ___ 0 = **Side-mount slipfitter,** for 2-3/8" O.D. pole, stanchion or tenon (for use with **X** mount units)
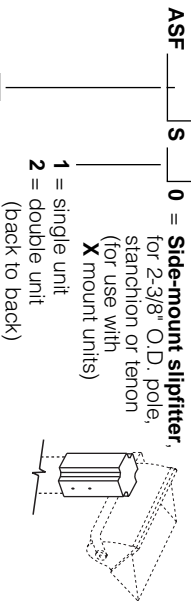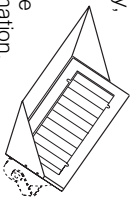
5 Finish
0 = single unit
1 = single unit
2 = double unit (back to back)

AXF = Wet location **color filter** assembly, interchangeable frame with stripped color glass, visor. **Maximum 200W TH, 70W CMH.**

Note: Consult factory for complete specifications and ordering information.

AEBV ___ 0D0 = External vertical blade **baffle,** black for lengthwise shielding
2 = 25° shielding
4 = 45°

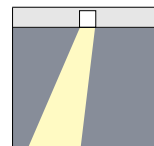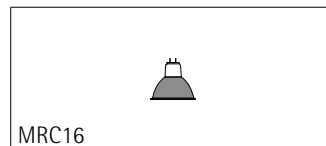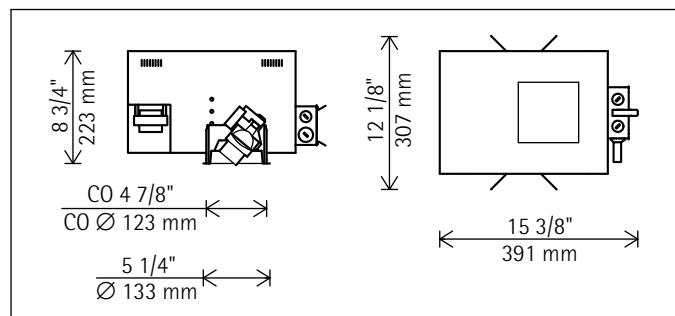**AFK000X** ___ = Ballast **fuse** kit
0 = UL
J = CSA

elliptipar

ERCO

Quadra Directional spotlight
for low-voltage halogen lamps

8 3/4"
223 mm

CO 4 7/8"
CO Ø 123 mm

5 1/4"
Ø 133 mm

12 1/8"
307 mm

15 3/8"
391 mm

MRC16

c(UL)us
Dry Damp Wet
⌂ ← Indoor

88045.023
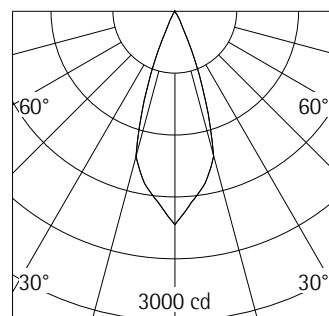MRC16 50W 12V GU5.3 10°
MRC16 50W 12V GU5.3 36°

Product description
Mounting plate: plastic, white.
Mounting ring for lamphold-
er carrier: cast aluminum, white
(RAL9002) powder-coated. 360°
rotation.
Lampholder carrier: cast aluminum,
black powder-coated, designed as
heat sink. 40° tilt.
Double-sided, reversible mount-
ing frame to cover the ceiling
aperture or for use as flush ceil-
ing, trim detail: cast aluminum,
white (RAL9002) powder-coated.
Mounting bracket: metal.
Mounting box for preinstallation
with junction box for through-
wiring, black powder-coated.
Magnetic transformer 120/12V,
60Hz inside mounting box. Snap-
in plug for connection between
transformer and luminaire.
Anti-glare ring: plastic, black, ex-
ternal white (RAL9002) lacquered.
Type Non IC luminaire.
Insulation materials must be kept
away from the luminaire by a min-
imum of 3". Thermally protected
luminaire. Suitable for damp loca-
tion. Removal of luminaire allows
access to transformer and junction
box from below.
Max. ceiling thickness 3/4".
Use lamps with up to 36° max.
beam angle.
Weigth: 13.01 lbs / 5.90 kg

MRC16 50W 12V GU5.3 10°

15000 cd
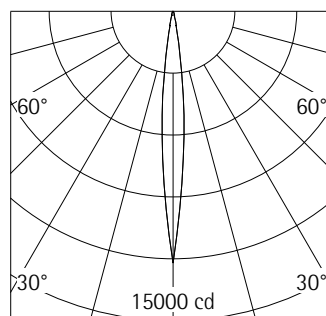
h(ft)	E(fc)	D(ft)
		10°
3	1363	0'6"
6	341	1'1"
9	151	1'7"
12	85	2'1"
15	55	2'7"

MRC16 50W 12V GU5.3 36°

3000 cd

h(ft)	E(fc)	D(ft)
		36°
3	231	1'11"
6	58	3'11"
9	26	5'10"
12	14	7'10"
15	9	9'9"
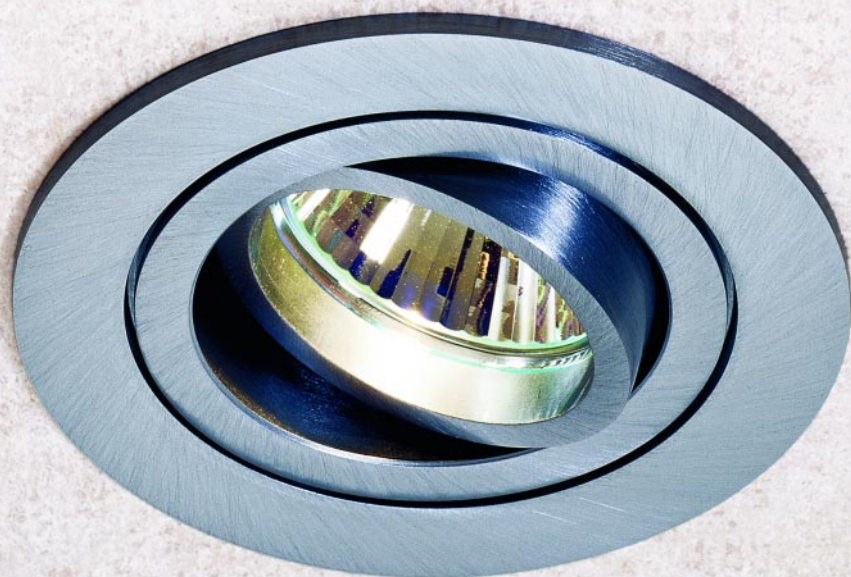
Varianti

Varianti MR-16: Matte Aluminum

Varianti is an adjustable recesses downlight trim series available for MR-11 and MR-16 lamps. The trim is made from three precision-machined metal rings. This three ring construction makes for easy re-lamping and ideal heat dissipation. A spring tension lamp holder insures positive lamp placement and allows the use of two optional lenses and louvers at the same time. Machined aluminum trims are powder coat painted white, black and metallic silver. Machined brass trims are plated chrome, matte aluminum, black nickel and polished natural brass. Consult factory for custom colors or finishes.

Specifications:
Rotating center ring pivots 35 degrees in either direction, capable of utilizing two (2) media accessories in conjuction with one MR-11 or MR-16 lamp. Snap-in/Pull-out center ring assembly provides convenient lamp servicing.

UL and cUL Listed for use with Ardee Lighting A35 series low-voltage rough-in downlight housings. Suitable for use in damp locations.

Lamp: Enclosed MR-11, 12 volt, or open MR-11 12 volt lamp and added protective lens. 35 watts maximum. Enclosed MR-16, 12 Volt, or open MR-16 12 volt lamp and added protective lens. 50 watts maximum.
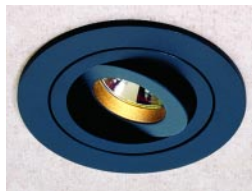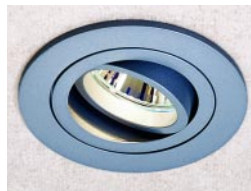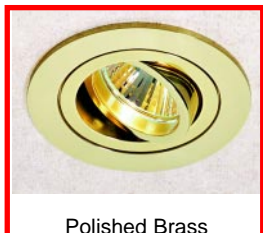

Black
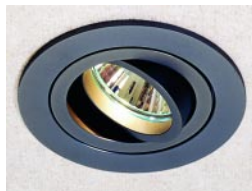
Black Nickel

Matte Aluminum

Metallic Silver

Polished Chrome

Polished Brass

White
w/ Honeycomb Louver

MR-11: DL20 Series
low voltage recessed downlight trim series

DL20BK	Varianti w/ MR-11 black
DL20BN	Varianti w/ MR-11 black nickel
DL20MA	Varianti w/ MR-11 matte aluminum
DL20MS	Varianti w/ MR-11 metallic silver
DL20PC	Varianti w/ MR-11 polished chrome
DL20PB	Varianti w/ MR-11 polished brass
DL20WH	Varianti w/ MR-11 white

MR-16: DL21 Series
low voltage recessed downlight trim series

DL21BK	Varianti w/ MR-16 black
DL21BN	Varianti w/ MR-16 black nickel
DL21MA	Varianti w/ MR-16 matte aluminum
DL21MS	Varianti w/ MR-16 metallic silver
DL21PC	Varianti w/ MR-16 polished chrome
DL21PB	Varianti w/ MR-16 polished brass
DL21WH	Varianti w/ MR-16 white

UL Listed with Rough-ins

A35R-120	Remodel rough-in, 50 watt max.
A35R-12	Remodel rough-in for remote transformer, 50 watt max.
A35S-120	Standard rough-in, 50 watt max.
A35S-12	Standard rough-in for remote transformer, 50 watt max.
A35I-120	IC rough-in, 35 watt max.

Consult factory for complete rough-in product offering
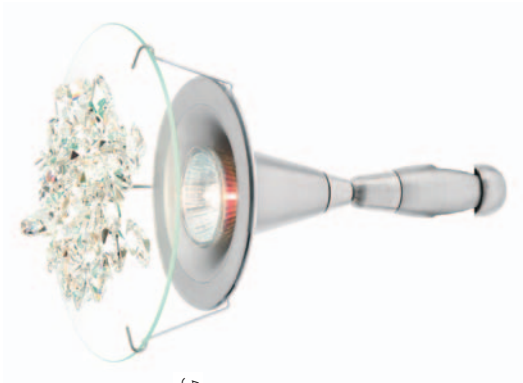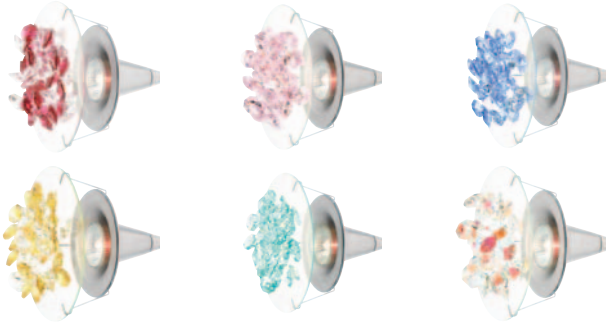
ø4.375"

5.25"

VISION RAIL

Optically pure Swarovski crystals elegantly illuminated
by halogen light. Mounts up or down.

	AB prismatic multicolor
	AM amber
	RB bordeaux
	BU blue
	CR clear
	GR green
	PR lavender

					MRL monorail
					MR2 2-circuit rail
					MPT monopoint

choose your options,
build your model #.

model	color	stem	lamp	watts	mount
HA336	CR	01	1A	35	MRL
		01" straight	1A▼ MR11	35	

LBL Lighting

FUSION™

COMPLETE LIGHTING SYSTEMS

(4) RAIL-ST-SC48" or 96"
(1) XCONNECTORSC-M

(4) RAIL-ST-SC48" or 96"
(4) ACONNECTORSC-M
(4) TCONNECTORSC-M
(1) XCONNECTORSC-M

(4) RAIL-ST-SC48" or 96"
(4) ACONNECTORSC-M

(3) RAIL-ST-SC48" or 96"
(3) ACONNECTORSC-M

(2) RAIL-CV-1 or CV-2
(2) ACONNECTORSC-M

24" diameter:
(3) RAIL-CV-SC62.5
(3) SCONNECTORSC-M

48" diameter:
(3) RAIL-CV-SC125
(3) SCONNECTORSC-M

78" diameter:
(5) RAIL-CV-SC117
(3) SCONNECTORSC-M

RAIL-ST-SC48" OR RAIL-ST-SC96"

47.25"or 94.5"

Straight Rail

RAILCV2-SC125

40.50"
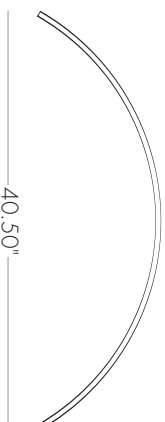
48" Diameter Circle
½ Round, Radius 24"
Order 3 pieces to create a 48" diameter circle,
or use our 48" Circle Kit.

RAILCV3-SC62.5

20"

24" Diameter Circle
½ Round, Radius 12"
Order 3 pieces to create a 24" diameter
circle,or use our 24" Circle Kit.

RAILCV1-SC117

46"
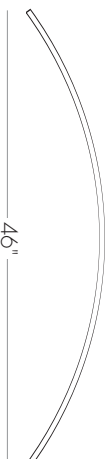
Soft Curve
78" Diameter, ½ Round, Radius 39"
Order 5 pieces to create a 78" diameter circle.

LBL Lighting

FEATURES

• Trim, low-profile design, only 1-3/16" deep.
• Flattened knockouts for cleaner appearance.
• Snap-fit channel cover attachment. No tools required for wire-way access.
• Hinged, removable channel cover allows hands-free wiring and quick installation.
• Factory-installed starters on all preheat models.
• Romex/BXR conduit connector provided with each fixture.
• Optional instant-on electronic start magnetic ballast for flicker-free lamp start.
• Low-brightness, linear prismatic diffuser provides improved visual comfort.
• 15% DR acrylic and snap-fit diffuser design for improved shatter-resistant and positive attachment.
• Optional task diffuser with clear linear prismatic bottom and opaque front for maximum illumination without direct edge glare.
• Five fixture lengths available.
• Available with factory-installed lamp, switch, cordset and convenience outlet options.

SPECIFICATIONS

BALLAST — Normal power factor reactor type ballast standard. Others available (See ordering information).

WIRING & ELECTRICAL — Fixture conforms to UL 1570 and is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

MATERIALS — Metal parts precision roll-formed from 20 gauge cold rolled steel.

FINISH — Five-stage iron-phosphate pre-treatment ensures superior paint adhesion and rust resistance. Painted parts finished with polyester powder paint.

LISTING — UL listed and labeled. Listed and labeled to comply with Canadian and Mexican Standards.

Specifications subject to change without notice.

Type	Catalog number
....	....
....	....
....	....

Undercabinet Light

UC

1" Wrap-Front Lens
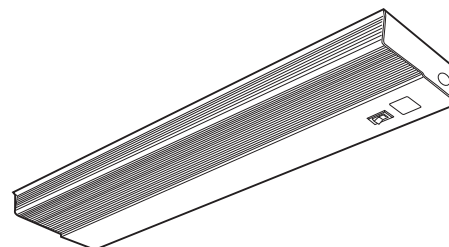
PHOTOMETRICS

Photometry derived in accordance with IESNA LM41 procedure. Vertical and horizontal illuminance is calculated with fixture mounted 15" from work surface. Full photometric data available upon request.

Initial Point Illumination on horizontal work surface. (fc)

Coordinates are on 6" centers.

UC 24
Report LTL 6349

	1	2	3	4	5	6
A	7	9	9	7	5	3
B	13	19	18	13	8	4
C	21	30	29	19	10	6
D	26	38	36	23	12	7
E	26	38	36	23	12	7
F	21	30	29	19	10	6
G	13	18	18	13	8	4
H	7	9	9	7	5	3

UC 42
Report LTL 6447

	1	2	3	4	5	6
A	22	31	31	21	13	7
B	32	46	44	30	17	9
C	37	54	52	35	19	11
D	40	58	56	37	21	12
E	40	58	56	37	21	12
F	37	54	52	35	19	11
G	32	46	44	30	17	9
H	22	31	31	21	13	7

LITHONIA LIGHTING
COMMERCIAL & INDUSTRIAL FLUORESCENT LIGHTING
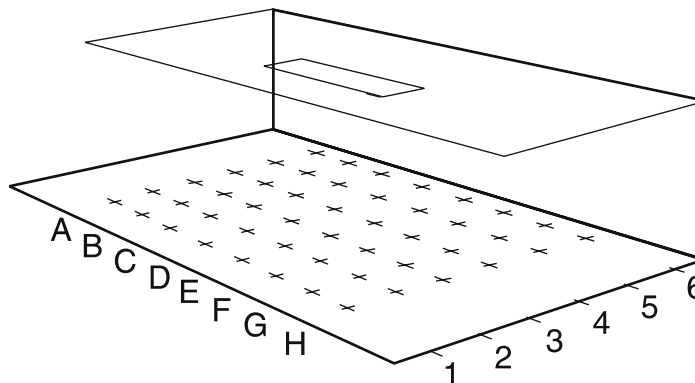
MOUNTING DATA
For unit or row mount installation, surface mounting only.
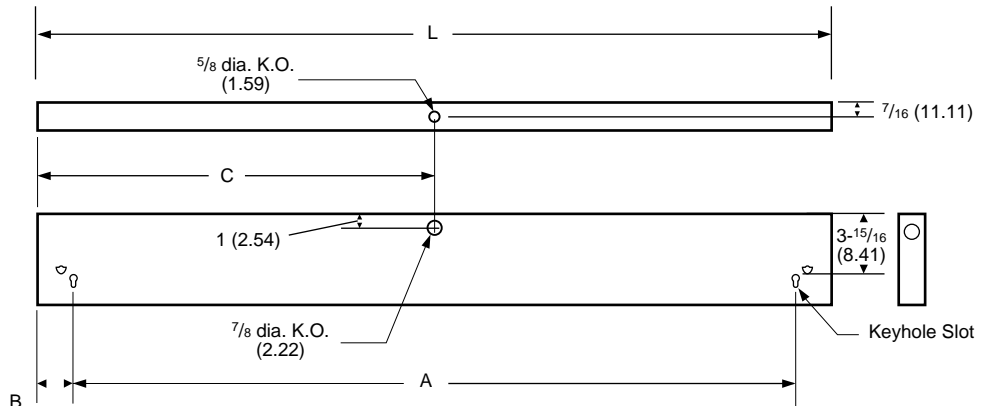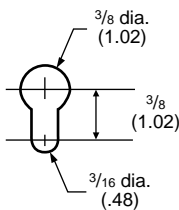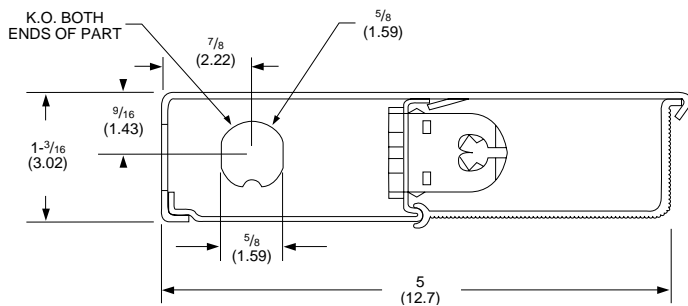
DIMENSIONS
Inches (centimeters). Subject to change without notice.

Length	A	B	C	# Keyholes
12-3/8 (31.43)	7-1/16 (17.94)	2-5/8 (6.67)	6-1/8 (15.56)	2
21-3/8 (52.23)	16-1/16 (40.80)	2-5/8 (6.67)	10-11/16 (27.15)	2
24-1/2 (62.25)	19-1/4 (48.90)	2-5/8 (6.67)	12-1/4 (31.12)	2
33-1/2 (85.10)	28-1/4 (71.76)	2-5/8 (6.67)	17 (43.18)	2
42-1/2 (107.96)	37-1/4 (94.62)	2-5/8 (6.67)	21-1/4 (53.98)	2

ORDERING INFORMATION

Example: **UC 33K OP 120**

UC

Series

UC Undercabinet light

Fixture length/ballast type

- **12** (1) 8W T5, Preheat
- **12K** (1) 8W T5, Instant-On
- **21** (1) 13W T5, Preheat
- **21K** (1) 13W T5, Instant-On
- **24** (2) 8W T5, Preheat
- **24K** (2) 8W T5, Instant-On
- **33** (1) 8W and (1) 13W T5, Preheat
- **33K** (1) 8W and 13W T5, Instant-On
- **42** (2) 13W T5, Preheat
- **42K** (2) 13W T5, Instant-On

Diffuser

- **(blank)** Standard, milk-white, DR acrylic
- **OP** Opaque-front, clear bottom DR acrylic

Voltage

120, 277

Options

- **GLR** Internal fast-blow fuse
- **GMF** Internal slow-blow fuse
- **CSW** 6-foot, 3-wire, grounded cordset, right end
- **LPWW** Warm white 3000K T5 lamp(s); factory supplied
- **VALREF213** Electronic ballast
- **PAF** White powder paint finish after fabrication
- **CO** Grounded convenience outlet. Installed, bottom right, 120V only
- **SWR** Rocker switch, installed bottom right, 120V only
- **CSA** Listed and labeled to comply with Canadian Standards
- **NOM** Listed and labeled to comply with Mexican Standards

ERCO

Fluorescent wallwasher
for fluorescent lamps

15 9/16"
395 mm

6"
152 mm

6 3/8"
162 mm

CO 46 7/16" x 5 5/16"
CO 1180 x 150 mm

55 7/8"
1419 mm

F28T5

cULus

Dry Damp Wet

←Indoor
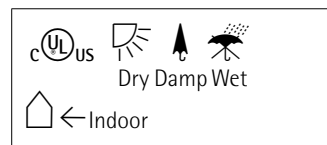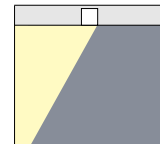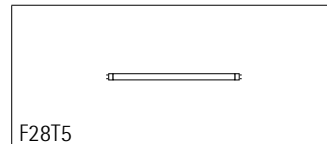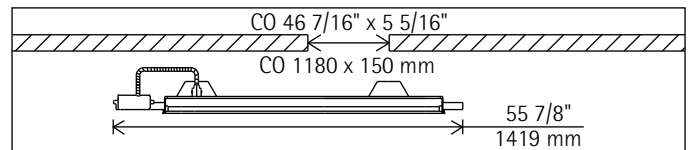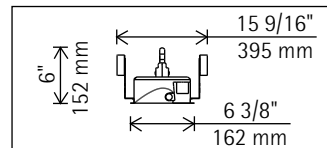
65040.023
Reflector color Silver
F28T5 28W Min. Bipin 2900lm
ECG

Product description
Housing: metal, white (RAL9002)
powder-coated.
Electronic control gear 120V/277V,
60Hz, class P inside cast housing.
Mounting plate for preinstallation
with junction box for through-
wiring, black powder-coated. Snap-
in plug for connection between
junction box and luminaire.
Wallwasher reflector: aluminum,
silver, satin matt anodized. Hinged
cover for lamp replacement.
Type Non IC luminaire.
Insulation materials must be kept
away from the luminaire by a min-
imum of 3". Suitable for damp
location. Removal of reflector al-
lows access to junction box from
below.
Max. ceiling thickness 3/4".
Weigth: 17.64 lbs / 8.00 kg

Wallwash information
F28T5 28W Min. Bipin 2900lm

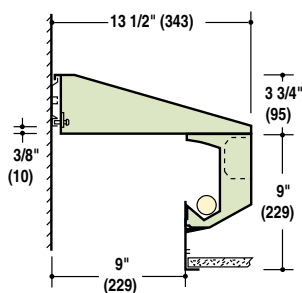| Distance from ceiling (Feet)	3.00' from wall 5.00' O.C.		3.00' from wall 6.00' O.C.		4.00' from wall 5.00' O.C.		4.00' from wall 6.00' O.C.	
	Below Fixture	Between Fixtures	Below Fixture	Between Fixtures	Below Fixture	Between Fixtures	Below Fixture	Between Fixtures
0	0	0	0	0	0	0	0	0
1	36	25	34	19	16	13	14	10
2	53	41	49	31	35	30	31	24
3	40	34	36	27	34	30	30	25
4	30	26	26	22	28	25	25	21
5	22	20	19	17	23	20	20	17
6	17	15	14	13	19	16	16	14
7	13	11	11	10	15	13	13	11
8	10	8	8	7	12	10	10	9
9	8	7	7	6	10	8	8	7
10	6	5	5	5	8	7	7	6

All vertical footcandles include the light loss factor of 0.8 with no contribution from ceiling or floor reflect-
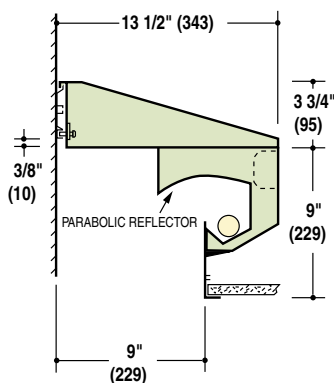ances. Computation performed with a total of five wallwashers.

1/1

LITECONTROL

Wall/Slot®-2000
Wall/Slot®-2000PR
2000 or 2000PR
Recessed Perimeter

Specifications

Wall/Slot-2000

13 1/2" (343)
3 3/4" (95)
3/8" (10)
9" (229)
9" (229)

Wall/Slot-2000PR

13 1/2" (343)
3 3/4" (95)
3/8" (10)
PARABOLIC REFLECTOR
9" (229)
9" (229)

FIXTURE SUPPORT RAIL. Extruded white aluminum, wall-mounted rail provides continuous support and true alignment of fixtures and components. Rail is designed to provide reveal and compensate for irregularities in wall construction. Galvanized spline keys are included for continuous alignment.

FIXTURE HOUSING. Die-formed and welded 20-gauge steel. Plenum cover/wall bracket is a one-piece assembly of 20-gauge steel and heavy-gauge steel brackets with leveling screws to provide adjustment. Brackets are spaced approximately every two feet for 2-, 4-, and 8-foot fixtures, and 1 1/2 feet for 3-foot and 6-foot fixtures. Plenum cover has a continuous hook-and-lock feature for quick installation.

REFLECTOR. 2000 Curved reflector is die-formed specular hammertone aluminum, precisely shaped for maximum downward light projection. Straight reflector portions are steel, finished in high-reflectance white for uniform light distribution. 2000PR Parabolic reflector (PR) is die-formed low-iridescence semi-specular aluminum, precisely shaped for maximum downward light projection. It is shielded from all viewing angles from 0° to 60° below horizontal. Straight reflector portions are steel, finished in high-reflectance white for uniform light distribution.

CEILING TRIM/LUMINANCE CONTROL DEFLECTOR. Extruded aluminum with internal aligner splines. LCD shields lamps from direct view and eliminates socket shadows on wall. Paint finish is CWM (Matte White) baked enamel.

BALLAST. Electronic, high power factor, thermally protected Class P, Sound Rated A, manufactured by a UL Listed manufacturer, as available, determined by Litecontrol. The minimum number of ballasts will be used.

CEILING TYPE. Compatible with most types of ceiling systems, including grid and plaster. Fixture system must be installed prior to installation of ceiling. Finish of wall should extend 13" above finished ceiling height. See Wall/Slot-2000 Pre-Installation Manual for specific ceiling type details.

CERTIFICATION. Fixture and electrical components shall be UL and/or CUL Listed and shall bear the I.B.E.W., A.F. of L. label. ⓤL LISTED

Note: Litecontrol reserves the right to change specifications without notice for product development and improvement.

Ordering guide

Product, Lamping, & Length

20	1	4	T8
Series	Lamp Count	Nominal Length (ft)	Lamp Type
	1 → 2		T8
	1 → 3		
	1 → 4		
	2 → 6		
	2 → 8		
	1 → 3		T5HO T5
	1 → 4		
	2 → 6		
	2 → 8		
	1 → 2		BX40
	2 → 4		
	4 → 8		
	2 → 3		BX39
	4 → 6		
	see notes		

Options

CWM	ELB –	PR –	120
Color	Ballast	Option	Volts
CWM (Matte White)	ELB ELB10 DA-ELB HEL/ELB ECO/ELB see **Ballast options**	EF F SDS PR see **Options**	120 277

2014T8-CWM-ELB-PR-120 is a typical catalog number for a one-lamp (1 lamp in cross-section), 4-foot long T8 fixture with parabolic reflector, painted Matte White, electronic ballast, 120 volts.

notes: Lamp Count = the total number of lamps in fixture
For Ordering guide information in shaded areas, choose selection by reading ACROSS the shaded areas for correct specifications.

Cross-section lamping

2000
1-T8   1-T5 or 1-T5O   BX40

2000PR
1-T8   1-T5 or 1-T5HO   BX40
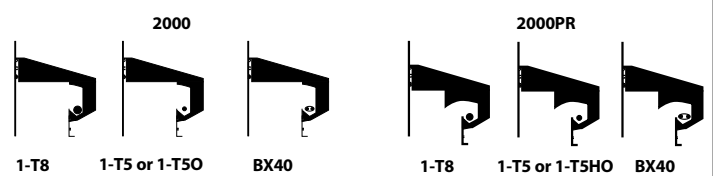
Questions to Ask
1. 120 or 277 volt?   2. Row information, including desired fixture lengths?
3. Verify ceiling type?   4. Other options?

Lighting the Wall

Small semi-recessed with hood

Quad Tube
Compact Fluorescent

Ceramic
Metal Halide

Tungsten Halogen

Style 201 / 205

Style 201 1:8 Scale (Tungsten halogen, metal halide remote)

3-1/8"
(79mm)

2"
(51mm)

6-7/8"
(175mm)

12-9/16"
(319mm)

Profile (below ceiling)

2"
(51mm)

6-7/8"
(175mm)

Style 205 1:8 Scale (Quad tube fluorescent, metal halide integral)*

3-3/4"
(95mm)

6-1/4"
(160mm)

12"
(305mm)

Ceiling Cutout

* Diagram shows Style 205 for quad tube fluorescent. Snap-in baffle provided for quad tube only. Style 205 for metal halide is provided with lens as shown in upper Style 201 diagram.

Specifications

A Extruded aluminum mounting/trim frame

B Conduit connector (Style 201)

C Aluminum back box

D Spring clips (4 incl.)

E Micro-prismatic tempered glass lens (tungsten halogen and metal halide units)

F Die-cast aluminum hood

G Supplemental wire supports (by others)

H Integral ballast with splice compartment (Style 205)

J Specular extruded aluminum reflector

K Snap-in polycarbonate cross baffle (matte gray), 15° shielding (quad tube only)

L Twist and lock lampholder (quad tube)

Finish:
Semi-gloss white hood and ceiling trim. Black back box. Painted surfaces - 6 stage pretreatment and electrostatically applied thermoset powder coat.
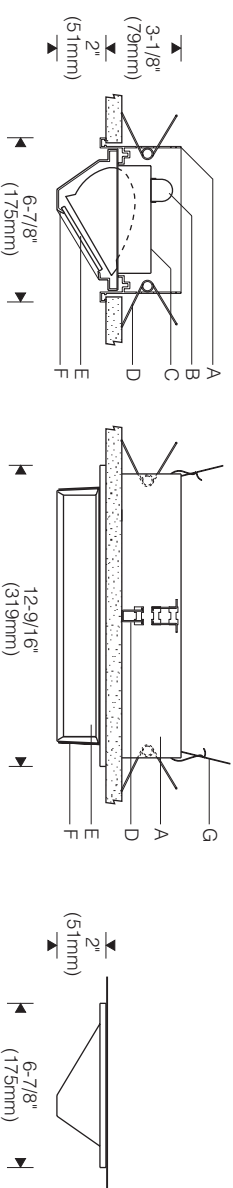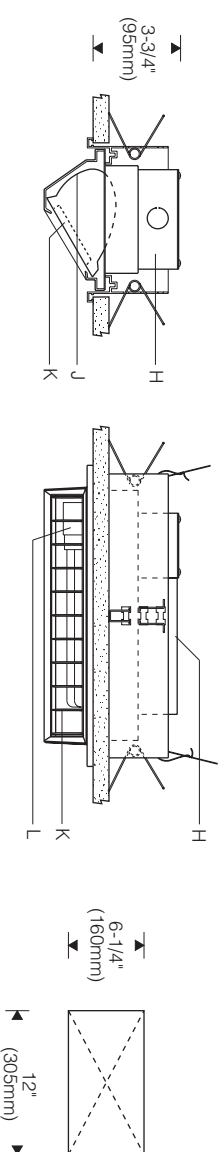
Reflector - extruded high purity aluminum with clear anodized specular finish. All luminaire hardware - stainless steel.
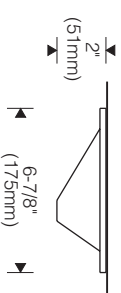
Mounting:
Mounting/trim frame installs from below finished ceiling. Retrofits into existing non-accessible ceilings.

Spring clips provided for rigid ceilings (drywall, plaster) up to 1-3/4" (44mm) thick.

Supplemental support wires, bar hangers, etc. (by others) required for accessible ceilings. Where wire suspension is prohibited, order accessory universal mounting brackets for use with 1/2" EMT, 1-1/2" lathing or C channel (by others).

Standard:
UL listed or CSA certified for damp locations. (TH and MH units with lens recommended for damp location use.)

Minimum spacings for 200W/250W Style 201, all Style 205: 2" (0.6m) on center, 1' (0.3m) fixture center to side wall, 3" (76mm) to overhead building member.

Electrical:
Use 90°C wire for supply connections.

Style 201 (halogen, metal halide remote) - 5' (1.5m) wire leads in flexible conduit exit back box for connection to accessible junction box (by others), or to remote ballast (installation prior to finished ceiling recommended).

Style 205 (quad tube, 35W/70W metal halide integral) - splice compartment with two 7/8" diameter conduit entries.

Tungsten halogen - DC bayonet or RSC lampholders in patented clamping supports for maximum heat dissipation.

Fluorescent - integral HPF thermally protected electronic ballast with end-of-life protection. Optional electronic dimming ballast dims to 5% of full light output. Compatible dimmer switch required (by others).

Metal halide - Style 201 remote: encapsulated high reactance autotransformer (HX-HPF) ballast. Optional remote electronic ballast for 150W. Style 205 integral (35W, 70W only): electronic ballast provides improved voltage regulation and color stability.

For complete ballast specifications, see Accessories Section.

Features

■ *Low profile - minimal silhouette focuses attention on the luminous wall, not the luminaire*

■ *Evenly lights entire wall - reflector aperture is shielded and asymmetry of the beam is maximized resulting in high beam efficiency and superior surface uniformity.*

■ *Shallow recessed depth - fits under ducts at core walls*

■ *Durable construction - extruded reflector and trim frame; die-cast hood, aluminum back box*

Performance

Two parabolic reflector sections drive light to the bottom of the wall. An elliptical section shields the lamp from normal viewing angles and redirects its light to a parabola. Glare is minimized and asymmetry of the beam is maximized resulting in high beam efficiency and superior surface uniformity.

For complete photometrics, visit www.elliptipar.com.

26W QUAD
150W TH
1400 Cd

70W MH
35W MH
3000 Cd

W 17.0

elliptipar

REV. 11/02

To Order

Project: _____

Type: _____

To form a Catalog Number

1	2	3	4	5	6	7	8
			T	- 0 2			

1 Source

F = Quad tube compact fluorescent
M = Metal halide
T = Tungsten halogen

2 Style

201 = Small semi-recessed with hood, **remote** (no ballast) and metal halide only.
Note: Available for tungsten halogen **integral** ballast and metal halide only.

205 = Small semi-recessed with hood, **integral** ballast 35W & 70W metal halide electronic only.
Note: Available for quad tube compact fluorescent and 35W & 70W metal halide electronic only.

3 Lamp

Lamp Code	Watt-age	Lamp Number	Volt-age(s)	Ballast**	Dis-tance+

Ceramic Metal Halide*

035G	35	CMH35/T6/G12	A,B	HX-HPF	10' (3m)
			1,2	Electr.	Integral
070G	70	CMH70/T6/G12	A,B,H	HX-HPF	20' (6m)
			1,2	Electr.	Integral
150G	150	CMH150/T6/G12	A,B,H	HX-HPF	10' (3m)
			1,2	Electr.	15' (4.5m)

Quad Tube Fluorescent

P126	26 (4-pin)	CFQ26W/G24q	T, V	Dimming	Integral
			1,2,3	Electr.	

Tungsten Halogen

0100	100	Q100DC	A		
0150	150	Q150DC	A		
0200	200	Q200T3	A		
0250	250	Q250DC	A		

* Metal halide lamps using ceramic arc tubes yield higher light output than lamps with quartz arc tubes. They offer improved lamp-to-lamp color consistency and a more stable color temperature over their life (±200K). Standard lamp color is 3000K / 80+ CRI.

**Metal halide - magnetic (HX-HPF) ballast available in Style M201 remote only. Electronic ballast for 35 and 70W available in Style M205 integral only; for 150W in Style M201 remote magnetic ballasts (and remote electronic ballast for 150W).

+Distance applies only to Style M201 remote magnetic ballasts (and remote electronic ballast for 150W).

Standard quad tube lamp color is 3000K / 80+ CRI.

For complete lamp and ballast information, see Accessories Section.

4 Mounting

T = Overlapping trim

5 Finish

02 = Semi-gloss white

6 Voltage/Ballast

Tungsten Halogen
(Style 201)
A = 120V

Metal Halide Magnetic
(Style 201)
A = 120V
B = 277V
H = 347V (Canada)+

Compact Fluorescent &
*Metal Halide Electronic**
(Style 205)
1 = 120V
2 = 277V
3 = 347V (Canada)**

Compact Fluorescent
Dimming (Style 205)
T = 120V
V = 277V

* Electronic ballast for 35 and 70W available in Style M205 integral only; for 150W in Style M201 remote only.
** Electronic 347V available for quad tube compact fluorescent only.
+Not available for 35W metal halide.

7 Option (See Accessories Section for specifications)

00 = No options
0C = Style 201 modified to comply with Chicago plenum code. Not available for Style 205 integral units.
0E = Style 205 remote emergency battery pack for quad tube fluorescent. Maximum distance from battery pack to fixture is 5' (1.5m). For use with non-dimming ballasts only.
0H = Style 201 long distance remote metal halide ballast (encapsulated HX-HPF magnetic ballast only). 35W: 15' min. up to 50' max. (4.5m - 15m), 70W: up to 50' max. (15m), 150W: up to 50' max. (15m)
0Y = Style 201 modified to comply with New York City code. (Style 205 integral complies as is without modification.)
XX = For modification not listed, include detailed description. Consult factory prior to specification.

8 Standard

0 = UL, Underwriters Laboratories
J = CSA, Canadian Standards Association

Example

M205 - 035G - T - 02 - 1 - 000

Small semi-recessed with hood for use with 35W metal halide lamp. Overlapping ceiling trim. Semi-gloss white. Integral 120V electronic ballast. UL.

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elliptipar

REV. 4/04

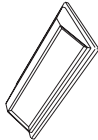
Accessories

Order separately. See Accessories Section for specifications.

AUV00030 = **Ultraviolet** (UV) filter glass lens (tungsten halogen and metal halide units only)

ASRBKT00 = Universal **mounting brackets** (set of two), accepts 1/2" EMT, 1-1/2" lathing, C channel or bar hangers (by others)

AFK000X [__] = Ballast **fuse** kit
0 = UL
J = CSA

SPECIFIER GUIDE

(UL) LISTED

PRODUCT DESCRIPTION **CURVABLE LOW VOLTAGE HALOGEN STRIPLIGHT**

PRODUCT CODE **CHANNELITE BOL 6000 QHX**

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DRAWING NO. CL 119

BOL 6000 QHX

- Ideal for wall wash or task lighting in curved spaces
- Uses high-performance ALR lamps for precise effect
- Also uses MR lamps (Refer to CL 119-A)
- Twist & lock DC bayonet base for safe lamping in lamp-down applications
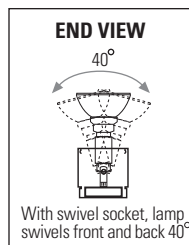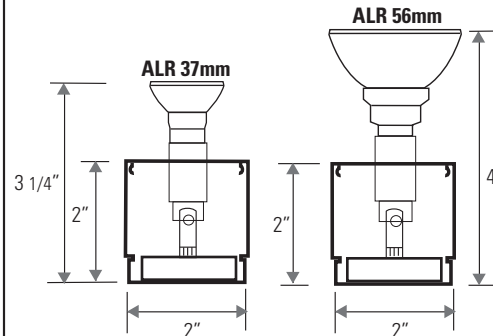- Listed for damp location
- Dimmable

DOUBLE CONTACT BAYONET BASE LAMPHOLDER (SPECIFY SWIVEL OR FIXED)

INTEGRAL TRANSFORMERS

FLEXIBLE JOINER

2"X 2" ALUMINUM HOUSING

1/2 " CONDUIT (BY CONTRACTOR)

HALOGEN MR LAMP

SPECIFY SPACING

SPECIFY TOTAL LENGTH OF RUN
SEE BELOW FOR MINIMUM INSIDE RADIUS

BOL 19 BLANK END CAP

BOL 20 KNOCK OUT END CAP
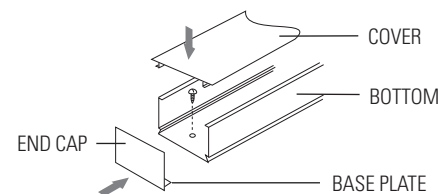
END VIEW

ALR 56mm

ALR 37mm

3 1/4"   2"

2"

4"

2"

2"

2"

QUICK REFERENCE INSTALLATION INSTRUCTIONS
1. Remove cover piece from module, by removing screws and using flathead screwdriver to pry open.
2. Screw mount bottom piece directly onto secure surface.
3. Snap cover piece into bottom piece and replace screws.
4. To continue run, attach and mount next module and make electrical connections.
5. Attach end caps at beginning and end of run, sliding base plate into bottom piece and securing with screw.
6. Connect lead wires at beginning of run to power source and ground. Do not power until installation complete.
7. Insert lamps.

COVER

BOTTOM

END CAP

BASE PLATE

RECOMMENDED LAMPS
TYPE : ALR LAMP
BASE : DC BAYONET BASE (B15d)
BRAND : PHILIPS

CODE	WATTS	BEAM ANGLE	AVG. CENTER CANDLE POWER	RATED HRS.	COLOR TEMP.
ALR-37	20 W	6°	7000 cd	4000	3000 K
		18°	1000 cd	4000	3000 K
		32°	400 cd	4000	3000 K
ALR-56	50 W	10°	13000 cd	4000	3000 K
		25°	1900 cd	4000	3000 K

LAMPS NOT INCLUDED

END VIEW

40°

With swivel socket, lamp swivels front and back 40°

S P E C I F I C A T I O N S

PRODUCT CODE	LAMPHOLDER		VOLTS	LAMP TYPE	LAMP SPACING & RADIUS		TRANSFORMER		FINISH	
BOL 6000 QHX	S	Swivel	12V	ALR-37	6" o.c.	6" on center (13" minimum inside radius)	I	Integral	NAL	Natural aluminum
	F	Fixed		ALR-56	12" o.c.	12" on center (28" minimum inside radius)	R	Remote (Consult factory)	SAT	Anodized satin
				Or specify MR lamp (Refer to CL 119-A)		Specify other				Or specify other

EXAMPLE

BOL 6000 QHX	–	S	–	12V	ALR-37	–	6" o.c.	–	I	–	NAL

FILL OUT BELOW FOR SUBMITTAL

BOL 6000 QHX	–		–	12V		–		–		–	

PROJECT NAME		SPECIFIER	
FIXTURE SCHED. TYPE		CONTRACTOR	
QUANTITY		DISTRIBUTOR	
LENGTHS		REPRESENTATIVE	

PL-T Triple 4-Pin Fluorescent Lamp

Feature	High color rendering, high efficacy lamps feature 4-pin base for use with preheat, rapid start, electronic and dimming circuits. Featuring **ALTO**® Lamp Technology
Watts	32
Bulb	PL-T
Base	GX24q-3
Product Number	046677-26833-4
Ordering Code	PL-T 32W/830/4P/ALTO
Generic Designation	CFTR32W/GX24q/830
Package Quantity	12
Description	3000K
CRI	82
Avg. Hrs. Life	10,000
Design Lumens	2040
M.O.L.	5 5/8
Lumens	2400

Images	**Literature**	**Other Information**
+ ALTO Product Logo	+ ALTO Family Brochure	• Energy Saving Product
+ Family Photo	+ MSDS S08-98001	+ Printable Page
+ Product Photo		+ View Compatible Ballasts
		+ Send this Link
		+ Bookmark this Page

Footnotes

+ This Product Contains Amalgam

+ High Color Rendering Lamp

+ Features **ALTO**® Lamp Technology

+ Rated average life under specified test conditions with Programmed Start ballasts with lamps turned off and restarted no more frequently than once every 3 operating hours. Lamp life is appreciably longer if lamps are started less frequently.

+ Approximate Initial Lumens. The lamp lumen output is based upon lamp performance after 100 hours of operating life, when the output is measured during operation on a reference ballast under standard laboratory conditions.

+ Design Lumens are the approximate lamp lumen output at 40% of the lamp's Rated Average Life. This output is

28W/830 Min Bipin T5 UNP

General

PRODUCT DATA	
Product Number	230847
Full product name	28W/830 Min Bipin T5 UNP
Ordering Code	F28T5/830
Pack type	Unpacked
Pieces per pack	1
Packs per case	40
Pack UPC	046677230845
EAN2US	-
Case Bar Code	50046677230840
Successor Product number	-
Wattage[W]	28W
Color Code	830 [CCT of 3000K]
Base	Min Bipin [Miniature Bipin]
Bulb	T5 [Diameter: .625 inch]
Packing Type	UNP [Unpacked]
System Description	High Efficiency
Base Information	Green Plate
Packing Configuration	40
Rated Avg. Life[hr]	24000
Dimmable	Yes
Color Rendering Index[Ra8]	85
Color Designation	Warm White
Color Description	830 Warm White
Color Temperature[K]	3000
Initial Lumens[Lm]	-
Overall Length C[mm]	1163.2
Diameter D[mm]	17

PHILIPS

PL-C Cluster 2-Pin Fluorescent Lamp

Feature	High color rendering, high efficacy, long life lamps with integral starter. For operation with preheat electromagnetic ballast. Featuring **ALTO**® Lamp Technology.
Watts	26
Bulb	PL-C
Base	G24d-3
Product Number	046677-38323-2
Ordering Code	PL-C26W/830/ALTO
Generic Designation	CFQ26W/G24d/830
Package Quantity	10
Description	3000K
CRI	82
Avg. Hrs. Life	10,000
Design Lumens	1545
M.O.L.	6 13/16
Lumens	1800

Images
+ ALTO Product Logo
+ Family Photo
+ Product Photo

Literature
+ ALTO Family Brochure
+ MSDS S08-01001

Other Information
• Energy Saving Product
+ Printable Page
+ View Compatible Ballasts
+ Send this Link
+ Bookmark this Page

Footnotes
+ High Color Rendering Lamp

+ Features **ALTO**® Lamp Technology
+ Design Lumens are the approximate lamp lumen output at 40% of the

PHILIPS

24W/830 Min Bipin T5 HO UNP

General

PRODUCT DATA	
Product Number	290197
Full product name	24W/830 Min Bipin T5 HO UNP
Ordering Code	F24T5/830/HO
Pack type	Unpacked
Pieces per pack	1
Packs per case	40
Pack UPC	046677290191
EAN2US	-
Case Bar Code	50046677290196
Successor Product number	-
Wattage[W]	24W
Color Code	830 [CCT of 3000K]
Base	Min Bipin [Miniature Bipin]
Bulb	T5 [Diameter: .625 inch]
Packing Type	UNP [Unpacked]
System Description	High Output
Base Information	Green Plate
Packing Configuration	40
Rated Avg. Life[hr]	24000
Dimmable	Yes
Color Rendering Index[Ra8]	85
Color Designation	Warm White
Color Description	830 Warm White
Color Temperature[K]	3000
Initial Lumens[Lm]	-
Overall Length C[mm]	563.2
Diameter D[mm]	17

PHILIPS

Aluline Pro 20W 12V R37 18D FR 1CT

General

PRODUCT DATA	
Product number	340026
Full product name	Aluline Pro 20W 12V R37 18D FR 1CT
OrdCodUS	-
Pack type	1 Lamp in a Folding Carton
Pieces per pack	1
Packs per case	50
EAN1US	-
EAN2US	-
EAN3US	-
Successor Product number	-
Lamp Wattage Rated[W]	20W
Voltage[V]	12V
Bulb	R37 [R 37mm]
Beam Angle[D]	18D
Bulb Finish	FR [Frosted]
Packing Type	1CT [1 Lamp in a Folding Carton]
Packing Configuration	10X5F
ANSI Code Halogen	GBE
Cap-Base	BA15d
Cap-Base Information	na[-]
Operating Position	any[Any or Universal (U)]
Life to 50% failures[hr]	2000
Dimmable	Yes
Luminous Intensity[cd]	-
Colour Rendering Index[Ra8]	100
Colour Temperature[K]	3000
Overall Length C[mm]	41
Diameter D[mm]	38

PHILIPS

14W/830 Min Bipin T5 UNP

General

PRODUCT DATA	
Product Number	230771
Full product name	14W/830 Min Bipin T5 UNP
Ordering Code	F14T5/830
Pack type	Unpacked
Pieces per pack	1
Packs per case	40
Pack UPC	046677230777
EAN2US	-
Case Bar Code	50046677230772
Successor Product number	-
Wattage[W]	14W
Color Code	830 [CCT of 3000K]
Base	Min Bipin [Miniature Bipin]
Bulb	T5 [Diameter: .625 inch]
Packing Type	UNP [Unpacked]
System Description	High Efficiency
Base Information	Green Plate
Packing Configuration	40
Rated Avg. Life[hr]	24000
Dimmable	Yes
Color Rendering Index[Ra8]	85
Color Designation	Warm White
Color Description	830 Warm White
Color Temperature[K]	3000
Initial Lumens[Lm]	-
Overall Length C[mm]	563.2
Diameter D[mm]	17

T5 Preheat Item Detail

Basic   **LSB**

Subcategory	T5 Preheat
Product Code	10089
Description	F13T5/WW
Watts	13
Lumens (Initial)	870
Lumens (Mean)	720
Average Rated Life	5000
Color Temperature (K)	3000
Color Rendering Index (Ra) CRI	82
Bulb Type	T5
Base Type	Miniature BiPin (G5)
Nominal Length (In.)	21
Nominal Length (mm)	534
Sales Unit UPC	043168100892
Case UPC	043168100892
SCC	10043168100899
Case Quantity	24

LSB Data Available

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Return to product list

PHILIPS

Aluline Pro 20W 12V R37 6D CL 1CT

General

PRODUCT DATA	
Product number	328401
Full product name	Aluline Pro 20W 12V R37 6D CL 1CT
OrdCodUS	-
Pack type	1 Lamp in a Folding Carton
Pieces per pack	1
Packs per case	50
EAN1US	-
EAN2US	-
EAN3US	-
Successor Product number	-
Lamp Wattage Rated[W]	20W
Voltage[V]	12V
Bulb	R37 [R 37mm]
Beam Angle[D]	6D
Bulb Finish	CL [Clear]
Packing Type	1CT [1 Lamp in a Folding Carton]
Packing Configuration	10X5F
ANSI Code Halogen	GBD
Cap-Base	BA15d
Cap-Base Information	19
Operating Position	any[Any or Universal (U)]
Life to 50% failures[hr]	2000
Dimmable	Yes
Luminous Intensity[cd]	-
Colour Rendering Index[Ra8]	100
Colour Temperature[K]	3000
Overall Length C[mm]	41
Diameter D[mm]	38

PHILIPS

MasterColor CDM-T 70W/830 G12 T6 1CT

PRODUCT DATA

Product Number	223370
Full product name	MasterColor CDM-T 70W/830 G12 T6 1CT
Ordering Code	CDM70/T6/830
Pack type	1 Lamp in a Folding Carton
Pieces per pack	1
Packs per case	12
Pack UPC	046677223373
EAN2US	-
Case Bar Code	50046677223378
Successor Product number	-
Wattage[W]	70W
Color Code	830 [CCT of 3000K]
Base	G12
Bulb	T6 [Diameter: .75 inch]
Packing Type	1CT [1 Lamp in a Folding Carton]
Packing Configuration	12
Bulb Finish	Clear
Operating Position	Universal[Universal]
Rated Avg. Life[hr]	12000
System Power EL[W]	83
Lamp Voltage[V]	88
Dimmable	No
Color Rendering Index[Ra8]	81
Color Designation	Warm White
Color Description	830 Warm White
Color Temperature[K]	3000
Initial Lumens[Lm]	6600
Overall Length C[mm]	103

MasterColor CDM 70W/830 Med ED17 CL ALTO

PRODUCT DATA

Product Number	208843
Full product name	MasterColor CDM 70W/830 Med ED17 CL ALTO
Ordering Code	MHC70/U/M/3K ALTO
Pack type	1 Sleeve Open End
Pieces per pack	1
Packs per case	12
Pack UPC	046677208844
EAN2US	-
Case Bar Code	50046677208849
Successor Product number	-
Wattage[W]	70W
Color Code	830 [CCT of 3000K]
Base	Med [Medium]
Bulb	ED17 [Diameter: 2.125 inch]
Bulb Finish	CL [Clear]
Feature	ALTO [ALTO®]
Base Information	Brass[Brass Base]
Bulb Material	Hard Glass
Operating Position	Universal[Universal]
Packing Type	1SL[1 Sleeve Open End]
Packing Configuration	12
Rated Avg. Life[hr]	16000
Mercury Weight[mg]	6.95
ANSI Code HID	M143/M98/E
Lamp Voltage[V]	100
Color Rendering Index[Ra8]	85
Color Designation	Warm White
Color Temperature[K]	3000

Ceramalux Comfort 70W Med BD17 CL

PRODUCT DATA

Product Number	306175
Full product name	Ceramalux Comfort 70W Med BD17 CL
Ordering Code	C70S62/C/M
Pack type	1 Sleeve Open End
Pieces per pack	1
Packs per case	12
Pack UPC	046677306175
EAN2US	-
Case Bar Code	50046677306170
Successor Product number	-
Wattage[W]	70W
Base	Med [Medium]
Bulb	BD17 [Diameter: 2.125 inch]
Bulb Finish	CL [Clear]
Base Information	Brass[Brass Base]
Bulb Material	Hard Glass
Operating Position	Universal[Universal]
Packing Type	1SL[1 Sleeve Open End]
Packing Configuration	12
Rated Avg. Life[hr]	8600
Mercury Weight[mg]	32.7
ANSI Code HID	S62
Lamp Voltage[V]	52
Color Rendering Index[Ra8]	60
Color Designation	Comfort
Color Temperature[K]	2200
Initial Lumens[Lm]	4500
Design Mean Lumens[Lm]	3960

T5 Starcoat High Output Item Detail

Basic   **LSB**

Subcategory	T5 Starcoat High Output
Product Code	90232
Description	F54W/T5/830
Watts	54
Lumens (Initial)	5000
Lumens (Mean)	4700
Average Rated Life	20000
Color Temperature (K)	3000
Color Rendering Index (Ra) CRI	85
Bulb Type	T5
Base Type	Miniature BiPin (G5)
Nominal Length (In.)	45.2
Nominal Length (mm)	1150
Sales Unit UPC	043168902328
Case UPC	043168902328
Case Quantity	40
Additional Information	S/P Ratio: 1.3

LSB Data Available

☑ Set the current view to the default view

Return to product list

Standard MR11 Item Detail

Subcategory	Standard MR11
Product Code	41484
Description	Q35MR11/CG30 24
Volts	24
Watts	35
Average Life in Hours	2000
CBCP	1300
Color Temperature (K)	2950
Bulb Type	MR11
Base Type	2-Pin G4
Max Overall Length (In.)	1.375
Max Overall Length (mm)	35
Filament Type	C-6
Sales Unit UPC	043168414845
Case UPC	043168414845
Case Quantity	50
Additional Information	Floodlight
Footnotes	**WARNING** - Keep combustible materials away from lamp - Use in fixture rated for this product - Use in enclosed fixture rated for this product - Do not use lamp if outer glass is scratched or broken **CAUTION** - Allow lamp to cool before handling - Do not use lamp if outer glass is scratched or broken

☑ Set the current view to the default view

Return to product list

Standard MR16 Item Detail

Subcategory	Standard MR16
Product Code	25481
Description	Q20MR16/SP
Volts	12
Watts	20
Average Life in Hours	2000
CBCP	3500
Color Temperature (K)	2900
Bulb Type	MR16
Base Type	2-Pin GX5.3
Max Overall Length (In.)	1.875
Max Overall Length (mm)	48
Filament Type	C-6
Sales Unit UPC	043168254816
Case UPC	043168254816
Case Quantity	20
Additional Information	Spot, Replacement for ESX
Footnotes	**WARNING** - Keep combustible materials away from lamp - Use in enclosed fixture rated for this product - Use eye protection when handling lamp - Use in enclosed fixture rated for this product - Do not touch glass with bare hands - Do not use lamp if outer glass is scratched or broken **CAUTION** - Allow lamp to cool before handling -Turn power off before installing lamp - Dispose of lamp in a closed container - Do not use lamp if outer glass is scratched or broken

☑ Set the current view to the default view

Return to product list

PL-T Triple 4-Pin Fluorescent Lamp

Feature	High color rendering, high efficacy lamps feature 4-pin base for use with preheat, rapid start, electronic and dimming circuits. Featuring **ALTO**® Lamp Technology
Watts	42
Bulb	PL-T
Base	GX24q-4
Product Number	046677-26875-5
Ordering Code	PL-T 42W/830/4P/ALTO
Generic Designation	CFTR42W/GX24q/830
Package Quantity	12
Description	3000K
CRI	82
Avg. Hrs. Life	10,000
Design Lumens	2720
M.O.L.	6 3/8
Lumens	3200

Images	Literature	Other Information
+ ALTO Product Logo	+ ALTO Family Brochure	• Energy Saving Product
+ Family Photo	+ MSDS S08-98001	+ Printable Page
+ Product Photo		+ View Compatible Ballasts
		+ Send this Link
		+ Bookmark this Page

Footnotes

+ Design Lumens are the approximate lamp lumen output at 40% of the lamp's Rated Average Life. This output is based upon measurements obtained during lamp operation on a reference ballast under standard laboratory conditions.

+ Approximate Initial Lumens. The lamp lumen output is based upon lamp performance after 100 hours of operating life, when the output is measured during operation on a reference ballast under standard laboratory conditions.

+ Rated average life under specified test conditions with Programmed Start ballasts with lamps turned off and restarted no more frequently than once every 3 operating hours. Lamp life is appreciably longer if lamps are started less frequently.

+ Features **ALTO**® Lamp Technology

+ High Color Rendering Lamp

PHILIPS

PL-L 40W/830 2G11/4P 1CT

| Save PDF | Open PDF

General

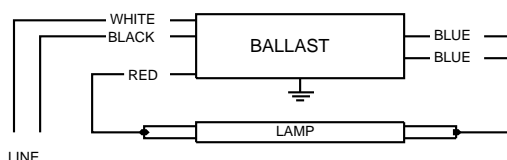| PRODUCT DATA	
Product Number	300426
Full product name	PL-L 40W/830 2G11/4P 1CT
Ordering Code	PL-L 40W/830/4P RS/IS
Pack type	1 Lamp in a Folding Carton
Pieces per pack	1
Packs per case	25
Pack UPC	046677111786
EAN2US	-
Case Bar Code	50046677111781
Successor Product number	-
Wattage[W]	40W
Color Code	830 [CCT of 3000K]
Base	2G11 [2G11]
Base Information	4P
Execution	/4P [4 Pins]
Packing Type	1CT [1 Lamp in a Folding Carton]
System Description	Rapid Start
Packing Configuration	25
Rated Avg. Life[hr]	20000
Avg. Hrs. Life[hr]	20000
Lamp Voltage[V]	126
Dimmable	Yes
Color Rendering Index[Ra8]	82
Color Designation	Warm White
Color Description	830 Warm White
Color Temperature[K]	3000
Initial Lumens[Lm]	3500
Overall Length C[mm]	542
Diameter D[mm]	38
Diameter D1[mm]	18

ROP-2P32-SC

Brand Name	OPTANIUM
Ballast Type	Electronic
Starting Method	Instant Start
Lamp Connection	Parallel
Input Voltage	120
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

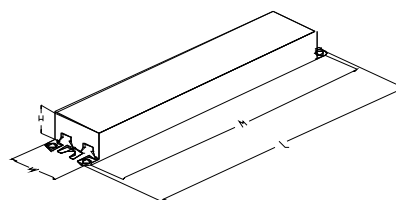| Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	0/-18	0.26	31	0.90	10	0.97	1.7	2.90
F25T8	1	25	0/-18	0.23	27	1.02	15	0.97	1.7	3.78
F25T8	2	25	0/-18	0.37	43	0.88	10	0.99	1.7	2.05
* F32T8	1	32	0/-18	0.30	35	1.01	10	0.98	1.7	2.89
F32T8	2	32	0/-18	0.47	55	0.88	10	0.99	1.7	1.60
F32T8/ES (28W)	1	28	0/-18	0.25	30	1.02	15	0.95	1.7	3.40
F32T8/ES (28W)	2	28	0/-18	0.41	48	0.87	10	0.98	1.7	1.81
F32T8/ES (30W)	1	30	60/16	0.28	33	1.01	10	0.97	1.7	3.06
F32T8/ES (30W)	2	30	60/16	0.44	52	0.88	10	0.99	1.7	1.69
F40T8	1	40	32/00	0.35	41	1.01	10	0.99	1.7	2.46
F40T8	2	40	32/00	0.56	67	0.88	10	0.99	1.7	1.31

Wiring Diagram

Diag. 68

Insulate unused blue lead for 1000V

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	25L	63.5
White	25L	63.5
Blue	31R	78.7
Red	37L	94
Yellow	0	0
Gray	0	0
Violet	0	0

	in.	cm.
Yellow/Blue	0	0
Blue/White	0	0
Brown	0	0
Orange	0	0
Orange/Black	0	0
Black/White	0	0
Red/White	0	0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 07/20/2004

![ADVANCE logo]

RMB-2P13-S3-H

Brand Name	MATCHBOX
Ballast Type	Electronic
Starting Method	Instant Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
CFQ13W/G24Q	2	13	0/-18	0.23	27	0.90	10	0.98	1.7	3.33
CFQ18W/G24Q	1	18	0/-18	0.13	15	0.80	15	0.96	1.7	5.33
CFT7W/2G7	2	7	0/-18	0.14	16	1.00	15	0.95	1.7	6.25
CFT9W/2G7	2	9	0/-18	0.17	20	1.05	10	0.98	1.7	5.25
CFTR13W/GX24Q	2	13	0/-18	0.23	27	0.90	10	0.98	1.7	3.33
CFTR18W/GX24Q	1	18	0/-18	0.13	15	0.80	15	0.96	1.7	5.33
* F13T5	2	13	0/-18	0.24	28	0.95	10	0.97	1.7	3.39
F14T5	2	14	0/-18	0.24	28	0.90	10	0.97	1.7	3.21
F8T5	2	8	0/-18	0.16	19	1.25	10	0.98	1.7	6.58
F8T5 & F13T5	2	813	0/-18	0.20	23	1.10	10	0.97	1.7	4.78

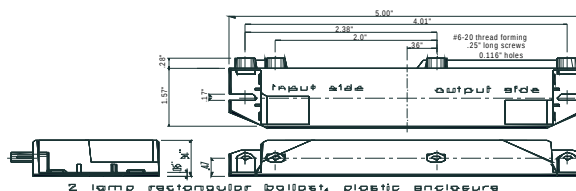## Wiring Diagram

BLK
WHT
GRN
YELLOW
BALLAST
RED
BLUE
LAMP
LAMP

Green terminal must be grounded

The wiring diagram that appears above is
for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	0	0
White	0	0
Blue	0	0
Red	0	0
Yellow	0	0
Gray	0	0
Violet	0	0

	in.	cm.
Yellow/Blue	0	0
Blue/White	0	0
Brown	0	0
Orange	0	0
Orange/Black	0	0
Black/White	0	0
Red/White	0	0

Enclosure

2 lamp rectangular ballast, plastic enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
5.0 "	1.85 "	0.94 "	4.6 "
5	1 17/20	0 47/50	4 3/5
12.7 cm	4.7 cm	2.4 cm	11.7 cm

Revised 01/26/2004

![CSA logo] ![UL logo]

RCF-2S26-H1-LD-QS

Brand Name	SMARTMATE
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
CFQ26W/G24Q	1	26	0/-18	0.23	27	1.00	10	0.98	1.5	3.70
CFQ26W/G24Q	2	26	0/-18	0.43	51	1.00	10	0.99	1.5	1.96
CFTR26W/GX24Q	1	26	0/-18	0.24	29	1.10	10	0.98	1.5	3.79
CFTR26W/GX24Q	2	26	0/-18	0.45	54	1.00	10	0.98	1.5	1.85
* CFTR32W/GX24Q	1	32	0/-18	0.31	36	0.98	10	0.98	1.5	2.72
CFTR42W/GX24Q	1	42	0/-18	0.38	46	0.98	10	0.98	1.5	2.13
FC12T5	1	40	0/-18	0.32	38	0.95	10	0.98	1.5	2.50
FC9T5	1	22	0/-18	0.21	25	1.00	10	0.98	1.5	4.00

Wiring Diagram
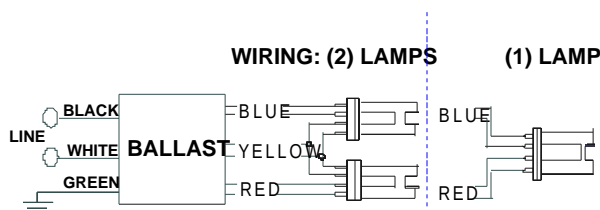
WIRING: (2) LAMPS   (1) LAMP

LINE — BLACK
WHITE — BALLAST
GREEN

BLUE
YELLOW
RED

BLUE
RED

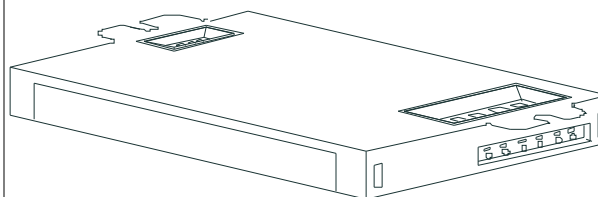**Green Terminal must be Grounded**

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
4.98 "	2.4 "	1.0 "	4.6 "
4 49/50	2 2/5	1	4 3/5
12.6 cm	6.1 cm	2.5 cm	11.7 cm

Revised 09/02/2004

High Pressure Sodium Lamp Ballast	**Catalog Number 71A7927** **For 70W NONE** **60 Hz R-NPF** **Status: Active**		

DIMENSIONS AND DATA

2 5/8 X 2 3/16 CORE

4.00"
3.50"
0.75"
A
B MAX.
0.30" WIDE 2 SLOTS

2.65"
2.20"
.20"
4 HOLES CLEARED FOR #6 THRU-BOLTS
2.20" 1.75"
.062"
.20"

INPUT VOLTS		240				
CIRCUIT TYPE	R-NPF					
POWER FACTOR (min)	40%					
REGULATION						
Line Volts	±5%					
Lamp Watts	WITHIN TRAPEZOID					
LINE CURRENT (Amps)						
Operating..		0.98				
Open Circuit...		0.00				
Starting..		1.15				
UL TEMPERATURE RATINGS						
Insulation Class	H(180°C)					
Coil Temperature Code	1029	A				
MIN. AMBIENT STARTING TEMP.	-20°F or -30°C					
NOM. OPEN CIRCUIT VOLTAGE	240					
INPUT VOLTAGE AT LAMP DROPOUT..........................		190				
INPUT WATTS	85					
RECOMMENDED FUSE (Amps)....................................		3				
CORE and COIL						
Dimension (A)	1.50					
Dimension (B)	2.80					
Weight (lbs.)	2.5					
Lead Lengths	.1"					
CAPACITOR REQUIREMENT						
Microfarads						
Volts (min.)						
Fault Current Withstand (amps)						
60 Hz TEST PROCEDURES (Refer to Advance Test Procedure for HID Ballasts - Form 1270)						
High Potential Test (Volts)						
1 minute						
2 seconds	1500					
Open Circuit Voltage Test (Volts)	2500					
Short-Circuit Current Test (Amps)	216-264					
Secondary Current						
Input Current..............................1.05-1.35		0.95 1.45	-	-	-	-

Capacitor:

The capacitor is included as part of the potted assembly.

Wiring Diagram:

LINE V
LAMP
X3
X1
IGNITOR
(OPTIONAL) CAP
X2
LAMP
COM
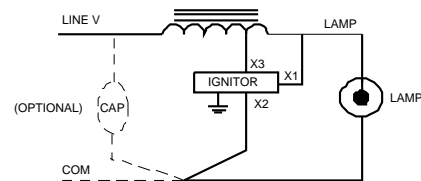
Fig. G

Ignitor: LI501-H4

Ballast to Lamp Distance (BTL) = 2 feet
Temp Rating: 105°C

Ordering Information	
Order Suffix	**Description**

**Data is based upon tests performed by Advance Transformer in a controlled environment and representive of relative performance.
Actual performance can vary depending on operating conditions. Specifications are subject to change without notice.**

Eco-10 Overview

Eco-10 lighting management electronic dimming ballasts are designed to maximize the benefits of a lighting management system. Eco-10 offers 100% to 10% dimming, and is ideal for use in any space where saving energy is the primary goal of the design.

Features

- Continuous, flicker-free dimming from 100% to 10%
- Standard 3-wire line-voltage phase-control technology for consistent fixture-to-fixture dimming performance
- Models available for T5 and T5-HO linear, T8 linear and U-bent, and T5 twin-tube lamps
- Programmed rapid start design preheats lamp cathodes before applying full arc voltage
- Lamps turn on to any dimmed level without flashing to full brightness
- Low harmonic distortion throughout the entire dimming range maintains power quality
- Frequency of operation ensures that ballast does not interfere with infrared devices operating between 38 and 42 kHz
- Inrush current limiting circuitry eliminates circuit breaker tripping, switch arcing, and relay failure
- End-of-lamp-life protection circuitry (for T5 and T5-HO linear models) ensures safe operation throughout entire lamp life cycle
- For linear lamps, ballasts maintain consistent light output for different lamp lengths, ensuring uniformity
- Ultra-quiet operation
- Protected from miswires of any input power to control lead
- 100% compatible with all Lutron 3-wire fluorescent controls
- 100% performance tested at factory
- Designed and assembled in the USA
- 5-year limited warranty with Lutron field service commissioning (3-year standard warranty) from date of purchase

Eco-10, case type C
1.18"w (30mm) x 1.00"h (25mm) x 18.00"l (457mm)

Eco-10, case type D
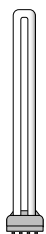1.58"w (40mm) x 1.00"h (25mm) x 9.50"l (241mm)

Eco-10, case type F
2.38"w (60mm) x 1.50"h (38mm) x 9.50"l (241mm)

Job Name:	Model Numbers:
Job Number:	

Eco-10 Ballast Models

Lamp Type	Lamp Watts (length)	Lamps per ballast	Case Type	120 VOLTS		277 VOLTS	
				Ballast Current (amps)	Eco-10 Model Number	Ballast Current (amps)	Eco-10 Model Number
T5 linear 5/8" diameter	14W (22")	1	C	.17	E 3 T514 C 120 1	.08	E 3 T514 C 277 1
		2	C	.32	E 3 T514 C 120 2	.14	E 3 T514 C 277 2
	21W (34")	1	C	.25	E 3 T521 C 120 1	.11	E 3 T521 C 277 1
		2	C	.43	E 3 T521 C 120 2	.19	E 3 T521 C 277 2
	28W (45.3")	1	C	.30	ECO-T528-120-1	.14	ECO-T528-277-1
		2	C	.55	ECO-T528-120-2	.25	ECO-T528-277-2
T5-HO linear high output 5/8" diameter	24W (21.5")	1	C	.26	ECO-T524-120-1	.13	ECO-T524-277-1
		2	C	.45	ECO-T524-120-2	.20	ECO-T524-277-2
	39W (33.4")	1	C	.38	ECO-T5H39-120-1	.17	ECO-T5H39-277-1
		2	C	.76	ECO-T5H39-120-2	.31	ECO-T5H39-277-2
	54W (45.3")	1	C	.58	ECO-T554-120-1	.25	ECO-T554-277-1
		2	C	1.1	ECO-T554-120-2	.45	ECO-T554-277-2
T5 Twin-Tube 5/8" diameter	36/39W (16")	1	F	.33	ECO-T539-120-1	.14	ECO-T539-277-1
		2	F	.58	ECO-T539-120-2	.25	ECO-T539-277-2
		3	F	.85	ECO-T539-120-3	.35	ECO-T539-277-3
	40W (22")	1	F	.33	ECO-T540-120-1	.14	ECO-T540-277-1
		2	F	.61	ECO-T540-120-2	.25	ECO-T540-277-2
		3	F	.88	ECO-T540-120-3	.38	ECO-T540-277-3
	50W (22")	1	F	.38	ECO-T550-120-1	.17	ECO-T550-277-1
		2	F	.69	ECO-T550-120-2	.32	ECO-T550-277-2

Job Name:	Model Numbers:
Job Number:	

Compact SE Overview

For designs requiring the energy savings and aesthetic appeal of dimmed T4 compact fluorescent or T5 twin-tube lamps, Compact SE dimming ballasts are your solution. The Compact SE product family includes ballasts for nearly every type of dimmable compact fluorescent lamp.

Compact SE, case type A
3.00"w (76mm) x 1.00"h (25mm) x 4.90"l (124mm)

Features

- Continuous, flicker-free dimming from 100% to 5%
- Standard 3-wire line-voltage phase-control technology for consistent fixture-to-fixture dimming performance
- Models for 4-pin T4 compact lamps and T5 twin-tube lamps
- Programmed rapid start design will preheat lamp cathodes before applying full arc voltage
- Lamps turn on to any dimmed level without flashing to full brightness
- Low harmonic distortion throughout the entire dimming range maintains power quality
- Frequency of operation ensures that ballast does not interfere with infrared devices operating between 38 and 42 kHz
- Inrush current limiting circuitry eliminate circuit breaker tripping, switch arcing, and relay failure
- End-of-lamp-life protection circuitry ensures safe operation throughout entire lamp life cycle
- Ultra quiet operation
- Protected from miswires of any input power to control lead, or lamp leads to each other or ground
- 100% compatible with all Lutron 3-wire fluorescent controls
- 100% performance tested at factory
- Designed and assembled in the USA
- 5-year limited warranty with Lutron field service commissioning (3-year standard warranty) from date of purchase
- Ballasts that dim T4 compact fluorescent lamps are intended for factory installation by OEM fixture manufacturer.

Compact SE, case type B
3.00"w (76mm) x 1.00"h (25mm) x 6.75"l (171mm)

Compact SE, case type F
2.38"w (60mm) x 1.50"h (38mm) x 9.50"l (241mm)
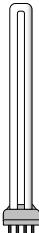
Job Name:	Model Numbers:
Job Number:	

Compact SE Ballast Models

Lamp Type	Lamp Watts	Lamps per ballast	Case Type	120 VOLTS		277 VOLTS	
				Ballast Current (amps)	Compact SE Model Number [1]	Ballast Current (amps)	Compact SE Model Number [1]
T4 4-Pin Quad-Tube 1/2" diameter	18W	1 2	A B	.20 .42	FDB-T418-120-1-S FDB-T418-120-2-S	.08 .17	FDB-T418-277-1-S FDB-T418-277-2-S
	26W	1 2	A B	.26 .50	FDB-T426-120-1-S FDB-T426-120-2-S	.12 .21	FDB-T426-277-1-S FDB-T426-277-2-S
T4 4-Pin Triple-Tube 1/2" diameter	18W	1 2	A B	.20 .42	FDB-T418-120-1-S FDB-T418-120-2-S	.08 .17	FDB-T418-277-1-S FDB-T418-277-2-S
	26W	1 2	A B	.26 .50	FDB-T426-120-1-S FDB-T426-120-2-S	.12 .21	FDB-T426-277-1-S FDB-T426-277-2-S
	32W	1 2	A B	.31 .59	FDB-T432-120-1-S FDB-T432-120-2-S	.13 .24	FDB-T432-277-1-S FDB-T432-277-2-S
	42W	1 2	B B	.36 .67	FDB-T442-120-1-S FDB-T442-120-2-S	.16 .29	FDB-T442-277-1-S FDB-T442-277-2-S
T5 Twin-Tube 5/8" diameter	36/39W (16")	1 2 3	F F F	.33 .58 .85	FDB-1643-120-1 FDB-1643-120-2 FDB-1643-120-3	.14 .25 .35	FDB-1643-277-1 FDB-1643-277-2 FDB-1643-277-3
	40W (22")	1 2 3	F F F	.33 .61 .88	FDB-2227-120-1 FDB-2227-120-2 FDB-2227-120-3	.14 .25 .38	FDB-2227-277-1 FDB-2227-277-2 FDB-2227-277-3
	50W (22")	1 2	F F	.38 .69	FDB-2243-120-1 FDB-2243-120-2	.17 .32	FDB-2243-277-1 FDB-2243-277-2

[1] Mounting studs standard for T4 ballasts. Delete suffix -S in the model number if mounting studs not needed.

Job Name:	Model Numbers:
Job Number:	

ICN-2S24@120V

Brand Name	CENTIUM T5
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
* F24T5/HO	1	0	0/-18	0.23	27	1.02	10	0.98	1.7	3.78
F24T5/HO	2	0	0/-18	0.44	52	1.00	10	0.98	1.7	1.92
F39T5/HO	1	39	0/-18	0.34	40	0.90	10	0.98	1.7	2.25
FC12T5	1	40	0/-18	0.34	40	0.84	10	0.98	1.7	2.10
FC9T5	1	22	0/-18	0.23	27	1.02	10	0.98	1.7	3.78
FC9T5	2	22	0/-18	0.44	52	1.00	10	0.98	1.7	1.92
FT24W/2G11	1	24	0/-18	0.23	27	1.02	10	0.98	1.7	3.78
FT24W/2G11	2	24	0/-18	0.44	52	1.00	10	0.98	1.7	1.92
FT36W/2G11	1	36	0/-18	0.29	34	0.90	10	0.98	1.7	2.65
FT40W/2G11/RS	1	40	0/-18	0.40	47	1.00	10	0.98	1.7	2.13

Wiring Diagram

GREEN
BLACK
WHITE

BALLAST
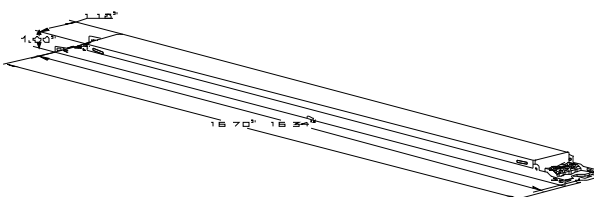
RED
RED
YELLOW
YELLOW
BLUE
BLUE
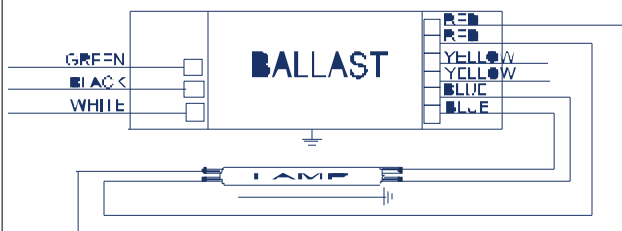
LAMP

For 1 lamp operation, do not use yellow leads

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	0	0
White	0	0
Blue	0	0
Red	0	0
Yellow	0	0
Gray	0	0
Violet	0	0

	in.	cm.
Yellow/Blue	0	0
Blue/White	0	0
Brown	0	0
Orange	0	0
Orange/Black	0	0
Black/White	0	0
Red/White	0	0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
16.70 "	1.18 "	1.00 "	16.34 "
16 7/10	1 9/50	1	16 17/50
42.4 cm	3 cm	2.5 cm	41.5 cm

Revised 09/01/2004
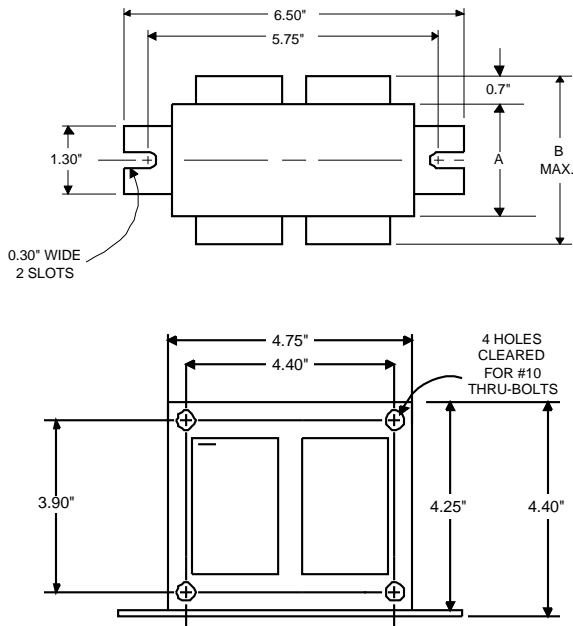
ADVANCE™

Metal Halide Lamp Ballast	Catalog Number 71A6092LL For 400W M135/M155 60 Hz CWA Status: Active

DIMENSIONS AND DATA

4 1/4 X 4 3/4 CORE - 2 COIL UNIT

6.50"
5.75"
0.7"
1.30"
A
B MAX.
0.30" WIDE 2 SLOTS

4.75"
4.40"
4 HOLES CLEARED FOR #10 THRU-BOLTS
3.90"
4.25"
4.40"

		120	208	240	277	
INPUT VOLTS		120	208	240	277	
CIRCUIT TYPE	CWA					
POWER FACTOR (min)	96%					
REGULATION						
Line Volts	±10%					
Lamp Watts	±10%					
LINE CURRENT (Amps)						
Operating..		3.80	2.20	1.90	1.65	
Open Circuit...		2.10	1.20	1.07	0.92	
Starting..		3.16	1.78	1.58	1.38	
UL TEMPERATURE RATINGS						
Insulation Class	H(180°C)					
Coil Temperature Code	1029	A	A	A	A	
MIN. AMBIENT STARTING TEMP.	-40°F or -40°C					
NOM. OPEN CIRCUIT VOLTAGE	265					
INPUT VOLTAGE AT LAMP DROPOUT...........................		64	114	123	152	
INPUT WATTS	434					
RECOMMENDED FUSE (Amps)......................................		10	6	5	5	
CORE and COIL						
Dimension (A)	2.28					
Dimension (B)	4.00					
Weight (lbs.)	14.5					
Lead Lengths	18"					
CAPACITOR REQUIREMENT						
Microfarads	26.0					
Volts (min.)	330					
Fault Current Withstand (amps)						
60 Hz TEST PROCEDURES (Refer to Advance Test Procedure for HID Ballasts - Form 1270)						
High Potential Test (Volts)						
1 minute	2000					
2 seconds	2500					
Open Circuit Voltage Test (Volts)	250-300					
Short-Circuit Current Test (Amps)						
Secondary Current						
Input Current...3.60-4.40		2.52	1.44	1.26	1.08	-
		3.78	2.16	1.89	1.63	

Capacitor: 7C260P33-R

Capacitance:	26
Dia/Oval Dim:	1.75
Height:	5.15
Temp Rating:	105°C

Wiring Diagram:

LINE V
LINE V
LINE V
LINE V
X3 X1
IGNITOR
X2
LAMP
LAMP
CAP CAP CAP
COM COM
Fig. M

CSA
RU U.L. RECOGNIZED

Ignitor: LI533-H4

LAMP IGNITOR LI5

Ballast to Lamp Distance (BTL) = 2 feet
Temp Rating: 105°C
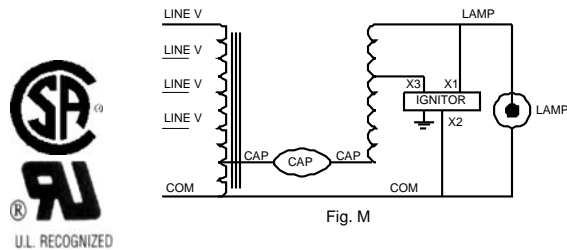
Ordering Information

Order Suffix	Description
500D.	Ballast With Ignitor and Dry Film Capacitor

Data is based upon tests performed by Advance Transformer in a controlled environment and representitive of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice.

	Metal Halide Lamp Ballast	Catalog Number 71A5237BP For 70W M98/M143 60 Hz R-HPF Status: Active

DIMENSIONS AND DATA

2 5/8 X 2 3/16 CORE

4.00"
3.50"
0.75"
A
B MAX.
0.30" WIDE 2 SLOTS

2.65"
2.20"
.20"
4 HOLES CLEARED FOR #6 THRU-BOLTS
2.20" 1.75"
.062"
.20"

INPUT VOLTS		277				
CIRCUIT TYPE	R-HPF					
POWER FACTOR (min)	90%					
REGULATION						
Line Volts	±5%					
Lamp Watts	±10%					
LINE CURRENT (Amps)						
Operating...		0.32				
Open Circuit...		0.80				
Starting..		0.50				
UL TEMPERATURE RATINGS						
Insulation Class	H(180°C)					
Coil Temperature Code	1029	A				
MIN. AMBIENT STARTING TEMP.	-20°F or -30°C					
NOM. OPEN CIRCUIT VOLTAGE	277					
INPUT VOLTAGE AT LAMP DROPOUT..........................		190				
INPUT WATTS	85					
RECOMMENDED FUSE (Amps)....................................		2				
CORE and COIL						
Dimension (A)	1.50					
Dimension (B)	2.90					
Weight (lbs.)	2.9					
Lead Lengths	12"					
CAPACITOR REQUIREMENT						
Microfarads						
Volts (min.)	8.0					
Fault Current Withstand (amps)	280					
60 Hz TEST PROCEDURES (Refer to Advance Test Procedure for HID Ballasts - Form 1270)						
High Potential Test (Volts)						
1 minute						
2 seconds	2000					
Open Circuit Voltage Test (Volts)	2500					
Short-Circuit Current Test (Amps)	260-290					
Secondary Current						
Input Current..0.85-1.25		0.20	-	-	-	-
		0.45				

Capacitor: 7C080L33-R

Capacitance: 8
Dia/Oval Dim: 1.25
Height: 2.9
Temp Rating: 105°C

CSA
RU U.L. RECOGNIZED

Wiring Diagram:
INTEGRATED IGNITOR BALLAST
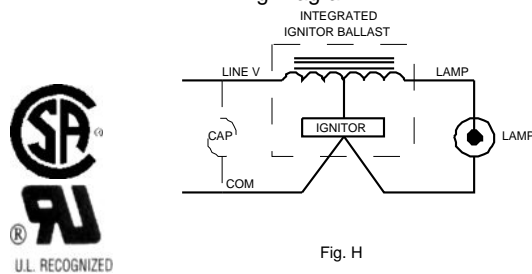LINE V
LAMP
CAP
IGNITOR
LAMP
COM
Fig. H

Ignitor: INTEGRAL

An ignitor integral to the core and coil assembly is used to start the lamp.

Ballast to Lamp Distance
(BTL) = 2 feet
Temp Rating: 125°C

Ordering Information

Order Suffix	Description
500DB	Ballast With Integral Igniter and Dry Film Capacitor
510DB	Ballast w/Welded Bracket, Integral Igniter & Dry Film Cap.
600B	Ballast and Integral Igniter, No Capacitor
610B	Ballast w/Welded Bracket and Integral Igniter, No Capacitor

ADVANCE ™

REL-3P32-SC

Brand Name	STANDARD ELEC
Ballast Type	Electronic
Starting Method	Instant Start
Lamp Connection	Parallel
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	3	17	0/-18	0.39	47	0.99	20	0.99	1.7	2.11
F25T8	2	25	0/-18	0.42	54	1.06	20	0.99	1.7	1.96
F25T8	3	25	0/-18	0.55	66	0.93	20	0.99	1.7	1.41
* F32T8	2	32	0/-18	0.54	65	1.03	20	0.99	1.7	1.58
F32T8	3	32	0/-18	0.71	85	0.88	20	0.99	1.7	1.04
F32T8/ES (30W)	2	30	60/16	0.51	61	1.03	20	0.99	1.7	1.69
F40T8	2	40	0/-18	0.66	79	1.01	20	0.99	1.7	1.28

Wiring Diagram

WHITE — BLACK — BALLAST — BLUE — BLUE — BLUE
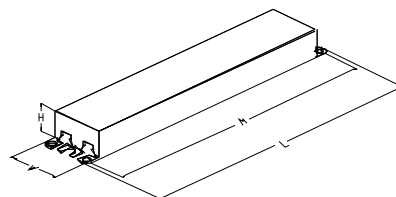
RED

LINE
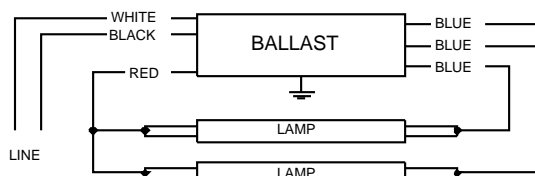
LAMP

LAMP

Diag. 70

Insulate unused blue lead for 1000V

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	25L	63.5
White	25R	63.5
Blue	31R	78.7
Red	37L	94
Yellow		0
Gray		0
Violet		0

	in.	cm.
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 08/21/2002

ROP-2P32-SC

Brand Name	OPTANIUM
Ballast Type	Electronic
Starting Method	Instant Start
Lamp Connection	Parallel
Input Voltage	120
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

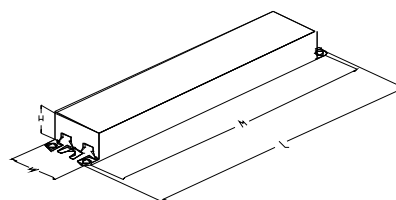| Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	0/-18	0.26	31	0.90	10	0.97	1.7	2.90
F25T8	1	25	0/-18	0.23	27	1.02	15	0.97	1.7	3.78
F25T8	2	25	0/-18	0.37	43	0.88	10	0.99	1.7	2.05
* F32T8	1	32	0/-18	0.30	35	1.01	10	0.98	1.7	2.89
F32T8	2	32	0/-18	0.47	55	0.88	10	0.99	1.7	1.60
F32T8/ES (28W)	1	28	0/-18	0.25	30	1.02	15	0.95	1.7	3.40
F32T8/ES (28W)	2	28	0/-18	0.41	48	0.87	10	0.98	1.7	1.81
F32T8/ES (30W)	1	30	60/16	0.28	33	1.01	10	0.97	1.7	3.06
F32T8/ES (30W)	2	30	60/16	0.44	52	0.88	10	0.99	1.7	1.69
F40T8	1	40	32/00	0.35	41	1.01	10	0.99	1.7	2.46
F40T8	2	40	32/00	0.56	67	0.88	10	0.99	1.7	1.31

Wiring Diagram

Diag. 68

Insulate unused blue lead for 1000V

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	25L	63.5
White	25L	63.5
Blue	31R	78.7
Red	37L	94
Yellow	0	0
Gray	0	0
Violet	0	0

	in.	cm.
Yellow/Blue	0	0
Blue/White	0	0
Brown	0	0
Orange	0	0
Orange/Black	0	0
Black/White	0	0
Red/White	0	0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 07/20/2004

GRAFIK Eye 3000 Series Control Unit

Cover (shown open)

Base   Zone   Infrared Receiver

Scene
Selection
Buttons

Description

- Provides pushbutton recall of four preset lighting scenes, plus Off.
- Allows setup of lighting scenes using buttons on the Control Unit.
- Controls many light source types directly, and others using power interfaces.
- Provides lockout options to prevent accidental changes.
- Includes built-in infrared receiver for operation with an optional remote control.

Models available to:

- Accept 120V, 220-240V (non-CE), 230V (CE) and 100V input power.
- Control two to six zones of lighting.

GRX-3100 Control Units

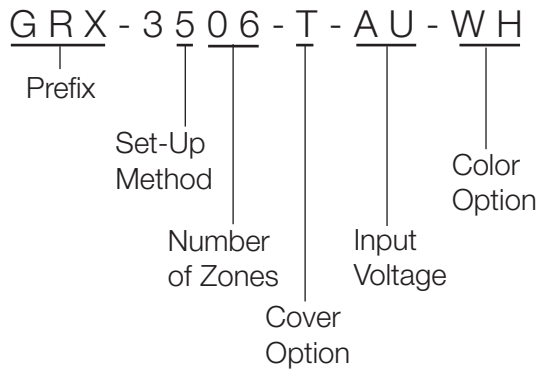Provide setup using buttons on the Control Unit.

GRX-3500 Control Units

Provide optional setup using a PC, including setting lighting levels in 1% increments.

Job Name:	Model Numbers:
Job Number:	

How to Build a Model Number

GRX - 3506 - T - AU - WH

Prefix

Set-Up Method

Number of Zones

Cover Option

Input Voltage

Color Option

Prefix:

GRX for Grafik Eye 3000 Series Control Units

Set-Up Method:

1 for standard via front panel

5 for PC setup

Number of Zones:

2, 3, 4, or 6

Cover Option:

A for Opaque

T for Translucent Black

Input Voltage

__ (no code) for 120V Single Feed

AU for 220-240V (non-CE)

CE for 230V (CE)

JA for 100V

Color Option:

See Color Options list

Cover Options

Opaque   A
Cover and Base will match.

Translucent Black   T
Black Cover and choice of base color.

Also available:
- Custom controls
- Color matching
- Engraving

These options ship in 4 to 6 weeks

Color Options

Architectural Matte Finishes
Standard – Ship in 48 hours
Cover Option: A or T

White	WH
Ivory	IV
Beige	BE
Gray	GR
Brown	BR
Black	BL

Designer Gloss Finishes
Ship in 4 to 6 weeks
Cover Option: A only

White	GWH
Light Almond	GLA
Almond	GAL
Ivory	GIV

Satin Color Matte Finishes
Cover Option: A or T

Hot	HT
Ochre	OC
Terracotta	TC
Desert Stone	DS
Stone	ST
Limestone	LS
Blue Mist	BT
Midnight	MN
Taupe	TP
Biscuit	BI
Eggshell	ES
Snow	SW

Architectural Metal Finishes
Cover Option: T only

Bright Brass	BB
Bright Chrome	BC
Satin Brass	SB
Satin Chrome	SC
Satin Nickel	SN
Antique Brass	QB
Antique Bronze	QZ
Bright Nickel	BN

Anodized Aluminum Finishes
Cover Option: T only

Clear	CLA
Black	BLA
Brass	BRA
Bronze	BZA

Job Name:	Model Numbers:
Job Number:	

Model Numbers

120V Input Power

Number of Zones	Standard Setup	PC Setup	Unit Capacity (Watts/VA)	Zone Capacity (Watts/VA)
2	GRX-3102-_-__	GRX-3502-_-__	1200	800
3	GRX-3103-_-__	GRX-3503-_-__	1500	800
4	GRX-3104-_-__	GRX-3504-_-__	2000	800
6	GRX-3106-_-__	GRX-3506-_-__	2000	800

220–240V (non-CE) Input Power

Number of Zones	Standard Setup	PC Setup	Unit Capacity (Watts/VA)	Zone Capacity (Watts/VA)
2	GRX-3102-_-AU-__	GRX-3502-_-AU-__	1600	1200
3	GRX-3103-_-AU-__	GRX-3503-_-AU-__	2400	1200
4	GRX-3104-_-AU-__	GRX-3504-_-AU-__	3000	1200
6	GRX-3106-_-AU-__	GRX-3506-_-AU-__	3000	1200

230V (CE) Input Power

Number of Zones	Standard Setup	PC Setup	Unit Capacity (Watts/VA)	Zone Capacity (Watts/VA)
2	GRX-3102-_-CE-__	GRX-3502-_-CE-__	1600	800
3	GRX-3103-_-CE-__	GRX-3503-_-CE-__	2300	800
4	GRX-3104-_-CE-__	GRX-3504-_-CE-__	2300	800
6	GRX-3106-_-CE-__	GRX-3506-_-CE-__	2300	800

100V Input Power

Number of Zones	Standard Setup	PC Setup	Unit Capacity (Watts/VA)	Zone Capacity (Watts/VA)
2	GRX-3102-_-JA-__	GRX-3502-_-JA-__	1000	600
3	GRX-3103-_-JA-__	GRX-3503-_-JA-__	1250	600
4	GRX-3104-_-JA-__	GRX-3504-_-JA-__	1600	600
6	GRX-3106-_-JA-__	GRX-3506-_-JA-__	1600	600

Job Name:	Model Numbers:
Job Number:	

GRX-4000 Control Units

Cover (shown open)

Base Zone Infrared Receiver

Scene Selection Buttons
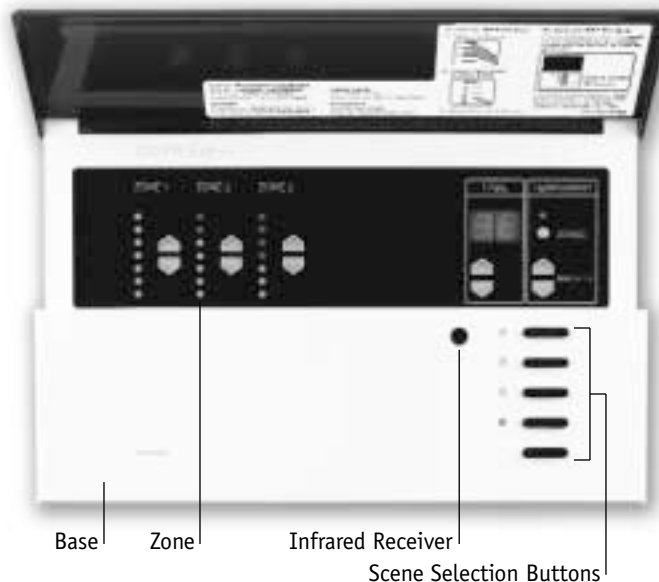
DESCRIPTION

- Provide pushbutton recall of four preset lighting scenes.
- Control virtually any light source.
- Provide lockout options to prevent accidental changes.
- Include built-in infrared receiver for operation with an optional remote control.

Models available to:

- Control two to 24 zones of lighting.
- Provide easy setup of preset lighting scenes:
  GRX-4100 Control Units provide standard setup via pushbuttons on the Control Unit.
  GRX-4500 Control Units provide optional setup via a PC, including setting lighting levels in 1% increments.

GRX-4000 Control Units work with:

- GRAFIK Eye Wallstations
- GP and LP Dimming Panels
- XP Softswitch™ Panels

SPECIFICATIONS

Operating Voltage

- Low-voltage type Class 2 (PELV), 12VDC to 24VFW.
- Lightning Strike Protection: Meets ANSI/IEEE standard 62.41-1980. Can withstand voltage surges of up to 6000V and current surges up to 3000A.

Sources/Load Types

Operates sources with a smooth continuous Square Law dimming curve or on a full conduction non-dim basis via GP and LP Dimming Panels and XP Softswitch™ Panels.

Preset Controls

- 4 preset lighting scenes and off for up to 24 zones, accessible from Control Unit faceplate.
- 12 additional scenes stored in Control Unit, accessible via Wallstations and/or Control Interfaces.
- Light levels fade smoothly between scenes. Fade time: 0-59 seconds or 1-60 minutes. Can be set differently for each scene.

Key Design Features

- Meets IEC 801-2. Tested to withstand 15kV electrostatic discharge without damage or memory loss.
- Provides power failure memory: Automatically restores lighting to scene selected prior to power interruption.
- Has faceplate that snaps on with no visible means of attachment.
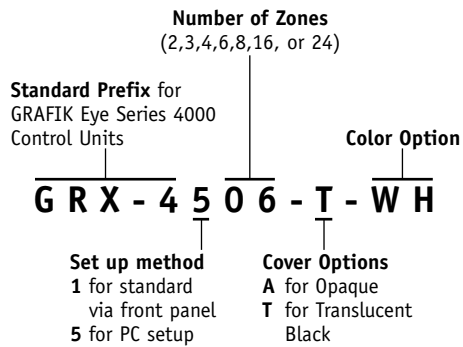
System Communications and Capacities

Low-voltage type Class 2 (PELV) wiring connects Control Units, Wallstations, and Control Interfaces:

- You can link up to 8 Control Units to control up to 64 zones.
- You can add up to 16 total Wallstations and Control Interfaces for a total of 24 control points.

Environment

- 32-104°F (0-40°C). Relative humidity less than 90% non-condensing.

JOB NAME:	MODEL NUMBERS:
JOB NUMBER:	

HOW TO BUILD A MODEL NUMBER

Number of Zones
(2,3,4,6,8,16, or 24)

Standard Prefix for
GRAFIK Eye Series 4000
Control Units

Color Option

G R X - 4 5 0 6 - T - W H

Set up method
1 for standard
via front panel
5 for PC setup

Cover Options
A for Opaque
T for Translucent
Black

MODELS

NUMBER OF ZONES	MODEL NUMBER STANDARD SETUP	PC SETUP
2	GRX-4102-_-__	GRX-4502-_-__
3	GRX-4103-_-__	GRX-4503-_-__
4	GRX-4104-_-__	GRX-4504-_-__
6	GRX-4106-_-__	GRX-4506-_-__
8	GRX-4108-_-__	GRX-4508-_-__
16	GRX-4116-_-__	GRX-4516-_-__
24	GRX-4124-_-__	GRX-4524-_-__

COVER OPTIONS

Opaque **A**
Cover and Base will match.
Translucent Black **T**
Black cover and your
choice of base color.

BASE COLORS

Matte Finishes

Standard – Ships in 48 hours
White **WH**
Ivory **IV**
Beige **BE**
Gray **GR**
Brown **BR**
Black **BL**

Gloss Finishes

Ships in 4 to 6 weeks
Cover Choice: **A** only
White **WH**
Light Almond **GLA**
Almond **GAL**
Ivory **GIV**

Metal Finishes

Cover Choice: **T** only
Bright Brass **BB**
Bright Chrome **BC**
Bright Nickel **BN**
Satin Brass **SB**
Satin Chrome **SC**
Satin Nickel **SN**
Antique Brass **QB**
Antique Bronze **QZ**

Anodized Aluminum
Clear **CLA**
Black **BLA**
Brass **BRA**

Custom Controls, color
matching, and engraving
available, Ships in
4 to 6 weeks

LUTRON® SPECIFICATION SUBMITTAL

Page

JOB NAME:	MODEL NUMBERS:
JOB NUMBER:	

GP Dimming Panels

GP3/4
Mini Panels

GP8-24
Standard-Size Panels

DESCRIPTION

- Provide power and dimming for up to 144 load circuits.
- Control any light source, including full-conduction non-dim.

Models available for:
- 100-127V, 220-240V (non CE), 230V (CE), and 277V.
- 3 to 144 circuits.
- Different feed types and breakers.

GP Dimming Panels work with:
- GRX-4000 Control Units
- GRAFIK 5000 and 6000 Systems
- LP Dimming Panels
- XP Softswitch™ Panels
- DMX512 dimming systems via the 2LINK™ option.

Get a Panel Fast!
LISA (Lutron Integrated System Advantage) Program ships standard Panels 3 to 5 working days from receipt of approved drawings.

GP36
Large-Size Panels

GP48-144
Large-Size Panels

JOB NAME:	MODEL NUMBERS:
JOB NUMBER:	

NEW… seeTouch™ Wallstations
For GRAFIK Systems and HomeWorks Interactive Systems

MODEL NO. SGRX-4S-NL-BL

Big, backlit buttons
Easy to find and press – even in a darkened AV presentation room. Buttons select preset lighting scenes or turn lights off.

Engraving on buttons
Easy to use – the labels show what each button does.
Easy to specify, too – simply order labeled buttons.

Optional Built-in infrared receiver
Occupants can use a handheld Wireless Remote Control to
• Change scenes
• Temporarily adjust light levels
• Turn lights off

Optional Raise/Lower buttons
For fine-tuning lighting

Colors/Finishes
Faceplate and matching buttons are available in a variety of plastic colors. Metal finishes are also available.

Field Configurable Buttons
Just swap buttons and faceplates to change control

Consult Lutron for exact model numbers and detailed mounting and wiring information. 1-800-523-9466   www.lutron.com/seetouch

❋LUTRON® SPECIFICATION SUBMITTAL

JOB NAME:	MODEL NUMBERS:
JOB NUMBER:	

RADIOTOUCH™

Fluorescent Fixtures
(With *Lutron*
dimming ballasts)

Power

Power

RadioTouch™
Controller

RadioTouch
Controller

Power and
Control

Fluorescent
Fixtures
(With
Lutron
dimming
ballasts)

Power

RadioTouch
Wallbox
Transmitter

RadioTouch Tabletop
Transmitter(s)
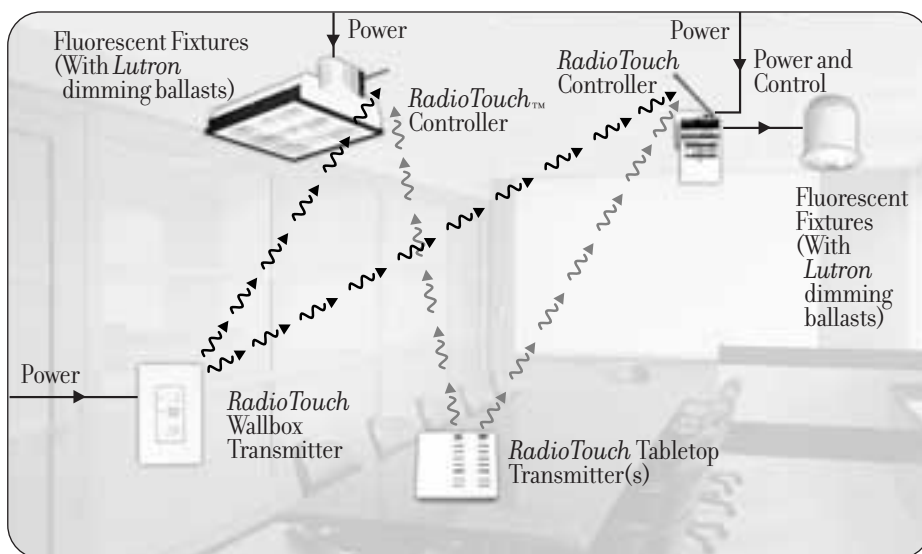
By simply pressing buttons on a *RadioTouch* transmitter, radio frequency signals are sent to *RadioTouch* Controllers housed in the ceiling. These Controllers then send signals to *Lutron* dimming ballasts adjusting the light levels and also send signals to optional motorized window treatments and projection screens to adjust window treatments or screen levels.

Add up to 16 transmitters in the room to meet your flexibility needs.
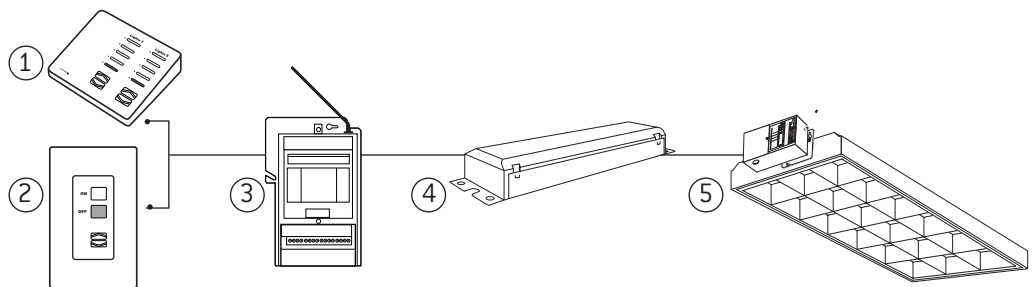
① *RadioTouch* tabletop or security mounted transmitters can be placed anywhere in a room.

② *RadioTouch* wallbox transmitters can replace any wall switch.

③ One Controller is required per lighting zone. The same Controllers are used to control motorized window treatments and projection screens.

④ Equip fluorescent lighting fixtures with *Lutron* 1% *Hi-lume*® dimming ballasts.

⑤ *Lutron* dimming ballasts can be installed in existing fixtures or can be ordered pre-installed in a *Lutron* fixture.

CONTROLLERS

Controllers for lights, window treatments and projection screens

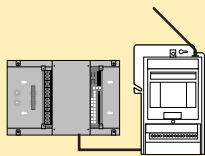|		
Switches one lighting zone, plus occupant sensing (requires sensor); can be fixture or junction box mounted	**RTA-RX-SW**[1]	• One required per lighting zone • Accepts inputs from occupant sensors • Operates at 120/277V • Switches 16 Amps of high inrush lighting load
Regulates one lighting zone, plus occupant and daylight sensing (requires sensor); can be fixture or junction box mounted	**RTA-RX-F**[1]	• One required per lighting zone • Controls *Lutron Hi-lume*®, *Eco-10*™, and TVE ballasts directly • Controls *Lutron Tu-Wire*® ballasts, incandescent and magnetic low voltage sources through an FDI Load Interface. • Accepts inputs from occupant sensors and a daylight sensor • Operates at 120/277V • 16A continuous dimming capacity
Regulates one lighting zone, plus occupant and daylight sensing (requires sensor), and switch closure outputs; can be fixture or junction box mounted	**RTA-RX-F-SC**[1]	• All functions of RTA-RX-F plus the features below • Controls *Sivoia*™ Motorized Window Treatments directly • Provides up to five momentary output switch closures to *GRAFIK Eye*® products or equipment by others.
Includes one RTA-RX-F-SC and one WC-4M-GC for control of AC Motorized Window Treatments and projection screens	**RTA-RX-F-SC-ACM**	• All functions of RTA-RX-F-SC plus the features below • Provides group control of up to 4 AC Motorized Window Treatments • Additional motorized window treatments can be controlled by adding more WC-4M-GC or WC-1M-GC group controls

[1] Available in 347 Volt models

LOAD INTERFACES*

*All load interfaces operate at 120 Volts

Load interfaces for control of lights, window treatments and projection screens

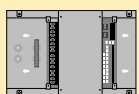|		
Interfaces for incandescent, magnetic low voltage, electronic low voltage and *Lutron Tu-Wire* ballasts	**FDI-INC-2000**[2] **FDI-ELV-1000**[2] **FDI-FTU-16A-120**[2]	• Connects *RadioTouch*™ Controller to an incandescent or magnetic low voltage lighting circuit; 2000W capacity • Connects *RadioTouch* Controller to an electronic low voltage lighting circuit; 1000VA capacity • Connects *RadioTouch* Controller to one *Tu-Wire* ballast fluorescent lighting circuit; 16A capacity
Interface to AC Motorized Window Treatments and projection screen motors	**WC-4M-GC** **WC-1M-GC**	• Provides individual or master control of one or up to four AC Motorized Window Treatments or projection screens • Add to RTA-RX-F-SC-ACM for control of additional AC Motorized Window Treatments

[2] Backbox mounted (junction box or 2-gang)

WALLBOX TRANSMITTERS*

Wallbox transmitters for control of lights
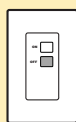
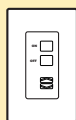|			
	On/Off control of one or more switched lighting zones	**RTA-WX-2BSW-WH**[1]	• Use in multiples for multi-location switching • Can communicate with multiple Controllers for master control of multiple lighting zones
	On/Off and Raise/Lower control of one or more dimmable lighting zones	**RTA-WX-2B-WH**[1]	• Use in multiples for multi-location dimming • Can communicate with multiple Controllers for master control of multiple lighting zones
	Four preset levels plus Off and Raise/Lower control of one or more dimmable lighting zones	**RTA-WX-5B-WH**[2]	• Use in multiples for multi-location control • Can communicate with multiple Controllers for master control of multiple lighting zones
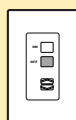
Wallbox transmitters for control of *Sivoia*™ Motorized Window Treatments

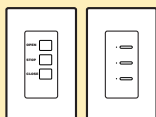|			
	Open/Close and Raise/Lower control of one or more *Sivoia* Motorized Window Treatment zones	**RTA-WX-S2LB-WH**[1]	• Use in multiples for multi-location *Sivoia* Window Treatments • Can communicate with multiple Controllers for master control of *Sivoia* Motorized Window Treatment zones
	Three presets plus Open/Close and Raise/Lower control of one or more *Sivoia* Motorized Window Treatment zones	**RTA-WX-S5SB-WH**[2]	• Use in multiples for multi-location *Sivoia* Window Treatments • Can communicate with multiple Controllers for master control of *Sivoia* Motorized Window Treatment zones

Wallbox transmitters for control of AC Motorized Window Treatments and projection screens
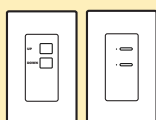
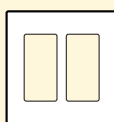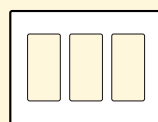|			
	Open/Close/Stop control of one or more AC Window Treatment zones	**RTA-WX-C3LB-WH**[1] (large buttons) **RTA-WX-C3SB-WH**[2] (slim buttons)	• Use in multiples for multi-location AC Window Treatments • Can communicate with multiple Controllers for master control of AC Window Treatment zones
	Up/Down control for one or more AC motorized projection screens	**RTA-WX-C2LB-WH**[1] (large buttons) **RTA-WX-C2SB-WH**[2] (slim buttons)	• Use in multiples for multi-location AC motorized projection screen control • Can communicate with multiple Controllers for master control of multiple projection screen zones

CLARO® WALLPLATES

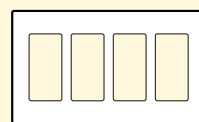## Screwless wallplates for single or multi-gang installations

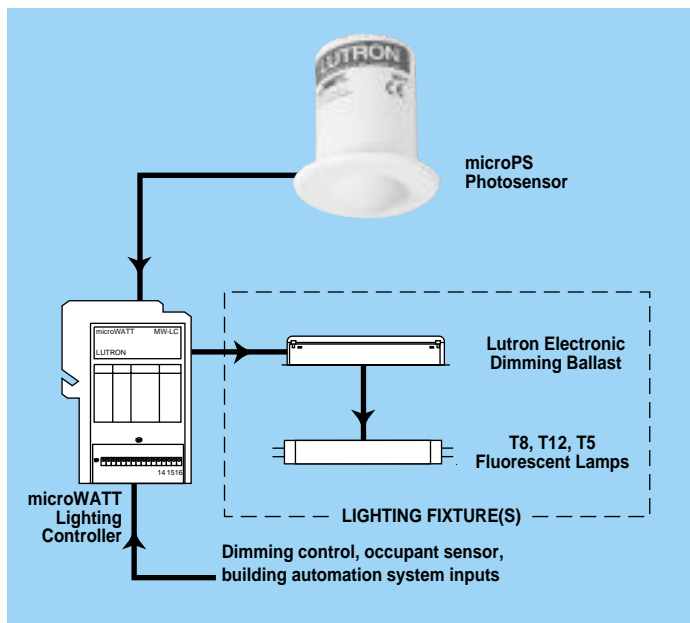|			
Single-Gang Screwless Wallplate **CW-1-WH**	Two-Gang Screwless Wallplate **CW-2-WH**	Three-Gang Screwless Wallplate **CW-3-WH**	Four-Gang Screwless Wallplate **CW-4-WH**

• Contact *Lutron* Customer Service for wallplate laser-engraving at 1.888.LUTRON1

• For 5- and 6-Gang applications, contact *Lutron* Customer Service

General Description

Lutron's microPS™ Photosensor provides automatic daylight control input to dim fluorescent lighting in response to changing daylight.

The Photosensor works with Lutron's microWATT® Lighting Controller, which integrates signals from it and other sensors, controls or building automation system inputs to automatically control lighting to the lowest level required.

microPS Photosensor

Lutron Electronic Dimming Ballast

T8, T12, T5 Fluorescent Lamps

LIGHTING FIXTURE(S)

microWATT Lighting Controller

Dimming control, occupant sensor, building automation system inputs

Photosensor Available Model

MW-PS-WH (White)

Photosensor Features

• Provides input to automatically dim fluorescent lights when available daylight is high, and raise fluorescent lights when available daylight is low

• Easily calibrated for daylight sensitivity

• Compatible with Lutron microWATT Lighting Controllers and Hi-lume® and Eco-10™ Dimming Ballasts

• Low voltage Class 2 wiring for simplified installation

• Simple ceiling tile mounting with one 2 inch (50mm) hole; all hardware provided

dimming by **LUTRON**

Specifications

1. Provide Photosensor from a supplier with more than 25 years experience manufacturing electronic switches, fluorescent dimming controls, and electronic dimming ballasts.

2. Manufacturer shall take sole responsibility for the Photosensor, lighting controller, dimming controls and dimming ballasts.

3. Manufacturer shall provide a toll-free phone number, with 24 hour emergency access, to specifically service technical and application questions.

4. Manufacturer shall have ISO 9001 quality certification and factory employed service engineers.

5. The Photosensor shall provide open loop feedback to the lighting controller.

6. The Photosensor shall provide a Class 2 low voltage signal.

7. The Photosensor shall be color and spatially corrected and provide a true representation of changes in perceived lighting levels.

8. The Photosensor shall be partially shielded for accurate detection of available daylight.

9. The Photosensor shall have a 60° from vertical viewing angle for accurate daylight averaging.

10. The Photosensor's output shall remain stable over time and temperature from 0° to 40° C.

11. The Photosensor shall provide a linear response from 0 to 500 footcandles.

12. The Photosensor shall work in conjunction with a Lutron microWATT Lighting Controller, which shall provide remote calibration adjustment.

Photosensor Placement and Sensitivity

For average size areas

For narrow areas (e.g. corridors, private offices)
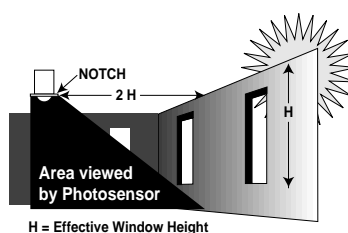
NOTCH
2 H
H
Area viewed by Photosensor
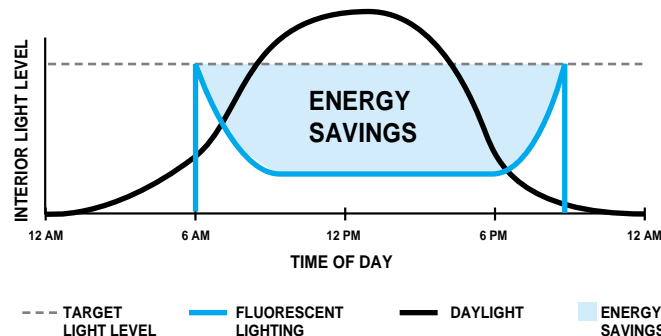**H = Effective Window Height**

NOTCH
H

Place Photosensor two times window height from outside wall, and so that viewing area does not extend out of a window. Point notch as indicated.
Do not position Photosensor in the well of a skylight or above indirect lighting fixtures.
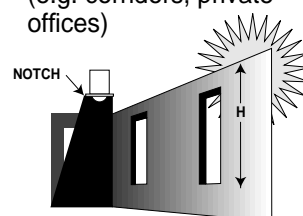
Point notch away from window when Photosensor can not be placed 2H away from window.

INTERIOR LIGHT LEVEL

ENERGY SAVINGS

12 AM   6 AM   12 PM   6 PM   12 AM

TIME OF DAY

– – – **TARGET LIGHT LEVEL**   —— **FLUORESCENT LIGHTING**   —— **DAYLIGHT**   ▢ **ENERGY SAVINGS**

LUTRON®

LS-301 Dimming Photosensor

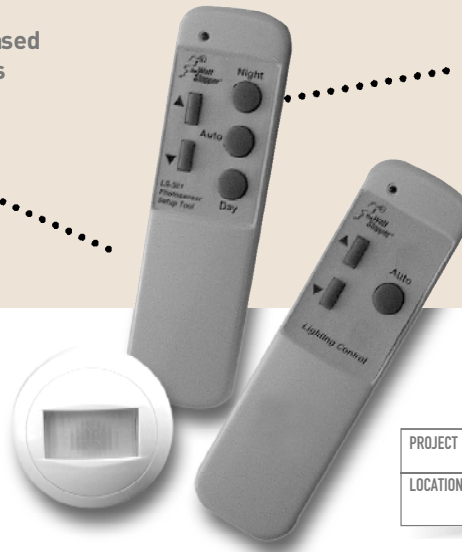**Automatic dimming based on ambient light levels**

Controls standard 0-10 VDC electronic dimming ballasts

All setup performed remotely with handheld

Optional occupant adjustment via handheld remote

Single zone control

Closed loop daylighting control

PROJECT

LOCATION/TYPE

Product Overview

Description

The LightSaver LS-301 is a ceiling mount, low voltage indoor photosensor that works with standard, 0-10 VDC electronic dimming ballasts to dim lighting as daylight increases.

Operation

The LS-301 mounts on a ceiling and utilizes a spectral filtering system to measure daylight and electric light levels. A closed loop daylighting system, the LS-301 measures the total light level from daylight and electric light in the controlled area to adjust electric lighting levels. As the daylight contribution increases, the lights dim down. The photosensor utilizes sliding setpoint control, which responds to the different spatial distribution qualities of electric light and daylight. The LS-301 calculates the required light level for current daylight contribution based on two setpoints. One represents the target level when no daylight is present (night setpoint) and the other when significant daylight is present (day setpoint).

Adjustment via Handheld Remote Control

All LS-301 adjustments are made with one of two handheld remotes. The LSR-301-S provides five buttons for initial set-up, which is easily completed by first raising or lowering electric light levels to desired levels, then programming this target level into the photosensor. The LSR-301-P provides three buttons for occupants to adjust light levels. With this optional tool, users can increase target light levels by up to 25% or reduce them to the lamp/ballast minimum level. Pressing the "Auto" button returns the control to programmed levels.

Applications

The LS-301 is designed to blend into its surroundings when installed in any environment. It provides one zone of daylighting control in a private office or classroom. In these applications, the LS-301 can be combined with an occupancy sensor. Often, it is possible for the LS-301 to share a single power pack with occupancy sensor(s).

Features

- Provides precise control of lighting to maintain desired light level
- Extremely linear photocell response with greater than 1% accuracy
- Designed to measure light as the human eye perceives it, eliminating "overreporting" illumination levels provided by daylight

- Separate handheld remote controls for setup and occupant adjustment to prevent tampering
- Boosts energy savings by reducing maximum lamp output, often resulting in a 20% reduction or more compared with lights at full output
- Achieves lumen maintenance by holding target light level as lamp output decreases over time
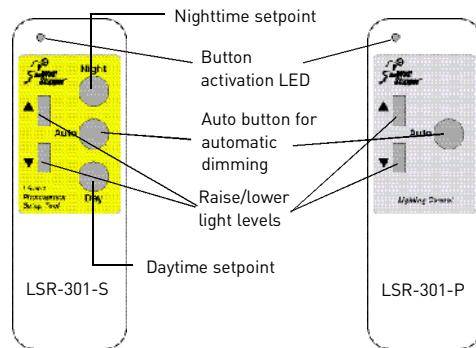
WattStopper

legrand

LS-301 Technical Information

Specifications

- Full range dimming: .2 VDC (minimum) to 10 VDC (100% lighting) output voltage
- Current consumption: 30 mA @ 24 VDC
- In typical applications, setpoints are adjustable from 20-60 footcandles (210-640 lux)
- Controls up to 50 standard dimming ballasts in one zone
- Sensor leads: gray and violet to ballast, red and black to 24 VDC
- Dimensions: 2.35" diam. x 0.875" depth (60mm x 22mm), threaded piece extends 1.25" (31.8mm) from back, fits .5" knockout
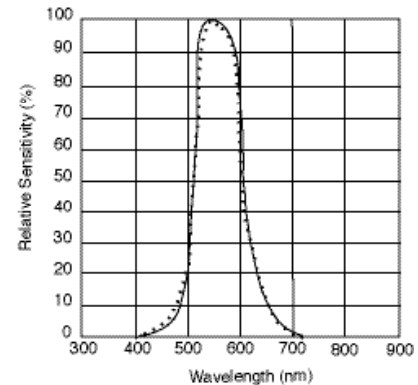- 5 year warranty

Product Controls

Remote Controls

Nighttime setpoint
Button activation LED
Auto button for automatic dimming
Raise/lower light levels
Daytime setpoint

LSR-301-S

LSR-301-P

Remote handheld (above left) enables easy set-up while optional occupant remote provides adjustability for individual lighting preferences.
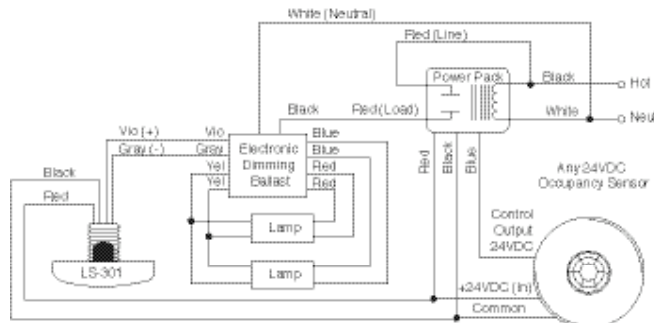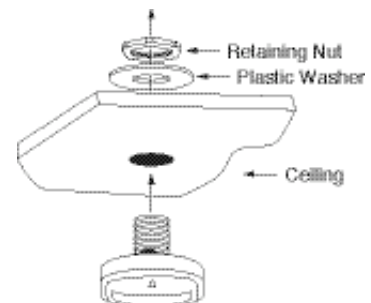
Spectral Response Curve

The spectral response of the LS-301 photocell closely matches the sensitivity of the human eye.
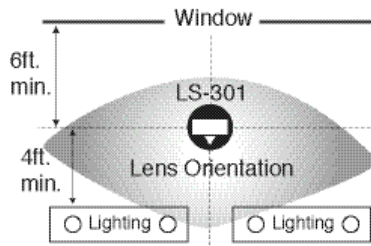
Wiring & Installation

Wiring

Mounting and Installation

Coverage

Placement Guidelines

- Mount photocell between 6 and 12 feet (1.8m - 3.7m) from window.
- Do not mount directly above direct/indirect pendant fixtures. Mount at least 4 feet (1.2m) from pendant fixtures.

Ordering Information

Catalog No.	Description	Output Voltage
LS-301	Dimming Photosensor	.2 VDC (min.) to 10 VDC (max.)
LSR-301-S	Setup Remote Control (2 AAA batteries included)	
LSR-301-P	Occupant Remote Control (2 AAA batteries included)	

WT Ultrasonic Occupancy Sensor

Ultrasonic technology with 32 KHz frequency

Utilizes advanced, omni-directional, Doppler technology

Advanced Signal Processing automatically adjusts detection threshold

User-adjustable DIP switch time delay and sensitivity settings

600, 1100, 2200 sq ft and hallway coverages available

Isolated relay allows sensor to interface with building control systems

Product Overview

Description

The Watt Stopper WT sensors are advanced ultrasonic occupancy sensors with a 32 KHz frequency. The sensors are available in several models to control lighting in a wide variety of applications.

Operation

The 24 VDC ultrasonic sensors utilize advanced, omni-directional, Doppler technology. When an ultrasonic sensor detects movement in a controlled area, it switches lighting on through a Watt Stopper power or auxiliary pack. The sensor controls the power pack through low voltage wiring. Once the area is vacated and the time delay has elapsed, lighting systems automatically switch off.

Advanced Signal Processing

The sensors use The Watt Stopper's Advanced Signal Processing (ASP). ASP filters out moving air noise by checking for small cyclical changes found in turbulent air. This helps to eliminate false ON problems found in sensors without ASP.

Applications

WT sensors offer excellent control of lighting for many areas of a building. The sensors are designed to effectively control offices, restrooms, storage areas, and open office areas and can control large partitioned office spaces when configured in zone patterns. The WT can be used with Watt Stopper AS-100 Automatic Control Switches to achieve manual-on/auto-off function when auto-on is not desired. The WT sensors' superior performance and ease of installation will provide fast paybacks and many years of energy savings.

Features

- Advanced Signal Processing Circuitry helps to eliminate false ONs
- Utilizes advanced, omni-directional, Doppler technology for reliable occupancy detection
- Angled transmitter and receiver pairs help optimize sensitivity while eliminating unwanted detection from ceiling air movement

- Coverage ranges from 600 to 2200 square feet and 90 linear feet (for hallways)
- Isolated relay can interface with HVAC, EMS, or with an additional lighting load
- DIP switch adjustable time delay and sensitivity
- LED indicates occupancy detection

the Watt Stopper ®

www.wattstopper.com
800.879.8585

WT Technical Information

Specifications

- Solid state, crystal-controlled (32.768 kHz ± 0.002%)
- Omni-directional transmission (360° coverage)
- Temperature and humidity resistant 32 kHz receivers
- Digital DIP switch time delay (15 seconds to 30 minutes)
- Isolated relay with N/O and N/C outputs; rated for 1 Amp @ 30 VDC/VAC
- Units per power pack: WT-605: up to 4 (B), up to 5 (BZ). WT-600: up to 3 (B), up to 4 (BZ). WT-1105, WT-2205, WT-2255: up to 3 (B), up to 5 (BZ). WT-1100, WT-2200, WT-2250: up to 2 (B), up to 3 (BZ).
- Dimensions: 4.8" diameter x 1.5" (122mm x 38mm)
- UL and CUL listed; Five year warranty

Wiring, Installation & Placement
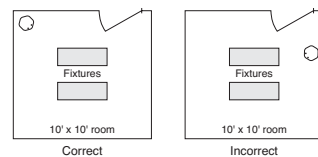
Wiring & Controls
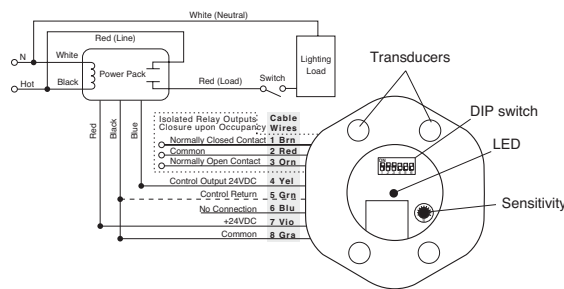

Installation
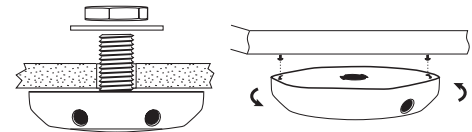
Attached to a vibration-free surface. Mount the sensors with the receivers facing the area of coverage. Note: Place 4' away from supply ducts, 6' from horizontal discharge ducts, and 6" from power packs.

Enclosed Office Placement

For enclosed spaces, place sensors as in Figure A. Sensors placed as in Figure B may see out the door and cause false triggers.
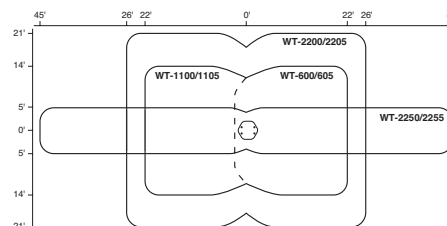
Open Office Placement
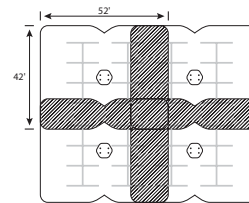
For open office spaces, the WT-2200 is typically used because of its 360° coverage and capability to bounce ultrasound off of partitions, walls, floors and other reflecting objects. A typical layout place the sensors so they control the area in zones that overlap.

Coverage & Settings

Coverage

Coverages shown represent half-step walking motion. Actual coverages can vary for each application depending on the shape and use of space and the obstacles present.

DIP Switch Settings

♦ = factory preset
●=ON –=OFF

Time Delay	1	2	3	4	5	6
15 seconds	●	–	–	–	–	–
2 minutes	–	●	–	–	–	–
4 minutes	–	–	●	–	–	–
6 minutes	–	●	●	–	–	–
8 minutes	–	–	–	●	–	–
10 minutes	–	●	–	●	–	–
12 minutes	–	–	●	●	–	–
14 minutes	–	●	●	●	–	–

	1	2	3	4	5	6
16 minutes	–	–	–	–	●	–	♦
18 minutes	–	●	–	–	●	–
20 minutes	–	–	●	–	●	–
22 minutes	–	●	●	–	●	–
24 minutes	–	–	–	●	●	–
26 minutes	–	●	–	●	●	–
28 minutes	–	–	●	●	●	–
30 minutes	–	●	●	●	●	–
Output Disable	–	–	–	–	–	–
Override						●

Ordering Information

Catalog No.	Description	Voltage	Current	Coverage
WT-605	Ultrasonic ceiling sensor	24 VDC	27 mA	600 sq ft; 360°
WT-600	Ultrasonic ceiling sensor w/ isolated relay	24 VDC	37 mA	600 sq ft; 360°
WT-1105	Ultrasonic ceiling sensor	24 VDC	30 mA	1100 sq ft; 360°
WT-1100	Ultrasonic ceiling sensor w/ isolated relay	24 VDC	40 mA	1100 sq ft; 360°
WT-2205	Ultrasonic ceiling sensor	24 VDC	30 mA	2200 sq ft; 360°
WT-2200	Ultrasonic ceiling sensor w/ isolated relay	24 VDC	40 mA	2200 sq ft; 360°
WT-2255	Ultrasonic hallway sensor	24 VDC	30 mA	90 linear ft; 360°
WT-2250	Ultrasonic hallway sensor w/ isolated relay	24 VDC	40 mA	90 linear ft; 360°

All units are white and use Watt Stopper power packs. Current consumption can be slightly higher when only one sensor per power pack is used.