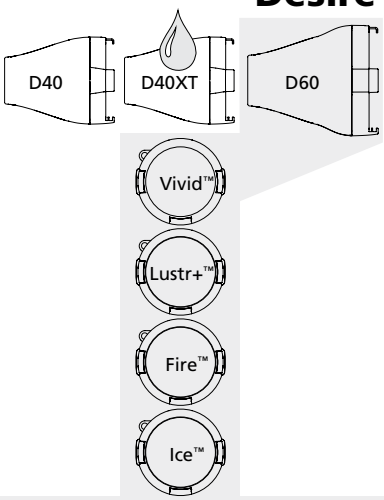
ETC®

D60™

Desire™ Series

100/240V



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

GENERAL INFORMATION

ETC's Desire Series D60 luminaire family uses the patended x7 color system to provide high-brightness, 60-emitter, round theatrical wash lights. Highly efficient primary lenses and careful colour choices make the D60 fixture ideal for stage, studio and anywhere strong colour and high-intensity are requirements. The Selador x7 Color System™ produces the widest range of spectrally-balanced saturated and tinted colour choices available. D60's rugged die-cast enclosure, quiet, fan-cooled operation, multiple lens options and advanced user interface make it ideal for multiple applications.

D60 LED Array Options

D60 luminaires uses seven different LED colours to achieve true, usable broad-spectrum colour. The D60 luminaire is available with any one of the following x7 color arrays (not interchangeable) to best suit the intended application.

- D60 Vivid™ – the x7 Color System array balanced for best all-round use as a color-changing wash fixture
- D60 Lustr+™ – optimised array with six colours plus high-intensity white LEDs to create an ideal front light wash fixture for full range colour, with an emphasis on lighter colours and white
- D60 Ice™ – uses the cool colours of the x7 System to provide extra-high brightness color in the blue end of the spectrum
- D60 Fire™ – uses the warm colours of the x7 System to provide extra-high brightness colour in the red end of the spectrum

ORDERING INFORMATION

Selador D60

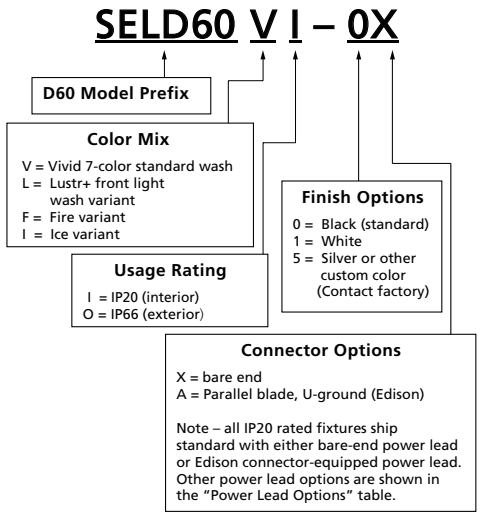
PART NO	DESCRIPTION
7410A1601-0X	D60 Vivid wash luminaire, Black
7410A1605-0X	D60 Lustr+ wash luminaire, Black

Note: D60 luminaires ship with hanging yoke, Very Narrow secondary lens and 1.5m PowerCon to bare ends power cable .

Other D60 Versions

7410A1603-0X	D60 Fire wash luminaire, Black
7410A1604-0X	D60 Ice wash luminaire, Black

Note: For coloured luminaires, use -1X for white and -5X for Silver Grey. Custom colours available on request.



SPECIFICATIONS

GENERAL

- 60 LED colour mixing wash fixture
- CE compliant and ETL listed to UL 1573 lighting units
- IP20-rated for indoor use
- Power and DMX in/thru 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 or silver grey. Custom colours available on request
- Hanging yoke standard. Optional yoke/floor stand available

ELECTRICAL

- 100VAC to 240VAC 50/60 Hz universal power input
- Neutrik power in and thru connections
- Up to 9 fixtures may be linked via power in/thru connectors per 15A circuit using 1mm² 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 LED 2.5W emitters

*See additional LED notes on page three

COLOUR

- Exclusive *x7 Color System*™ seven-colour LED array
- Beautifully illuminates skin tones and other objects for natural appearance and high colour rendering
- Broad spectrum colour interacts seamlessly with conventional sources
- Exclusive optional red-shift option emulates tungsten dimming performance

OPTICAL

- Primary field angle of 17° and beam angle of 8°
- Secondary lenses available for multiple beam spread options
- Each fixture ships with a Very Narrow lens; additional lenses must be ordered separately
- Refer to accessories for lenses available

CONTROL

- DMX512 in and thru via five-pin XLR connectors
- Multiple control options including RGB, 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 and minimises colour shift during dimming
- 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 thru cable 3x1mm²
7410K1102	1m PowerCon to PowerCon power trough cable 3x1mm²
7410K1103	2m PowerCon to PowerCon power trough cable 3x1mm²
7410K1104	5m PowerCon to PowerCon power trough cable 3x1mm²
7410K1105	1m PowerCon/DMX to PowerCon/DMX power trough cable 3x1mm²
7410K1106	2m PowerCon/DMX to PowerCon/DMX power trough cable 3x1mm²
7410K1107	5m PowerCon/DMX to PowerCon/DMX power trough cable 3x1mm²

Fixtures Accessories

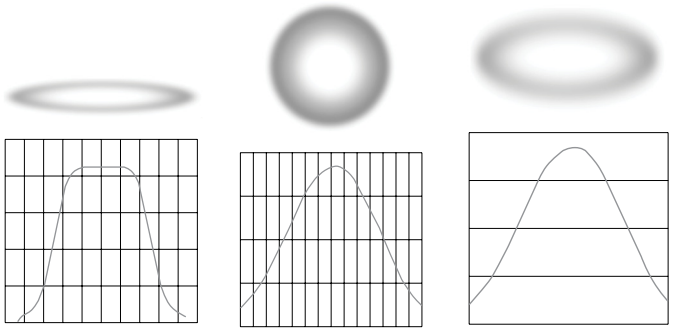
PART NO	DESCRIPTION
7410K1022	D60 Floor Stand Yoke, Combo, Black
PSF1099	D60 Barn door (Use only as a flexible top hat to diminish aperture glare. Not for beam shaping)
7410A3040	D60 Colour Frame, Black
PSF1100	D60 Egg Crate Louvre, Black
PSF1097	D60 Top Hat w. 76mmTube, Black
PSF1096	D60 Top Hat w. 152mm Tube, Black
PSF1098	D60 Half Hat w. 152mm Tube, Black

ADDITIONAL ORDERING INFORMATION

Secondary Lens Options

DESCRIPTION: The following lenses are cut for D60 fixtures and create round, linear or oblong field patterns as described below. These lenses are not for use in Selador® Classic (Vivid™, Lustr®, Paletta™, etc.) fixtures. Round and Oval lenses are supplied in frame.	
PART NO	**DESCRIPTION**
Narrow Linear Field	
Linear, rotation lenses (Same material as used with Selador Classic). May be combined to create desired field size.	
7410K1032	Ø225mm Very narrow lens (linear field)
7410K1033	Ø225mm Narrow lens (linear field))
7410K1034	Ø225mm Medium lens (linear field)
7410K1035	Ø225mm Wide lens (linear field)
7410K1036	Ø225mm Extra Wide lens (linear field)
Round Field	
7410K1025	222x222mm Very narrow lens (round field)
7410K1026	222x222mm Narrow lens (round field)
7410K1027	222x222mm Medium lens (round field)
7410K1028	222x222mm Wide lens (round field)
7410K1040	222x222mm Extra wide lens (round field)
Oblong Field	
7410K1029	Ø222mm Narrow lens (oblong field)
7410K1030	Ø222mm Medium lens (oblong field)
7410K1031	Ø222mm Wide lens (oblong field)

Typical Lens Field Profiles



Narrow Linear Round Oblong

Power Consumption at Full Intensity

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

NOTES ABOUT LED LUMINAIRES

Colour Rendering Index (CRI)
The previous colour rendition method developed at the time when fl uorescent 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	63	0.001
D60 Studio Tungsten™ at 3000k	86	86	86	0.001

All D60 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.
- 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

User settings on D60 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 colors 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.

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*
General	Direct	Factory Default: For general purpose use including interior architectural applications	• Standard dimming curve • Regulated output for colour consistency
Stage	HSI Plus 7 Enabled	Theatrical lighting: Duplicates the colour and dimming behavior of tungsten stage lighting fixtures	• 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 envionments	• 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
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 mode for color consistency

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

CONTROL OPTIONS

DMX Input Channel Profiles

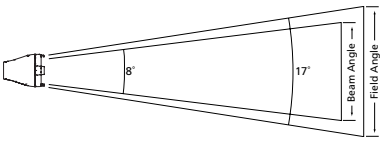
DMX Profile	DMX Channels	Channel Assignments	Notes
Direct	10	1 – Red 2 – Orange (white if Lustr+) 3 – Amber 4 – Green 5 – Cyan 6 – Blue 7 – Indigo 8 – Intensity 9 – Strobe 10 – Fan Control	Direct control of each individual colour with a separate master intensity channel. Colour calibration of LEDs is 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 arbitrary 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
Studio	6 (Ch. 4 not used)	1 – Intensity 2 – Colour Point (CCT) 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.
Additional profile options			
Plus 7		Seven additional color control channels are available in RGB, HSI, and HSIC input 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 – Plus7 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 seven 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%.	

PHOTOMETRICS

D60 Vivid™

Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Boost - cold	17˚	161,700	3,920	1,960	28.8
Regulated	17˚	136,300	3,280	1,640	28.3

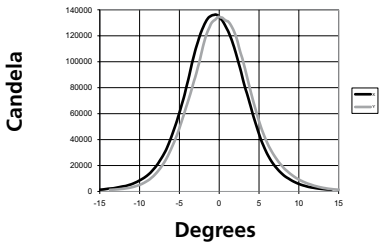
Metric Conversions: For meters, multiply feet by 0.3048
For lux, multiply footcandles by 10.76



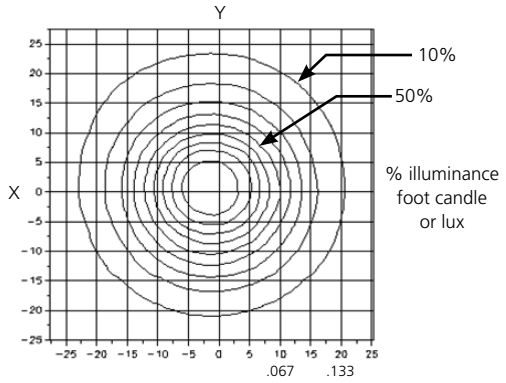
Throw Distance (d)	3m	4.6m	6.1m	7.6m
Field Diameter	.9m	1.4m	1.8m	2.3m
Illuminance (fc)	1,617	719	404	259
Illuminance (lux)	17,405	7,736	4,351	2,785

For field diameter at any distance, multiply distance by 0.295
For beam diameter at any distance, multiply by 0.145

Cosine Candela Plot



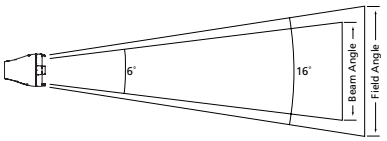
Iso-Illuminance Diagram
(Flat Surface Distribution)



D60 Lustr+™

Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Boost - cold	16˚	196,100	4,830	2,590	33.3
Regulated	16˚	182,800	4,320	2,270	32.7

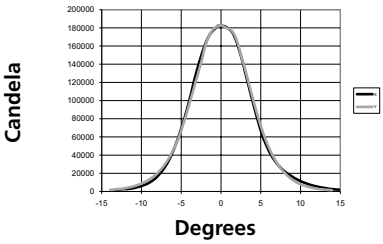
Metric Conversions: For meters, multiply feet by 0.3048
For lux, multiply footcandles by 10.76



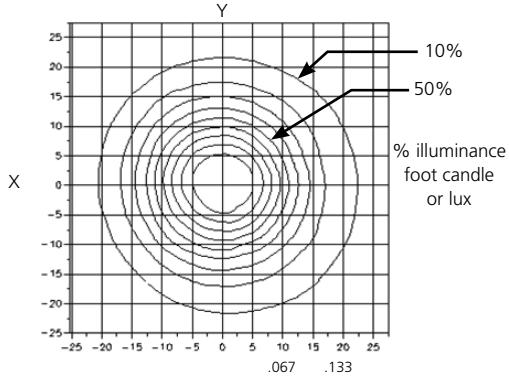
Throw Distance (d)	3m	4.6m	6.1m	7.6m
Field Diameter	.9m	1.3m	1.8m	2.2m
Illuminance (fc)	1,828	812	457	292
Illuminance (lux)	19,676	8,745	4,919	3,148

For field diameter at any distance, multiply distance by 0.288
For beam diameter at any distance, multiply by 0.112

Cosine Candela Plot



Iso-Illuminance Diagram
(Flat Surface Distribution)

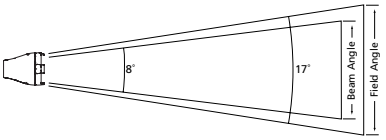


PHOTOMETRICS

D60 Fire™

Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Boost - cold	17˚	170,100	4,180	2,040	33.6
Regulated	17˚	128,500	3,140	1.540	32.0

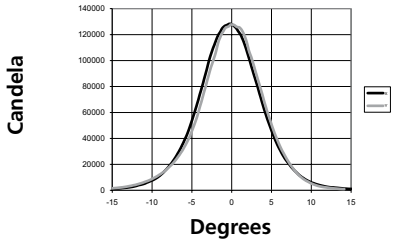
Metric Conversions: For meters, multiply feet by 0.3048
For lux, multiply footcandles by 10.76



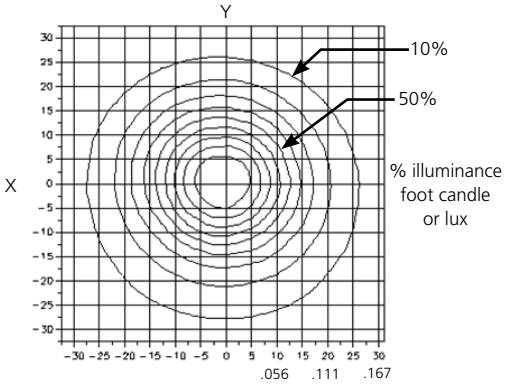
Throw Distance (d)	3m	4.6m	6.1m	7.6m
Field Diameter	.9m	1.4m	1.8m	2.3m
Illuminance (fc)	1,701	756	425	272
Illuminance (lux)	18,309	8,138	4,577	2,930

For field diameter at any distance, multiply distance by 0.301
For beam diameter at any distance, multiply by 0.144

Cosine Candela Plot



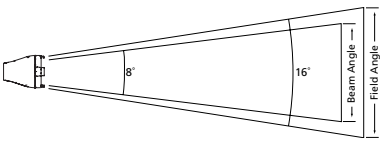
Iso-Illuminance Diagram
(Flat Surface Distribution)



D60 Ice™

Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Boost - cold	16˚	128,400	2,890	1,550	19.5
Regulated	16˚	121,800	2,700	1,440	19.1

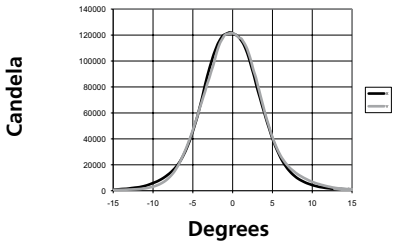
Metric Conversions: For meters, multiply feet by 0.3048
For lux, multiply footcandles by 10.76



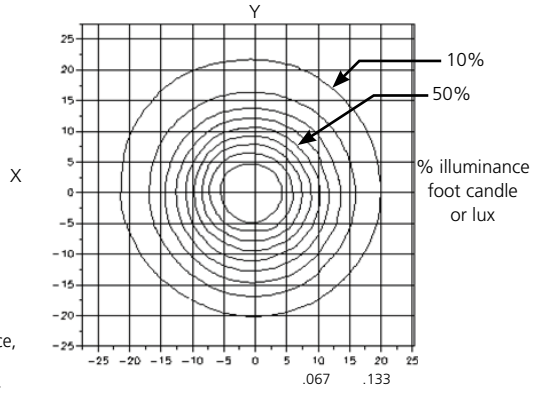
Throw Distance (d)	3m	4.6m	6.1m	7.6m
Field Diameter	.8m	1.3m	1.7m	2.1m
Illuminance (fc)	1,284	571	321	205
Illuminance (lux)	13,821	6,143	3,455	2,211

For field diameter at any distance, multiply distance by 0.278
For beam diameter at any distance, multiply by 0.142

Cosine Candela Plot



Iso-Illuminance Diagram
(Flat Surface Distribution)



*** 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: 25 feet (TD) x 0.047 (TDM) = 1.175 feet 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.

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.

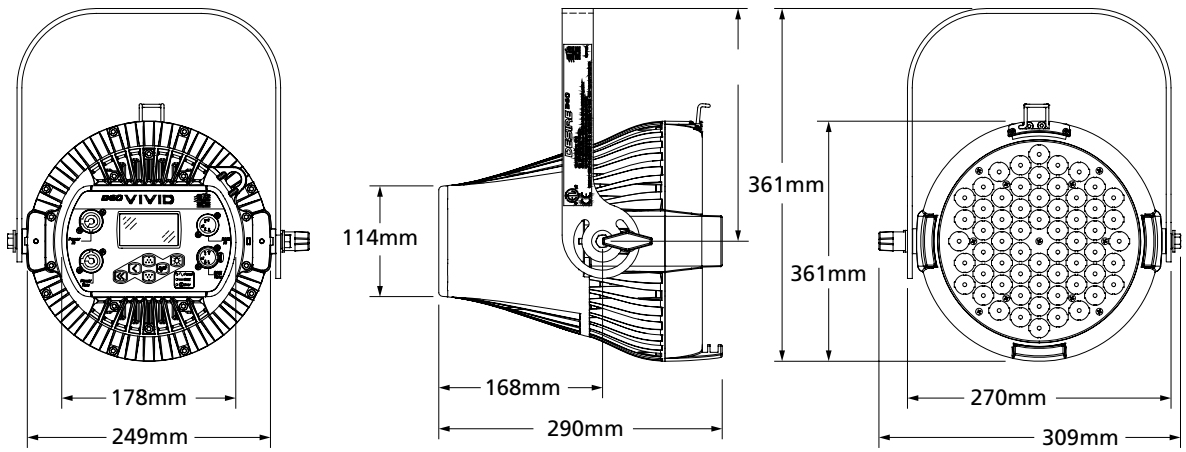
- In regulated mode, fan speed in colour-mixing fixtures (Vivid™, Lustr+™, etc.) will typically not rise above 30% when at full intensity in normal room teperature.
- 60% fan speed may be noted in Studio Daylight™ and Studio Tungsten™ fixtures at high intensities at room temperature.

PHYSICAL

Selador D60 Weights and Dimensions

WEIGHT*	SHIPPING WEIGHT
8.7 kgs	9.7 kgs

* Does not include mounting hardware



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