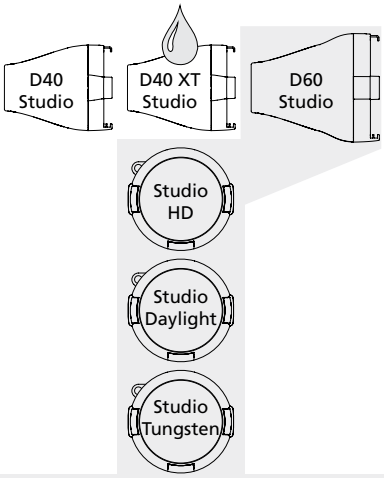
ETC®

D60 Studio

Selador Desire Series

100/240V



This data sheet covers D60 Studio fixtures as shown.
See other datasheets for other versions.

GENERAL INFORMATION

ETC's Desire Series D60 Studio luminaire family uses the newest technology in high-output white light LEDs to create an ideal fixture for video, film and other 'white light only' applications. Three different LED options give the user a choice for just the right white light output for the job. The D60 Studio offers a rugged die-cast enclosure, quiet, fan-cooled operation, multiple lens options and advanced user interface. The user interface enables easy configuration and specific features for video and film professionals. The fixture can be configured to operate under control of a studio lighting control desk or via stand-alone 'no console required' settings for location lighting.

D60 Studio LED array options

D60 Studio luminaires offer three different LED array choices based on specific white light functions. The D60 Studio is available with any one of the following arrays (not interchangeable) to best suit the intended application.

- *D60 Studio HD* – Combines warm white and cool white LEDs for variable colour temperature mixing. Added to this are five carefully chosen LED colours from the Selador x7 Color System to fill in the white LED spectral gaps. D60 Studio HD provides the richest variable white light possible in an LED fixture available today
- *D60 Studio Daylight* – Studio Daylight contains sixty 5600K LEDs for high-intensity, non-variable cool white output
- *D60 Studio Tungsten* – Studio Tungsten contains sixty 3000K LEDs for high-intensity, non-variable warm-white output

ORDERING INFORMATION

Desire D60 Studio

PART NO.	DESCRIPTION
7410A1602-0X	D60 Studio HD wash luminaire, Black
7410A1602-1X	D60 Studio HD wash luminaire, White
7410A1602-5X	D60 Studio HD wash luminaire, Silver Grey
7410A1607-0X	D60 Studio Daylight wash luminaire, Black
7410A1607-1X	D60 Studio Daylight wash luminaire, White
7410A1607-5X	D60 Studio Daylight wash luminaire, Silver Grey
7410A1606-0X	D60 Studio Tungsten wash luminaire, Black
7410A1606-1X	D60 Studio Tungsten wash luminaire, White
7410A1606-5X	D60 Studio Tungsten wash luminaire, Silver Grey

Note: D60 Studio luminaires ship with hanging yoke, 25° secondary lens and 1.5m PowerCon to bare ends power cable

SPECIFICATIONS

GENERAL
- 60 LED variable white light wash fixture
- CE compliant, ETL listed to UL1573 – the standard for stage and studio lighting units
- IP20-rated for indoor use
- Power and DMX in/through connections for easy setup
- User-friendly control interface with multiple modes and fixture settings

PHYSICAL
- Rugged die-cast all-metal housing
- Easy access slots for secondary lenses and accessories
- Uses 225mm lenses and accessories
- Available in black (standard), white, silver grey or custom colours
- Hanging yoke standard. Optional yoke/floor stand available

ELECTRICAL
- 100VAC to 240VAC 50/60 Hz universal power input Max. power consumption 161W 0.7A at 230V
- Neutrik power in and through connections
- Up to 9 fixtures may be linked via power in/thru connectors per 15A circuit using 1.0mm2 cables as supplied
- Requires power from a non-dim source

LED*
- 50,000 hour LED life (50,000 hours to 70% intensity)
- 60 Luxeon® Rebel 2.5W LED emitters
- Studio Daylight and Studio Tungsten use Rebel ES white light emitters for higher output

* See additional LED notes on page three

COLOUR
- Studio HD array use warm and cool white light emitters with additional deep colour emitters
- Studio HD produces variable white light with broad spectrum richness
- Studio HD beautifully illuminates skin tones and other objects for natural appearance and high colour rendering
- Studio Tungsten™ and Studio Daylight™ exclusive optional red-shift option emulates tungsten dimming performance characteristics

OPTICAL
- Primary field angle of 17°
- Secondary lenses available for multiple beam spread options
- Fixtures ship with a 25° lens; additional lenses must be ordered separately
- Refer to accessories for lenses available

CONTROL
- DMX512 in and through via five-pin XLR connectors
- Multiple control options including RBG (Studio HD only) strobe and console-free Master/Slave mode
- See DMX Control Table for additional information
- 15-bit virtual dimming engine provides smooth, high quality theatrical fades
- RDM functionality for address and setting changes.

THERMAL
- Ambient operating temperature of -20° to +40°C
- Active electronic thermal management for droop-free operation
- Low-noise fan cooling
- Fixture is designed for continuous operation up to 40°C ambient temperature and requires free flow of air around fixture housing

ADDITIONAL ORDERING INFORMATION

Power and control cables

PART NO.	DESCRIPTION
7401B7008	1.5m PowerCon to bare-end power input cable 3x1mm2 (Spare)
7410K1101	1m PowerCon to bare-end power through cable 3x1mm2
7410K1102	1m PowerCon to PowerCon power through cable 3x1mm2
7410K1103	2m PowerCon to PowerCon power through cable 3x1mm2
7410K1104	5m PowerCon to PowerCon power through cable 3x1mm2
7410K1105	1m PowerCon/DMX to PowerCon/DMX power through cable 3x1mm2
7410K1106	2m PowerCon/DMX to PowerCon/DMX power through cable 3x1mm2
7410K1107	5m PowerCon/DMX to PowerCon/DMX power through cable 3x1mm2

Fixtures Accessories

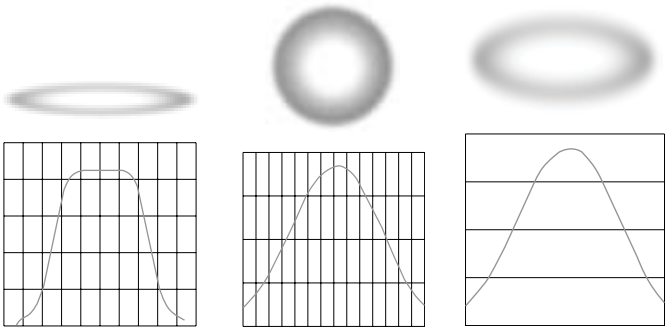
PART NO.	DESCRIPTION
7410K1022	D60 Floor Stand Yoke, Combo, Black
7410K1023	D60 Floor Stand Yoke, Combo, White
7410K1024	D60 Floor Stand Yoke, Combo, Silver Grey
PSF1099	D60 Barn Door, Black (Use only as a flexible top hat to diminish aperture glare. Not for beam shaping)
7410A3040	D60 Colour Frame, Black (for use with round and oblong lenses)
PSF1100	D60 Egg Crate Louvre, Black
PSF1097	D60 Top Hat w. 76mm Tube, Black
PSF1096	D60 Top Hat w. 152mm Tube, Black
PSF1098	D60 Half Hat w. 152mm Tube, Black

ADDITIONAL ORDERING INFORMATION

Secondary Lens Option

DESCRIPTION: The following lenses are cut for D60 fixtures and create round, linear or oblong (oval) field patterns as described below. These lenses are not for use in Selador® classic (Vivid, Lustr®, Paletta, etc.) fixtures. Supplied in frame (round and oval only)	
PART NO.	**DESCRIPTION**
Narrow Linear Field	
Linear lenses (same material as used with Selador Classic). May be combined to create desired field size, i.e. 40° X 60°	
7410K1032	Ø225mm 20° lens (narrow linear field)
7410K1033	Ø225mm 30° lens (narrow linear field)
7410K1034	Ø225mm 40° lens (narrow linear field)
7410K1035	Ø225mm 60° lens (narrow linear field)
7410K1036	Ø225mm 80° lens (narrow linear field)
Round Field	
7410K1025	222x222mm 25° lens (round field)
7410K1026	222x222mm 35° lens (round field)
7410K1027	222x222mm 45° lens (round field)
7410K1028	222x222mm 75° lens (round field)
Oval Field	
7410K1029	Ø222mm 20° x 40° lens (oval field)
7410K1030	Ø222mm 30° x 70° lens (oval field)
7410K1031	Ø222mm 35° x 80° lens (oval field)

Typical Lens Field Profiles



Narrow Linear | Round | Oblong

Power Consumption at Full Intensity

MODEL	VOLTAGE (V)	CURRENT (A)	WATTS
D60 Studio	230	0.7	161

NOTES ABOUT LED LUMINAIRES

Colour Rendering Index (CRI)
The previous colour rendition method developed at the time when fluorescent light sources was introduced. Generally not applicaple to LED light sources.

Colour Quality Scale (CQS)
A new colour rendition method developed by NIST (The National Institute of Standards and Technology) in the US. Developed to better account for LED specifics

CRI AND CQS RATINGS

Desire fixtures were evaluated for CRI and CQS performance using measured output spectrum and optimized mix solutions for a best spectral match to black body sources at 3200K and 5600K.

Fixture	CRI	CQS	Color Fidelity	Duv
D60 Vivid™ at 3200K	87	89	89	0.000
D60 Vivid at 5600K	90	92	92	0.000
D60 Lustr+™ at 3200K	86	88	88	0.000
D60 Lustr+ at 5600K	93	92	92	0.000
D60 Studio HD™ at 3200K	89	90	91	0.000
D60 Studio HD at 5600K	92	94	94	0.000
D60 Studio Daylight™ at 5600K	71	70	69	0.001
D60 Studio Tungsten™ at 3000K	86	86	86	0.001

All D60 Studio luminaire versions provide excellent colour rendering to the eye, particularly at higher colour temperature settings such as 5600K. In most cases the Duv is 0.000. A Duv rating of 0.000 indicates that the colour mix used is exactly on the black body line, with no green or magenta tint.

Notes to Videographers:

- All Desire fixtures use Luxeon Rebel ES emitters specified by the strictest binning standards. However, on-camera LED response varies with different cameras and settings. Daylight LEDs can appear slightly greener than other 5600K sources on camera.
- Fixtures with non-variable single-colour daylight arrays such as Studio Daylight may use standard colour corrrection filters (Rosco 3314, Rosco 3316 or similar) to achieve the desired on-camera result.
- Camera tests using your specific set up are recommended to determine the best configuration.

Typical LED source characteristics
All LED sources experience some lessening of light output and some colour shift over time. LED output will vary with thermal conditions. Based on the LED manufacturer's B50 L70 specification, a Selador luminaire will achieve ~70% of its initial output after 50,000 hours of typical usage. In individual situations, LEDs will be used for different durations and at different levels. This can eventually lead to minor alterations in colour performance, necessitating slight adjustment to presets, cues or programs.

CONTROL OPTIONS

Studio HD

User settings on D60 Studio fixtures allow multiple operational modes and settings for either console operation via DMX protocol or stand-alone operation. The expanded LCD display provides easy navigation to all possible settings and options. Some of the setting options are:

- Multiple DMX choices ranging from a simple RGB profile – which effectively controls all seven LED colours via three channels – to nine-channel direct colour and intensity control
- Multiple dimming curve options
- Preset colours and effects for stand-alone (no console required) operation
- White point selection – white light and colour behavior based on a specific colour temperature white light, i.e. 3200K, 5600K, etc.
- Loss of data behavior options – instant off, hold last look for two minutes, etc.
- Output modes – three output options that offer the user a choice between maximum output and maximum consistency

*See the User Manual for a complete explanation of all of the control settings and options for the D60 Studio.

Quick Set-Ups

To assist in managing the numerous control and fixture behavior choices, five combinations of operational settings are available to quickly get started. These settings are specifically created for different use situations and are easily accessible at the fixture display. Each setting can then be modified as required to take advantage of all of the possible control features.

Setting Title	Profile	Description	Typical Features*
Studio	Studio	Studio Factory Default: Enables three parameter control of white light (intensity, white point, and tint) via DMX from console or from fixture display – no console required	• Linear dimming curve • Regulated output for colour consistency
General	Direct	For general purpose use including interior architectural applications	• Standard dimming curve • Regulated output for colour consistency • 3200K white point setting
Stage	HSI Plus 7 Enabled	Theatrical lighting: Duplicates the colour and dimming behavior of tungsten stage lighting luminaires.	• Incandescent dimming curve • Regulated output for colour consistency • 3200K white point setting
XT Arch	HSI	Exterior Architectural lighting: Provides a high degree of colour consistency in high ambient temperature environments.	• Standard dimming curve • Protected output • 3200 white point setting
High Impact	RGB	Event lighting: Enables quickest response, simple RGB control and strobe channel for maximum effect usage	• Quick dimming curve • Boost mode for maximum intensity • 5600K white point setting

*See user manual for complete list of features for each Quick Set-Up

CONTROL OPTIONS

Studio HD

DMX Input Channel Profiles

DMX Profile	DMX Channels	Channel Assignments	Notes
The Studio HD colour array is designed for white light use. RGB, HSI, and HSIC profiles will operate as described but will produce a limited intensity and gamut of deep colours.			
Studio	6 (Ch. 4 not used)	1 – Intensity 2 – Colour Point (CRT) 3 – Tint 4 – n/a 5 – Strobe 6 – Fan Control	Controls fixture as a white light unit. If no DMX, i.e. console input, is present, fixture can be adjusted for these three parameters on the U/I at the back of the unit.
Direct	10	1 – Red 2 – Orange (white if Lustr+) 3 – Amber 4 – Green 5 – 3000K White 6 – 5700K White 7 – Indigo 8 – Intensity 9 – Strobe 10 – Fan Control	Direct control of each individual colour with a separate master intensity channel. Colour calibration of LEDs is not active in this mode. The ten-channel profile will produce the highest quality colour cross-fades.
HSI	6	1 – Hue (coarse) 2 – Hue (fine) 3 – Saturation 4 – Intensity 5 – Strobe 6 – Fan Control	High resolution hue (two-channels), saturation, and intensity control. HSI mode will produce colour cross-fades around the colour space.
HSIC	7	1 – Hue (coarse) 2 – Hue (fine) 3 – Saturation 4 – Intensity 5 – Strobe 6 – Fan Control 7 – Colour Point (CCT)	High-resolution hue, saturation and intensity control as above, with the addition of a colour point channel to adjust the colour temperature of the fixture in both white light and colour. Colour cross-fade performance is the same as HSI.
RGB	6 (Ch. 4 not used)	1 – Red 2 – Green 3 – Blue 4 – n/a 5 – Strobe 6 – Fan Control	Effectively addresses all seven colours via three channels of control. RGB profile will produce medium quality colour cross-fades
Additional profile options			
Plus 7		Seven additional colour control channels are available in RGB, HSI, and HSIC, and Studio profile settings. For example HSI with 'Plus 7' enabled becomes a 15-channel profile:	
		1 – Hue (coarse) 2 – Hue (fine) 3 – Saturation 4 – Intensity 5 – Strobe 6 – Fan Control 7 – n/a 8 – Plus Seven Control (on/off) 9 – Red 10 – Orange (white if Lustr+) 11 – Amber 12 – Green 13 – Cyan 14 – Blue 15 – Indigo	The desired colour and intensity is achieved by using the HSI or RGB channels Placing channel 7 at a value over 51% gives the fixture a 15-channel profile. Channels 9-15 represent the native colours of the fixture and allow the operator to adjust individual colour channels to fine tune the colour output.
Strobe		Variable strobe control: 0% is no strobe. The fixture output will strobe more rapidly as the strobe channel value approaches 100%.	

CONTROL OPTIONS

Studio Daylight and Studio Tungsten (only)

Quick Set-Ups

Setting Title	Profile	Description	Typical Features
Studio	Studio	Enables control of intensity from luminaire U/I; no console required	• Linear dimming curve • Regulated output for intensity stability
Single Channel	Direct	For general purpose architectural use	• Standard dimming curve • Regulated output for colour consistency
Stage	Direct	Matches conventional luminaire performance	• Incandescent dimming curve • Regulated output

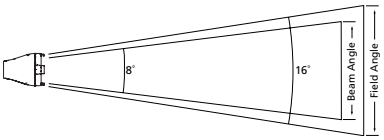
DMX Input Channel Profiles

DMX Profile	DMX Channels	Channel Assignments	Notes
Studio	3	1 – Intensity 2 – Strobe 3 – Fan Control (D60 only)	Control of parameters is also enabled from the luminaire's user interface. No console required.
Direct	3	1 – Intensity 2 – Strobe 3 – Fan Control (D60 only)	

PHOTOMETRICS

D60 Studio HD™

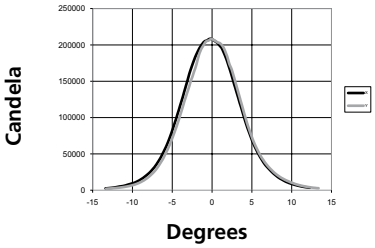
Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Boost - Cold	16˚	222,200	4,920	2,530	33.4
Regulated	16˚	208,500	4,610	2,380	33.7



Throw Distance (d)	3.0m	4.6m	6.1m	7.6m
Field Diameter	0.9m	1.3m	1.7m	2.1m
Illuminance (fc)	2,222	988	556	356
Illuminance (lux)	23,917	10,630	5,979	3,827

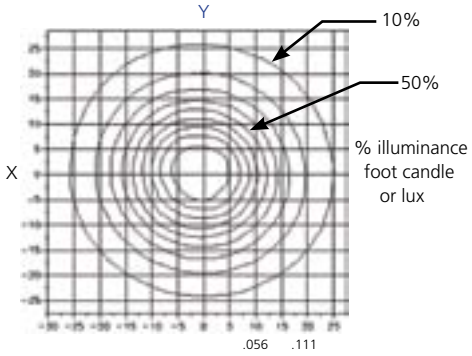
Conversions: For Feet multiply meters by 3.2808
For Footcandles divide Lux by 10.76
For Field diameter at any distance, multiply distance by .281
For Beam diameter at any distance, multiply distance by .142

Cosine Candela Plot



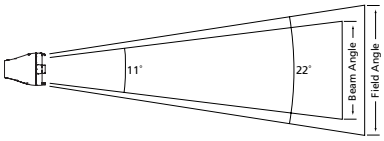
Iso-Illuminance Diagram

(Flat Surface Distribution)



D60 Studio Daylight™

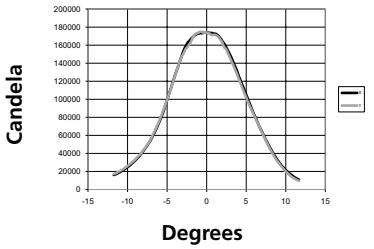
Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Boost - Cold	22˚	189,500	7,880	4,100	55.3
Regulated	22˚	174,800	7,290	3,800	54.8



Throw Distance (d)	3m	4.6m	6.1m	7.6m
Field Diameter	1.2m	1.8m	2.4m	2.9m
Illuminance (fc)	1,895	842	474	303
Illuminance (lux)	20,398	9,066	5,099	3,264

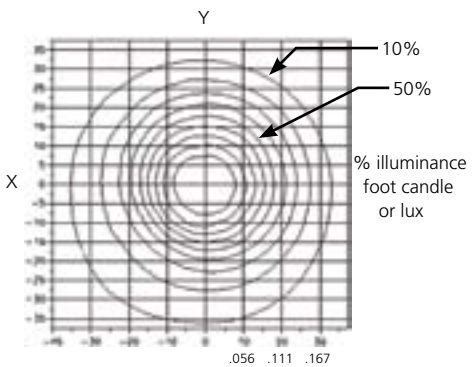
Conversions: For Feet multiply meters by 3.2808
For Footcandles divide Lux by 10.76
For Field diameter at any distance, multiply distance by .387
For Beam diameter at any distance, multiply distance by .194

Cosine Candela Plot



Iso-Illuminance Diagram

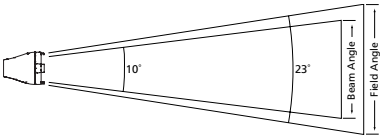
(Flat Surface Distribution)



PHOTOMETRICS

D60 Studio Tungsten

Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Boost - Cold	23˚	139,545	6,158	2,850	43.2
Regulated	23˚	119,580	5,271	2,430	39.6



Throw Distance (d)	3.0m	4.6m	6.1m	7.6m
Field Diameter	1.3m	1.9m	2.5m	3.2m
Illuminance (fc)	1,395	620	349	223
Illuminance (lux)	15,020	6,676	3,755	2,403

Conversions: For Feet multiply meters by 3.2808
For Footcandles divide Lux by 10.76
For Field diameter at any distance, multiply distance by .414.
For Beam diameter at any distance, multiply distance by .189.

*** Throw Distance Multiplier (TDM)

To determine the distance from the center of the beam (Origin) to a certain illuminance level at a particular distance, multiply the desired throw distance by the TDM desired on the Iso-Illuminance diagram.

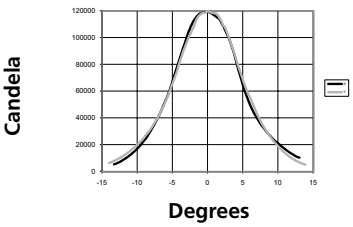
Throw Distance (TD) x Throw Distance Multiplier (TDM) = Distance from the Origin (DfO) (distance from the center of the beam)

Example: 10m (TD) x 0.047 (TDM) = 0.470m from center of beam (DfO)

For illumination with any lamp, multiply the candlepower of a beam spread by the multiplying factor (mf) shown for that lamp.

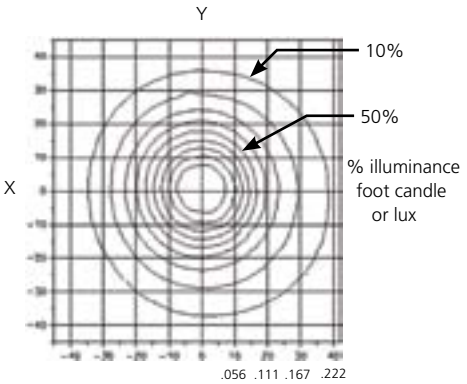
To determine illumination in footcandles or lux at any throw distance, divide candlepower by distance squared.

Cosine Candela Plot



Iso-Illuminance Diagram

(Flat Surface Distribution)



D60 ACOUSTICAL INFORMATION

FIXTURE	SPEED	SOUND PRESSURE LEVEL*
(Background noise level in test chamber)	N/A	18.3 dBA
Selador Classic	Single fan speed	28.1 dBA
Desire D60	30%	25.0 dBA
	51%	37.4 dBA
	60%	38.6 dBA
	100%	43.1 dBA

* Average of readings from 4 sides of fixture

The fan in all D60 fixtures is thermostatically controlled to run as needed.

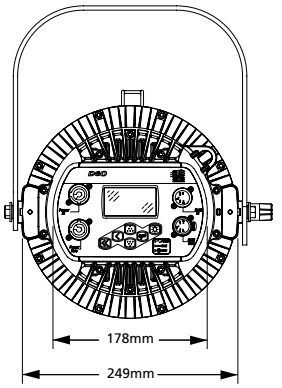
- In regulated mode, fan speed in colour-mixing fixtures (Vivid, Lustr+, etc.) will typically not rise above 30% when at full intensity in normal room teperature.
- 60% fan speed may be noted in Studio Daylight and Studio Tungsten fixtures at high intensities at room temperature.

PHYSICAL

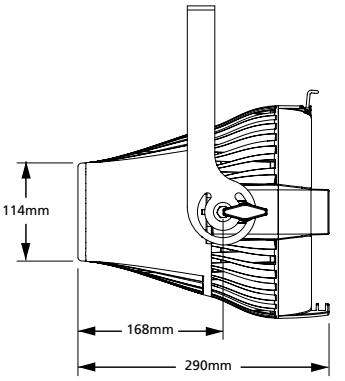
Selador D60 Studio Weights and Dimensions

WEIGHT*	SHIPPING WEIGHT
kgs 8.7	kgs 9.7

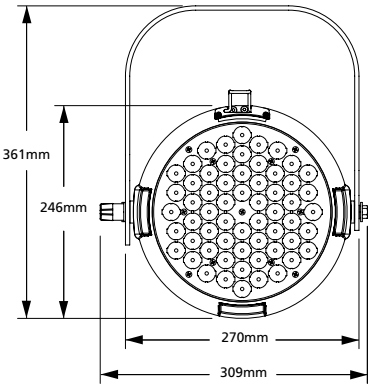
* Does not include mounting hardware



REAR VIEW



SIDE VIEW



FRONT VIEW

AVAILABLE FROM

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