

neoray™

The Possibilities of Light



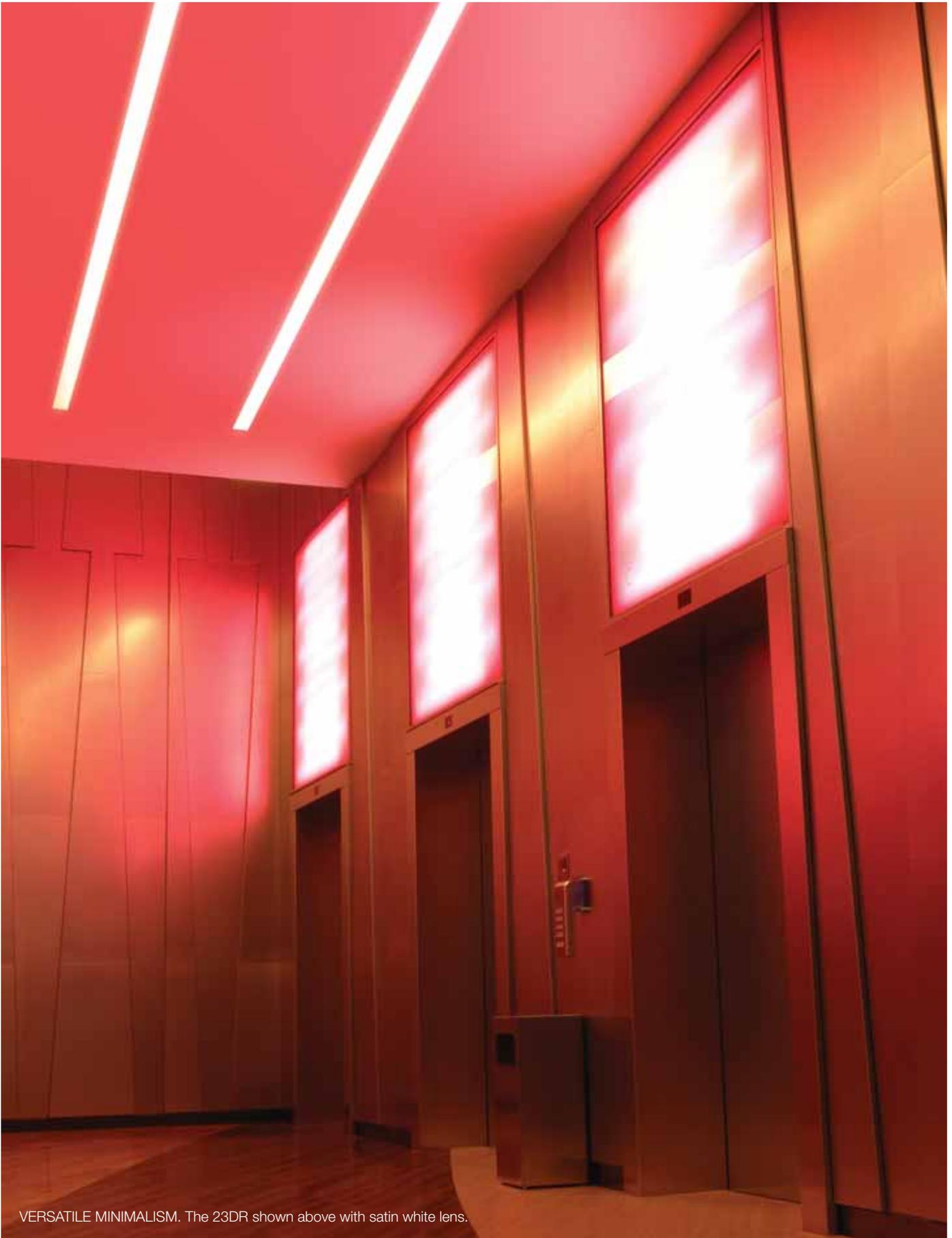
STRAIGHT & NARROW

 **COOPER** Lighting

STRAIGHT & NARROW



product overview	3-4
22 series.	5-6
23 series.	7-8
23X wall wash	9-10
features	11-12
mounting	13-14
applications	15
gallery.	16
photometrics	17-18



VERSATILE MINIMALISM. The 23DR shown above with satin white lens.

STRAIGHT & NARROW

A return to simplicity, elegance and minimalism. Slender lines of light set in an architectural environment are the essence of STRAIGHT & NARROW.

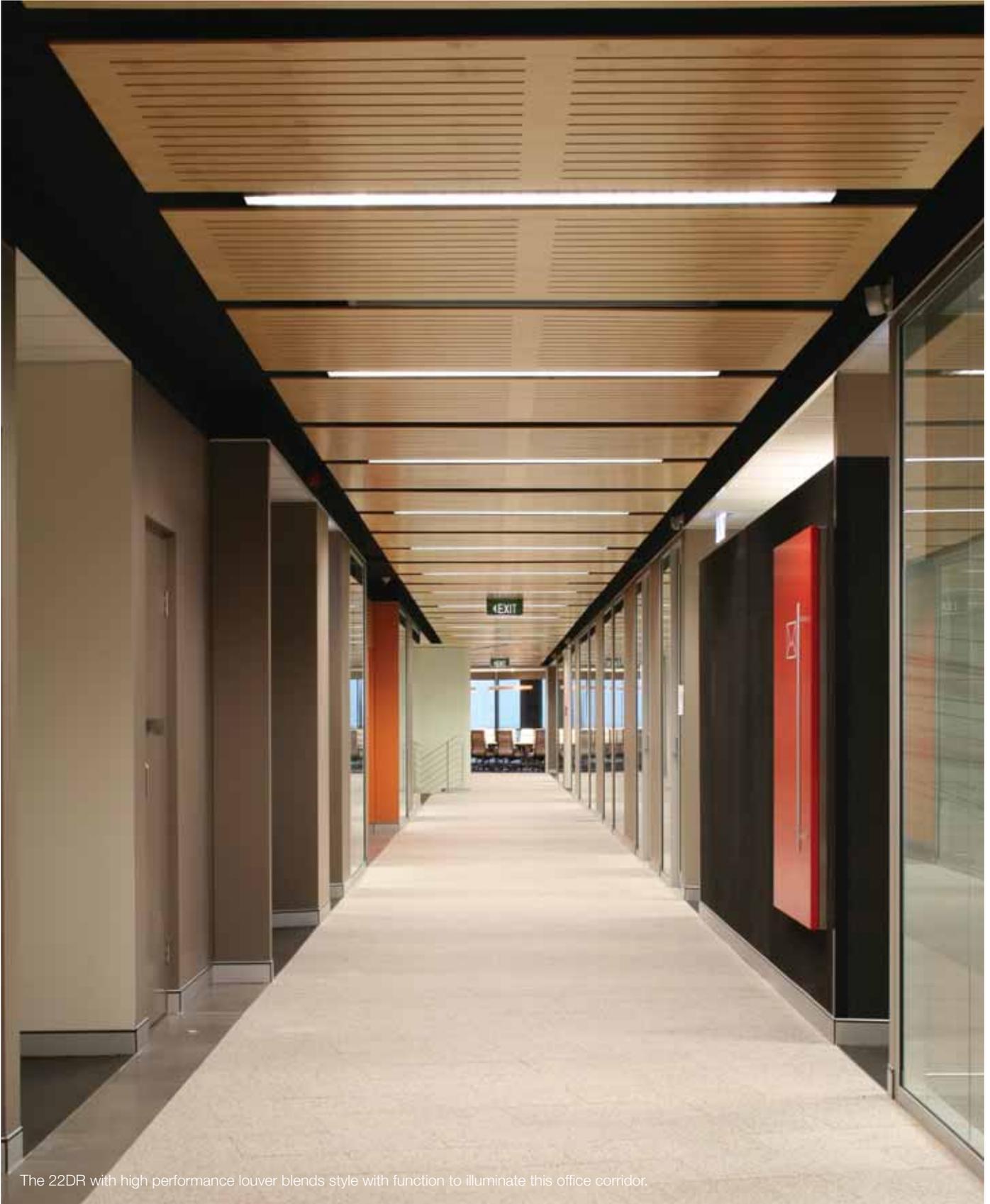
Starting at just over 2" wide the STRAIGHT & NARROW series provides unlimited flexibility by adapting to the architecture of the space. Offered in recessed, suspended, surface, wall mount and in-wall configurations with a selection of up to (7) shielding and reflector systems for symmetrical and asymmetrical, direct or indirect applications.

Available in T5, T5HO and T8 lamping configurations with optional MR16 point source modules. STRAIGHT & NARROW's extruded form allows for precise custom lengths to create beautiful bands of illumination.



PRODUCT OFFERING



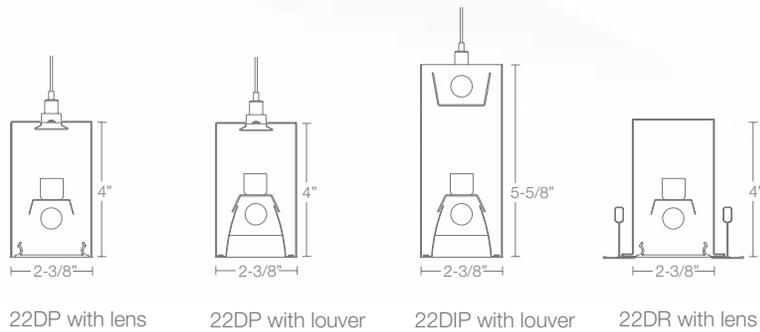


The 22DR with high performance louver blends style with function to illuminate this office corridor.

STRAIGHT & NARROW 22 SERIES

(1) LAMP T5 and T5HO

- Standard or custom fixture lengths (standard 3', 4', 6' and 8' individual lengths)
- Fits Sheet Rock, ETG and STG applications without interference
- "In Wall" for highlighting and wayfinding applications
- Continuous runs in 1' increments available (other custom lengths can be configured per application)
- Flanged or Flangeless trims optional
- 90 degree and T Corner capability
- Standard finish is White (optional Silver, Black or RAL color matches available)
- Shielding options:
 - Flush Satin Lens
 - High Performance Louver
 - White Louver
 - Louvers available with Acrylic overlay



CONFIGURATIONS / OPTIONS



Recessed



Satin White Lens



High Performance Louver



White Louver



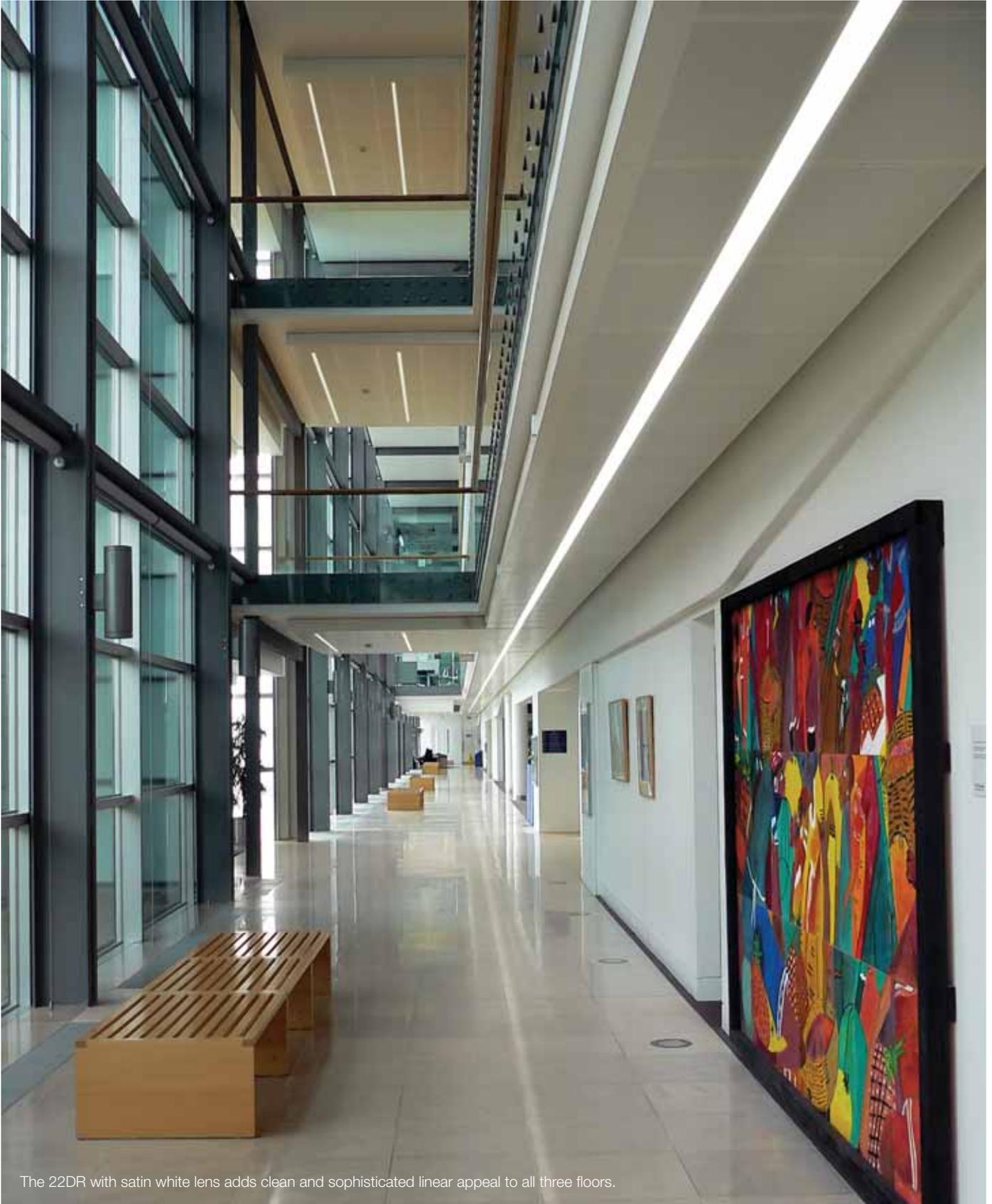
Continuous Line



Corner Unit



Direct / Indirect (top view)

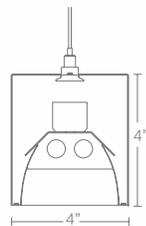


The 22DR with satin white lens adds clean and sophisticated linear appeal to all three floors.

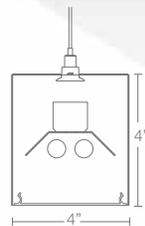
STRAIGHT & NARROW 23 SERIES

(1) or (2) LAMP T5 and T5HO or T8

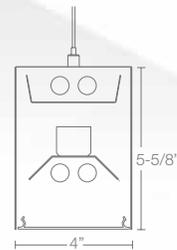
- Standard or custom fixture lengths (standard 3', 4', 6' and 8' individual lengths)
- Fits Sheet Rock, ETG and STG applications without interference
- "In Wall" for highlighting and wayfinding applications
- Continuous runs in 1' increments available (other custom lengths can be configured per application)
- Flanged or Flangeless Trim optional
- Shielding options:
 - Flush Satin Lens
 - High Performance Louver
 - White Louver
 - Louvers available with Acrylic overlay
- Regressed trim with Satin Lens provided in 3' and 4' lengths
- Continuous runs provided in 3', 4', 6' and 8' sections
- Optional 90 degree and T Corner capability
- Optional adjustable or fixed MR16 modules for highlighting applications
- Available lamp staggering:
 - 6" T5 and T5HO
 - 3" T8
- Standard finish is White (optional Silver, Black or RAL color matches available)



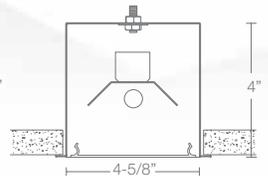
23DP with louver



23DP with lens



23DIP with lens



23DR with lens

CONFIGURATIONS / OPTIONS



Recessed



Satin White Lens



High Performance Louver



White Louver



Regressed Lens with MR16



Staggered Lamps



Continuous Line



Corner Unit



The 23DS adapts to the architecture of any ceiling layout.

STRAIGHT & NARROW 23X WALL WASH

(1) LAMP T5 and T5HO

- Provides soft and uniform ceiling to floor illumination ideal for wash applications
- 95% reflective Miro Grade material used to maximize uniform light output and eliminate unwanted spill light (see figure 1)
- Heavy Wall Matte Black Perforated Kick Shield eliminates glare for comfortable illumination (see figure 2)
- Optional adjustable or fixed MR16 modules in 3', 4' and 5' lengths for highlighting applications (see figure 3)
- Optional Baffle
- Standard or custom fixture lengths (standard 3', 4' and 5' individual lengths)
- Fits Sheet Rock, Exposed T Grid and Slot T Grid applications
- Flanged or Flangeless Trim optional

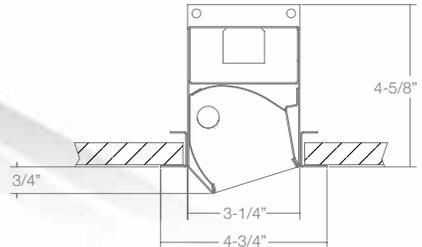


Fig. 1



Fig 2



Fig 3

One piece unit is easy to install

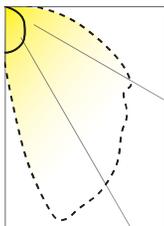
MOUNTING INFORMATION



Patent pending adjustable ceiling mounting system. Adjusts to various ceiling grid types and enables end installation precise fit for integrated ceiling appearance. Access plate and pre-wired assembly allows for easy wiring.



Recommended distance from fixture longitudinal axis and wall is 1' to 3'. Optimum performance distance is 2'. Not recommended for use outside this range. Fixture housing lengths are 3', 4' and 5' mounted individually in grid ceilings and in sheet rock. Can be mounted in continuous rows.



23X
1T5HO lamp
Efficiency 61.7%
Test#168P236

Zonal Lumen Summary			
Zone	Lumens	%Lamp	%Fixture
0-30	650	13.0	21.1
0-40	1146	22.9	37.1
0-60	2174	43.5	70.4
0-90	3068	61.4	99.4
0-180	3086	61.7	100.0
Total Luminaire Efficiency = 61.7%			

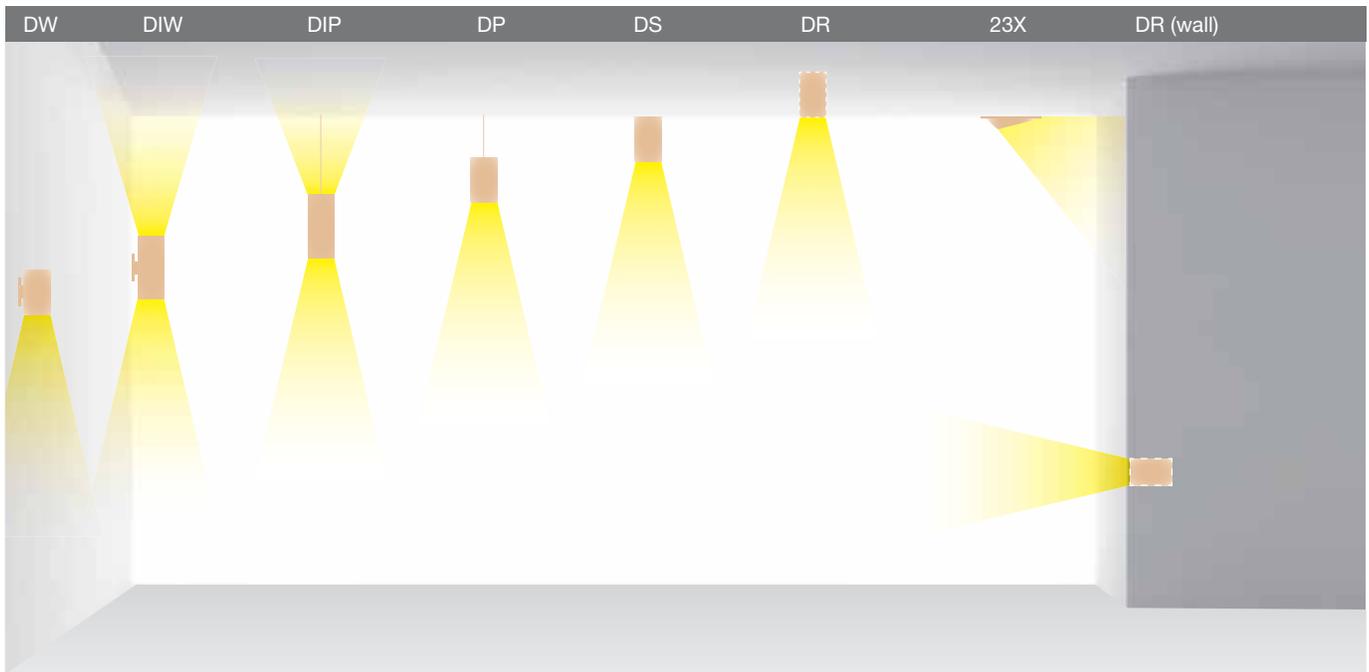
Candela Distribution								
0			45			90		
0	417	417	417	55	1344	1189	204	90
5	883	734	417	65	1143	968	132	90
15	1999	1698	403	75	746	661	63	90
25	1912	1873	374	85	419	310	9	90
35	1768	1692	330	90	222	144	2	90
45	1530	1475	272	95	46	6	2	90



The 23X highlights specific objects without disturbing surrounding aesthetics.

STRAIGHT & NARROW FEATURES

CONFIGURATIONS AT A GLANCE



GENERAL FEATURES

- Extruded aluminum housing allows for precise lengths for custom applications
- Corner assembly provides the ability to make custom configurations of your choice
- No visible hardware in suspended applications
- On Grid mounting system in 4' and 8' suspended applications with +/- 3" flexibility in mounting of canopy cables
- Rectilinear canopy cover provides matching form to luminaire
- Flanged or Flangeless trims for Drywall Ceiling systems
- Fits Grid Ceilings for Lay-in and continuous applications for ETG and STG ceiling types
- Hairline Joiner system for continuous runs provides seamless transition between luminaires

LAMP OPTIONS

- Available in T5, T5HO and T8
- Staggered one and two lamp continuous lighting system for sheetrock or lay-in ceilings with telescopic optics for virtual elimination of socket shadows
- Low glare, asymmetrical wall wash optical system for providing uniform ceiling to floor illumination
- Forward throw upper channel wall wash optics for suspended and wall mount applications (23 Series only)
- MR16 adjustable or fixed location down light for highlighting applications. (5) filter options available. Available on the 23 Series and 23X Wall Wash

SHIELDING OPTIONS

- Extruded Flush Satin Lens: smooth diffusion of lamp image with tool-less removal
- Pearlescent Knife Edge Louver: providing 50° cutoff, the louver utilizes 95% matte Miro 5 material for high efficiency, while utilizing a vertical grain orientation to disperse lamp image
- Matte White Knife Edge Louver: provides blended transition to white finished ceilings
- Regressed Lens Trim can be finished to match ceiling details. Provided in 3' and 4' units for ease of maintenance (23 Series only)

STAGGERED LAMP DESIGN



STRAIGHT & NARROW 6" staggered lamp design virtually eliminates socket shadows for T5 and T5HO lamps. Adjustable 20" strip enables continuous light to the very end of fixture.



Step 1
It all starts with the bracket.



Step 5
Attach top to lighting strip housing using screwdriver.



Step 2
Insert lighting strip housing into bracket.



Step 6
Lighting strip is ready to be lamped.



Step 3
Bend bracket tabs down to secure lighting strip housing.



Step 7
Adjust lighting strip to desired length.



Step 4
The two tabs secure lighting strip housing.



Step 8
Lighting strip adjusts up to 20".

REGRESSED LENS



The regressed insert measures 0.75" in depth. The insert has a compact volume and a surface that is uniformly lit.

MR16 CONFIGURATIONS



Adjustable with Regressed Lens



Fixed with Regressed Lens



Adjustable with Satin White Lens



Fixed with Satin White Lens



Adjustable with High Performance Louver



Fixed with High Performance Louver



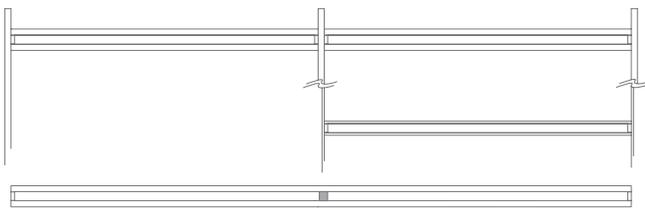
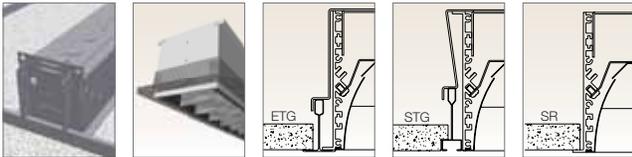
Hex Cell Prismatic Linear Spread White Red Blue

STRAIGHT & NARROW MOUNTING

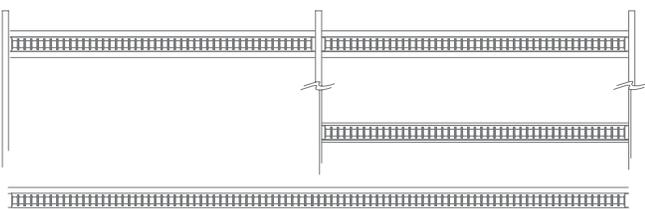
RECESSED



Patent pending adjustable ceiling mounting system. Adjusts to various ceiling grid types and enables end installation precise fit for integrated ceiling appearance. Access plate and pre-wired assembly allows for easy wiring. Recessed fixtures mount to ETG, STG and SR.



22DR Grid Mounting Options (shown with Lens)

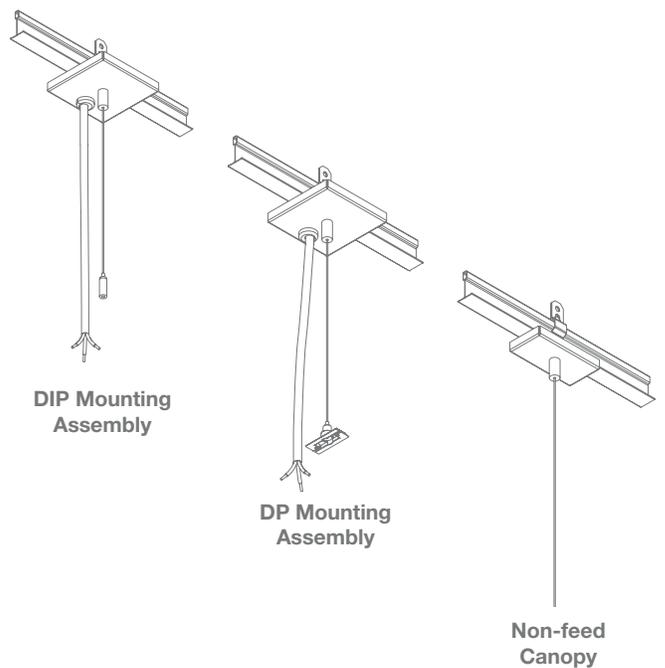


23DR Grid Mounting Options (shown with Louver)

SUSPENDED



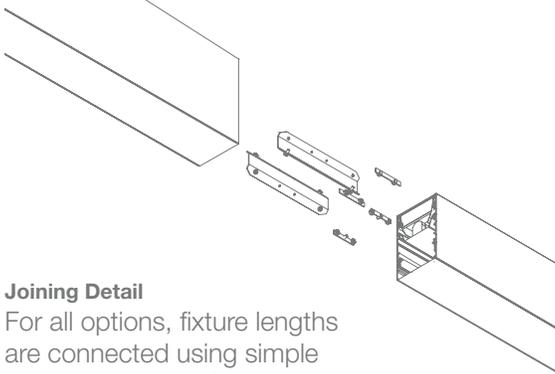
Suspended fixtures mount to desired height on a variety of ceiling types including: (ETG) 15/16" exposed T grid ceiling, (STG) 9/16" screw slot T grid ceiling, or (SR) sheet rock ceiling.



SURFACE



Surface fixtures mount to a variety of ceiling surfaces including: (ETG) 15/16" exposed T grid ceiling, (STG) 9/16" screw slot T grid ceiling, or (SR) sheet rock ceiling.



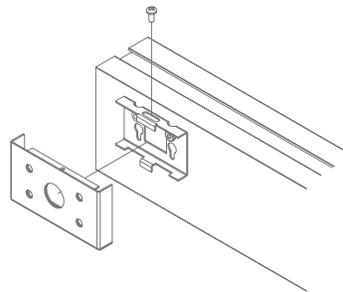
Joining Detail

For all options, fixture lengths are connected using simple internal hardware for seamless appearance.

WALL



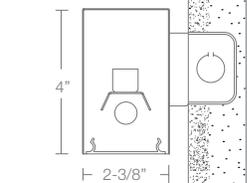
Wall fixture mounts directly to existing structure over 2" x 4" standard electrical box mounted in the wall. Blocking provided by customer/contractor.



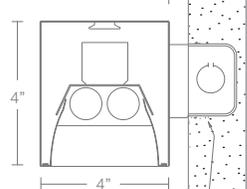
Wall Mounting Detail

Fixture connects to bracket quickly with only one screw. Electrical passes through bracket to remain hidden.

**22DW with 1T5
(ADA COMPLIANT)**



23DW with 2T8

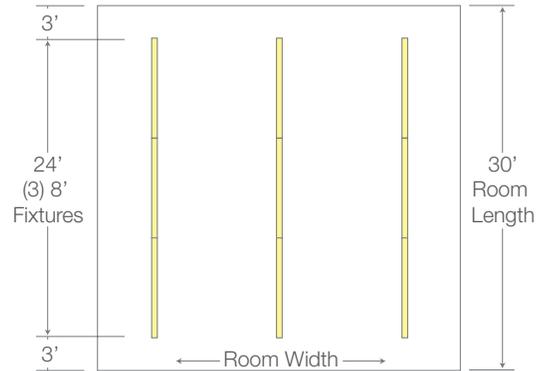


Side Mounted
Electrical Box
and Blocking
by others

STRAIGHT & NARROW APPLICATIONS

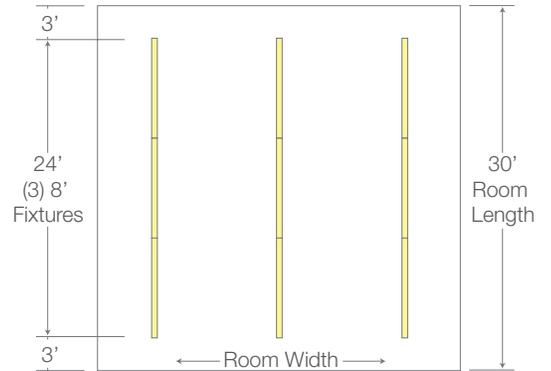
Row Spacing	Room Size	Power Density Watts / Sq. Ft.	8' Ceiling Ht. Average Footcandles	10' Ceiling Ht. Average Footcandles	12' Ceiling Ht. Average Footcandles
6' oc	18' x 30'	1.14	55.4	50.7	46.4
8' oc	24' x 30'	.83	43.3	40.1	37.0
10' oc	30' x 30'	.66	NR	33.1	30.9

22 Recessed with 1T5 lamp and High Performance Louver
[22DR-1T5-S90]



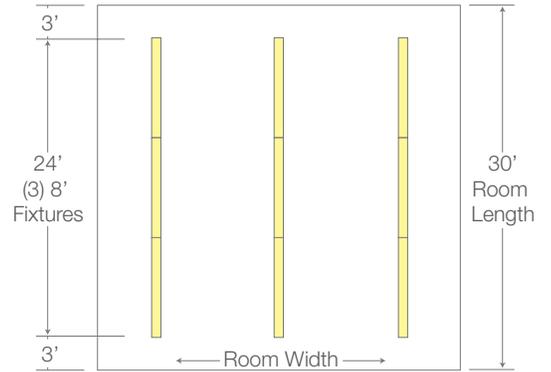
Row Spacing	Room Size	Power Density Watts / Sq. Ft.	8' Ceiling Ht. Average Footcandles	10' Ceiling Ht. Average Footcandles	12' Ceiling Ht. Average Footcandles
8' oc	24' x 30'	1.43	65.9	61.1	56.7
10' oc	30' x 30'	1.14	53.9	50.4	47.2
12' oc	36' x 30'	.95	45.7	42.9	40.4

22 Recessed with 1T5HO lamp and High Performance Louver
[22DR-1T5HO-S90]



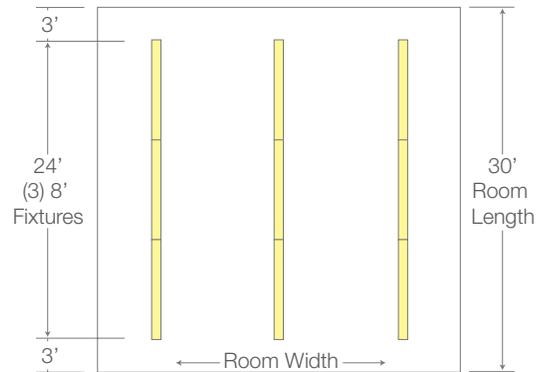
Row Spacing	Room Size	Power Density Watts / Sq. Ft.	8' Ceiling Ht. Average Footcandles	10' Ceiling Ht. Average Footcandles	12' Ceiling Ht. Average Footcandles
6' oc	18' x 30'	1.14	60	55.9	50.9
8' oc	24' x 30'	.83	47.6	43.5	40.6
10' oc	30' x 30'	.66	38.1	35.8	33.7

23 Recessed with 1T5 lamp and High Performance Louver
[23DR-1T5-S90]



Row Spacing	Room Size	Power Density Watts / Sq. Ft.	8' Ceiling Ht. Average Footcandles	10' Ceiling Ht. Average Footcandles	12' Ceiling Ht. Average Footcandles
8' oc	24' x 30'	1.43	86.0	80.2	74.1
10' oc	30' x 30'	1.14	70.3	66.1	62.2
12' oc	36' x 30'	.95	NR	56.2	53.1

23 Recessed with 1T5HO lamp and High Performance Louver
[23 DR-1T5HO-S90]





23DIP : overhead view 2x1 lamp configuration



22DR : elevator lobby



22DR : office kitchen and vending area

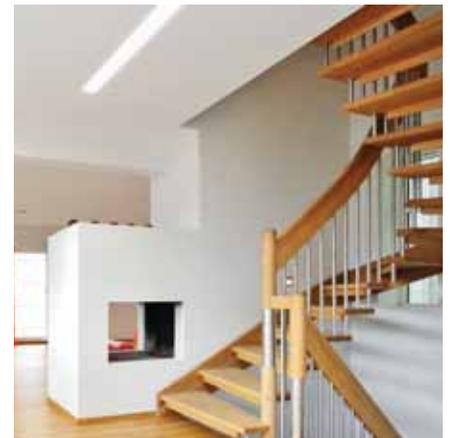
neoray™
STRAIGHT & NARROW



23DP : office corridor



Neoray's 7A is an excellent companion product.

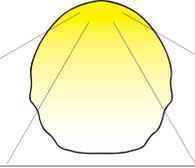
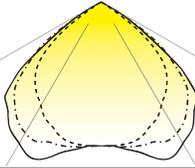
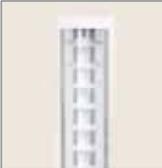
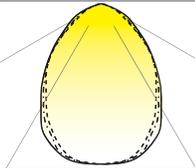


23DR : office loft environment

STRAIGHT & NARROW PHOTOMETRY

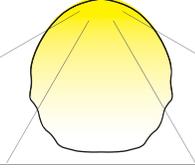
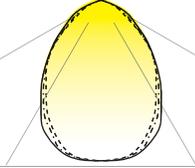
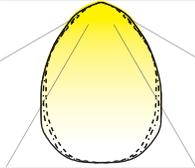
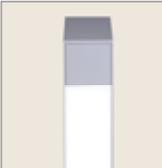
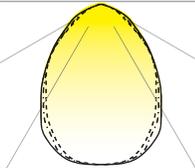
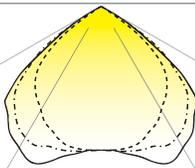
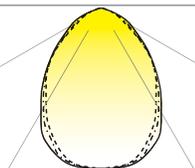


22 SERIES (Recessed) 1 T5 and T5HO

	22DR (Recessed) Satin White Lens (S92)		1T5 Lamp tested 37.0% efficiency Test# 13403
	22DR (Recessed) High Performance Louver (S91)		1T5 Lamp tested 77.0% efficiency Test# 13399
	22DR (Recessed) White Louver (S91W)		1T5 Lamp tested 60.0% efficiency Test# 13401



22 SERIES 1 T5 and T5HO

	22DP (Direct Pendant) 22DW (Wall Mount) 22DS (Surface) Satin White Lens (S92)		1T5 Lamp tested 37.0% efficiency Test# 13403
	22DP (Direct Pendant) 22DW (Wall Mount) 22DS (Surface) High Performance Louver with Acrylic Overlay (S91P)		1T5 Lamp tested 58.7% efficiency Test# 13400
	22DP (Direct Pendant) 22DW (Wall Mount) 22DS (Surface) White Louver with Acrylic Overlay (S91WP)		1T5 Lamp tested 46.2% efficiency Test# 13402
	22DP (Direct Pendant) 22DW (Wall Mount) Satin White Lens (S92)		1T5HO Lamp tested 34.3% efficiency Test# 13408
	22DP (Direct Pendant) 22DIW (Wall Mount) High Performance Louver (S91)		1T5HO Lamp tested 67.8% efficiency Test# 13404
	22DP (Direct Pendant) 22DW (Wall Mount) White Louver (S91W)		1T5HO Lamp tested 53.5% efficiency Test# 13406



	23DR (Recessed) Satin White Lens (S93)		1T5 Lamp tested 47.0% efficiency Test# 13415
--	--	--	--

	23DR (Recessed) High Performance Louver (S90)		1T5 Lamp tested 81.8% efficiency Test# 13411
--	--	--	--

	23DR (Recessed) White Louver (S90W)		1T5 Lamp tested 63.3% efficiency Test# 13412
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23 SERIES (Recessed)
1 or 2 T5, T5HO and T8



	23DP (Direct Pendant) 23DW (Wall Mount) 23DS (Surface) Satin White Lens (S93)		1T8 Lamp tested 45.8% efficiency Test# 13427
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	23DP (Direct Pendant) 23DW (Wall Mount) 23DS (Surface) High Performance Louver (S90)		1T8 Lamp tested 76.7% efficiency Test# 13423
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	23DP (Direct Pendant) 23DW (Wall Mount) 23DS (Surface) White Louver (S90W)		1T8 Lamp tested 68.7% efficiency Test# 13425
--	--	--	--

23 SERIES
1 or 2 T5, T5HO and T8

	23DP (Direct Pendant) 23DW (Wall Mount) Satin White Lens (S93)		2T5 Lamp tested 43.1% efficiency Test# 13433
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	23DP (Direct Pendant) 23DW (Wall Mount) High Performance Louver (S90)		2T5 Lamp tested 74.3% efficiency Test# 13429
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	23DP (Direct Pendant) 23DW (Wall Mount) White Louver (S90W)		2T5 Lamp tested 60.1% efficiency Test# 13431
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