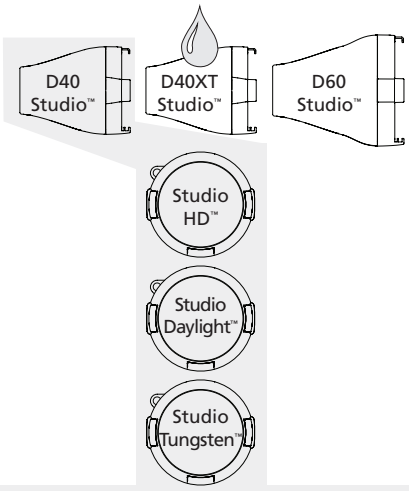
ETC®

D40 Studio™

Selador Desire™ Series

100/240V



This datasheet covers D40 Studio fixtures as shown.
See other datasheets for other versions.

GENERAL INFORMATION

ETC's Desire Series D40 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 D40 Studio offers a rugged die-cast enclosure, noiseless fan-free 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 in stand-alone 'no console required' settings for location lighting.

D40 STUDIO LED ARRAY OPTIONS

D40 Studio luminaires offer three different LED array choices based on warm white and cool white Rebel LEDs. Equip a D40 Studio fixture with any one of the following arrays to best suit the intended application.

- *D40 Studio HD* – Combines an equal number of warm white and cool white LEDs for variable colour temperature mixing. Added to this are five additional carefully-chosen LED colours from the Selador x7 Color System to fill in the white LED spectral gaps. D40 Studio HD provides the richest variable white light possible in any LED fixture on the market today.

- *D40 Studio Daylight* – Contains forty 5600K LEDs for high-intensity, non-variable cool white output.

- *D40 Studio Tungsten* – Contains forty 3000K LEDs for high-intensity, non-variable warm white output

ORDERING INFORMATION

Desire CE D40 Studio

PART NO.	DESCRIPTION
7410A1402-0X	D40 Studio HD wash luminaire, Black
7410A1402-1X	D40 Studio HD wash luminaire, White
7410A1402-5X	D40 Studio HD wash luminaire, Silver Grey
7410A1407-0X	D40 Studio Daylight wash luminaire, Black 5700K non adjustable
7410A1407-1X	D40 Studio Daylight wash luminaire, White 5700K non adjustable
7410A1407-5X	D40 Studio Daylight wash luminaire, Silver Grey 5700K non adjustable
7410A1406-0X	D40 Studio Tungsten wash fixture, Black 3000K non adjustable
7410A1406-1X	D40 Studio Tungsten wash fixture, White 3000K non adjustable
7410A1406-5X	D40 Studio Tungsten wash fixture, Silver Grey 3000K non adjustable

Note: D40 Studio luminaires ship with hanging yoke, 25° secondary lens and 1.5m PowerCon to bare ends power cable.

SPECIFICATIONS

GENERAL

- 40 LED variable white light wash fixture
- IP20-rated for indoor use
- CE compliant, UL and cUL Listed
- 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 standard 190mm PAR accessories
- Available in black, white, silver grey or custom colours
- Hanging yoke is standard. Optional yoke/floor stand available

ELECTRICAL

- 100VAC to 240VAC 50/60 Hz universal power input
  Max. power consumption 110W 0.48A at 230V
- Neutrik power in and thru connections
- Up to 10 fixtures may be linked via power in/thru connectors per 15A circuit using 1.0mm^2 cables as supplied
- Requires power from a non-dim source

LED*

- 50,000 hour LED life (50,000 hours to 70% intensity)
- 40 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 uses 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
- Each luminaire ships with a 25° (7410K1010) round 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
- RDM functionality for address and setting changes.

THERMAL

- Ambient operating temperature of -20° to +40°C
- Active electronic thermal management for droop-free operation
- Convection cooled for use in acoustically sensitive installations
- Fixture is designed for continuous operation up to +40°C ambient temperature and requires free airflow around fixture housing

ADDITIONAL ORDERING INFORMATION

Power Through jumper cables

Note: Connect to fixture's output (thru) connector to provide link to successive fixtures.

PART NO.	DESCRIPTION
7401B7008	1.5m PowerCon™ to bare-end power input cable 3x1mm^2 (Spare)
7410K1101	1m PowerCon™ to owerCon™ power thru cable 3x1mm^2
7410K1102	2m PowerCon™ to PowerCon™ fixture to fixture jumper cable 3x1mm^2
7410K1103	5m PowerCon™ to PowerCon™ fixture to fixture jumper cable 3x1mm^2
7410K1103	1m fixture to fixture twin jumper cable with both power and DMX connectors
7410K1103	2m fixture to fixture twin jumper cable with both power and DMX connectors
7410K1103	5m fixture to fixture twin jumper cable with both power and DMX connectors

Accessories

PART NO.	DESCRIPTION:
7410K1003	D40 Floorstanding Yoke Combo, Black
7410K1004	D40 Floorstanding Yoke, Combo, White
7410K1005	Floorstanding Yoke, Combo, Silver Grey
PSF1095	Barn door, Short, Black*
7061A3007	Colour Frame, Black**
7061A3007-1	Colour Frame, White**
PSF1028	Egg Crate Louvre, Black
PSF1022	Top Hat with 76mm Tube, Black
PSF1022-1	Top Hat with 76mm Tube, White
PSF1023	Top Hat with 153mm Tube, Black
PSF1023-1	Top Hat with 153mm Tube, White
PSF1027	Half Hat with 153mm Tube, Black
PSF1027-1	Half Hat with 153mm Tube, Black

*Use as a (flexible) top hat to diminish aperture glare. Not suitable for beam shaping.

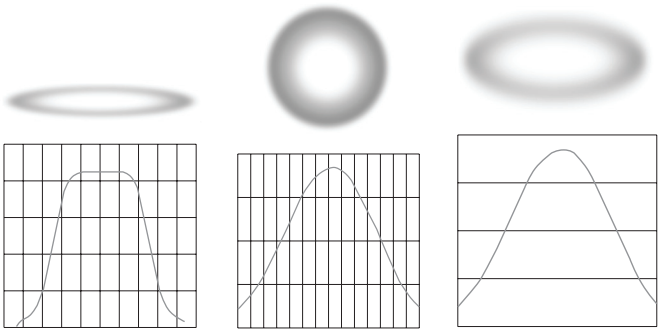
**For use with optional diffusion media

ADDITIONAL ORDERING INFORMATION

Secondary Lens Options

DESCRIPTION: The following lenses are cut for D40 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. Supplied in frame.	
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°	
7410K1017	Ø190mm 20° lens (narrow linear field)
7410K1018	Ø190mm 30° lens (narrow linear field)
7410K1019	Ø190mm 40° lens (narrow linear field
7410K1020	Ø190mm 60° lens (narrow linear field)
7410K1021	Ø190mm 80° lens (narrow linear field)
Round Field	
7410K1010	190x190mm 25° lens (round field)
7410K1011	190x190mm 35° lens (round field)
7410K1012	190x190mm 45° lens (round field)
7410K1013	190x190mm 75° lens (round field)
Oval Field	
7410K1014	Ø190mm 20° x 40° lens (oval field)
7410K1015	Ø190mm 30° x 70° lens (oval field)
7410K1016	Ø190mm 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
SelD40 or SelD40X	230V	0.48	110

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 applicable 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
D40 Vivid™ at 3200K	87	89	89	0.000
D40 Vivid at 5600K	90	92	92	0.000
D40 Lustr+™ at 3200K	86	88	88	0.000
D40 Lustr+ at 5600K	93	92	90	0.000
D40 Studio HD™ at 3200K	89	90	91	0.000
D40 Studio HD at 5600K	92	94	94	0.000
D40 Studio Daylight™ at 5600K	71	70	69	0.001
D40 Studio Tungsten™ at 3000K	86	86	86	0.001

All D40 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. With typical usage, a Selador luminaire will still achieve 70% of its initial output after 50,000 hours. 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 D40 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 user control of maximum output versus maximum colour consistency

See the user manual for a complete explanation of all of the control settings and options for the D40.

Quick Setups

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 applications 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 • 3200K white point setting
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 • Red shift enabled • 3250K 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
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 • Red shift disabled • 5600K white point setting
Studio	Studio	Video/film lighting: Enables three parameter control of white light via DMX from console or from fixture display – no console required	• Linear dimming curve • Regulated output mode for colour consistency

*See user manual for complete list of features for each Quick Setup

CONTROL OPTIONS

DMX Input Channel Profiles

DMX Profile	DMX Channels	Channel Assignments	Notes
RGB	5 (Ch. 4 not used)	1 – Red 2 – Green 3 – Blue 4 – n/a 5 - Strobe	Effectively addresses all seven colours via three channels of control. RGB profile will produce medium quality colour cross-fades
Direct Ctrl	9	1 – Red 2 – Orange (white if Lustr+) 3 – Amber 4 – Green 5 – 3000K white 6 – 5700K white 7 – Indigo 8 – Intensity 9 – Strobe	Direct control of each individual colour with a separate master intensity channel. Colour calibration of LEDs is not active in this mode. The nine-channel profile will produce the highest quality colour cross-fades.
HSI	5	1 – Hue (coarse) 2 – Hue (fine) 3 – Saturation 4 – Intensity 5 – Strobe	High resolution hue (two-channels), saturation, and intensity control. HSI mode will produce arbitrary colour cross-fades around the colour space.
HSIC	6	1 – Hue (coarse) 2 – Hue (fine) 3 – Saturation 4 – Intensity 5 – Strobe 6 – Color 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 EHSI.
Studio	3	1 – Intensity 2 – Color Point (CCT) 3 – Tint	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 colour control channels are available in RGB, HSI, HSIC and Studio input profile settings. For example HSI with 'Plus 7' enabled becomes a 14-channel profile:	
		1 – Hue (coarse) 2 – Hue (fine) 3 – Saturation 4 – Intensity 5 – Strobe 6 – n/a 7 – Plus Seven Control on/off 8 – Red 9 – Orange (white if Lustr+) 10 – Amber 11 – Green 12 – Cyan 13 – Blue 14 – 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 14-channel profile. Channels 8-14 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
Single Channel	Direct	For general purpose architectural use	• Standard dimming curve • Regulated output for consistency
Stage	Direct	Matches conventional luminaire performance	• Incandescent dimming curve • Regulated output
Studio	Studio	Enables control of intensity from luminaire U/I; no console required	• Linear dimming curve • Regulated output for intensity stability

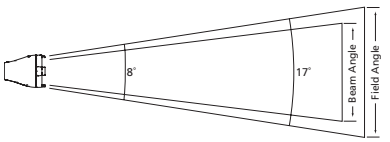
DMX Input Channel Profiles

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

PHOTOMETRICS

D40 Studio HD™

Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Boost - Cold	17˚	121,900	3,120	1,410	30.9
Regulated	17˚	109,500	2,780	1,260	30.9

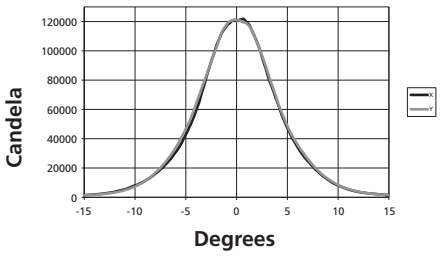


Throw Distance (d)	3.0m	4.6m	6.1m	7.6m	106m
Field Diameter	1.0m	1.4m	1.8m	2.4m	–
Illuminance (fc)	1,219	542	305	195	1
Illuminance (lux)	13,121	5,832	3,280	2,099	10.76

Conversions: For Feet, multiply meters by 3.2808
For footcandles divide lux by 10.76
For Field diameter at any distance, multiply distance by 0.310
For Beam diameter at any distance, multiply distance by 0.143

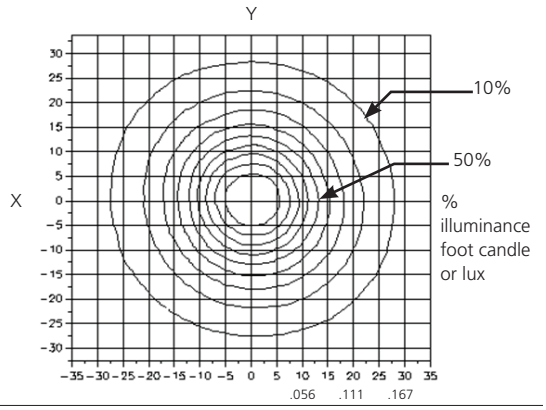
Colour Temperature	CQS	CRI
3200K	90	89
5600K	94	92

Cosine Candela Plot



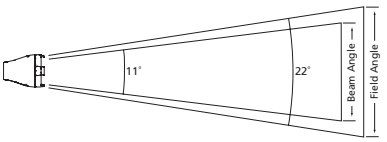
Iso-Illuminance Diagram

(Flat Surface Distribution)



D40 Studio Daylight™

Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Boost - Cold	22˚	125,700	5,380	2,850	52.5
Regulated	22˚	125,350	3,440	1,820	56.3

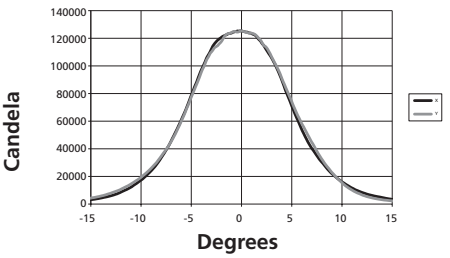


Throw Distance (d)	10′ 3.0m	15′ 4.6m	20′ 6.1m	25′ 7.6m	354′ 108.1m
Field Diameter	3.9′ 1.2m	5.8′ 1.8m	7.8′ 2.4m	9.7′ 3.0m	–
Illuminance (fc)	1,257	559	314	201	1
Illuminance (lux)	13,530	6,013	3,389	2,165	10.76

Conversions: For Meters multiply feet by .3048
For Lux multiply footcandles by 10.76
For field diameter at any distance, multiply distancey .390
For beam diameter at any distance, multiply by 0.198

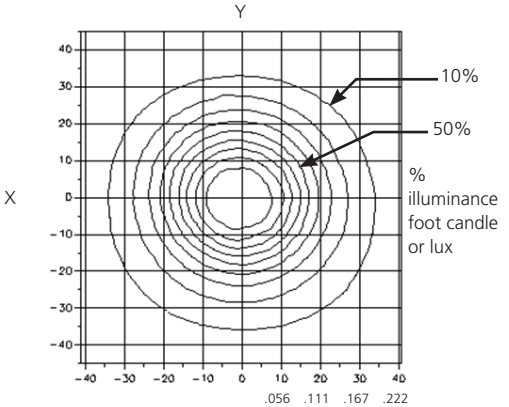
Colour Temperature	CQS	CRI
5600K	70	71

Cosine Candela Plot



Iso-Illuminance Diagram

(Flat Surface Distribution)

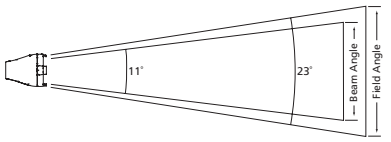


PHOTOMETRICS

D40 Studio Tungsten™

Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Boost - Cold	23˚	9,030	4,105	1,900	40.0
Regulated	23	79,720	3,514	1,620	36.9

Metric Conversions: For Meters multiply feet by .3048
For Lux multiply footcandles by 10.76

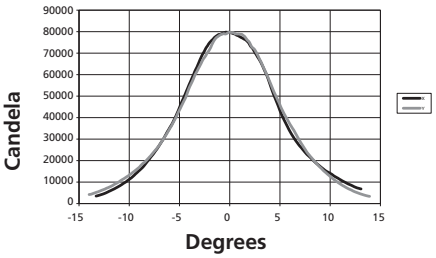


Throw Distance (d)	10′ 3.0m	15′ 4.6m	20′ 6.1m	25′ 7.6m	305′ 93m
Field Diameter	4.1′ 1.3m	6.2′ 1.9m	8.3′ 2.5m	10.4′ 3.2m	–
Illuminance (fc)	930	413	233	149	1
Illuminance (lux)	10,014	4,451	2,503	1,602	10.76

Conversions: For Meters multiply feet by .3048
For Lux multiply footcandles by 10.76
For field diameter at any distance, multiply distance by .414
For beam diameter at any distance, multiply by 0.189

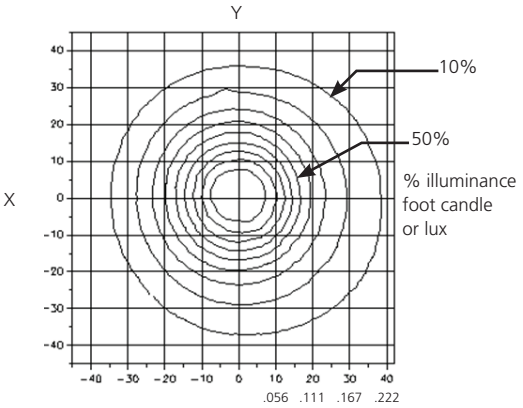
Colour Temperature	CQS	CRI
3000K	86	86

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: 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.

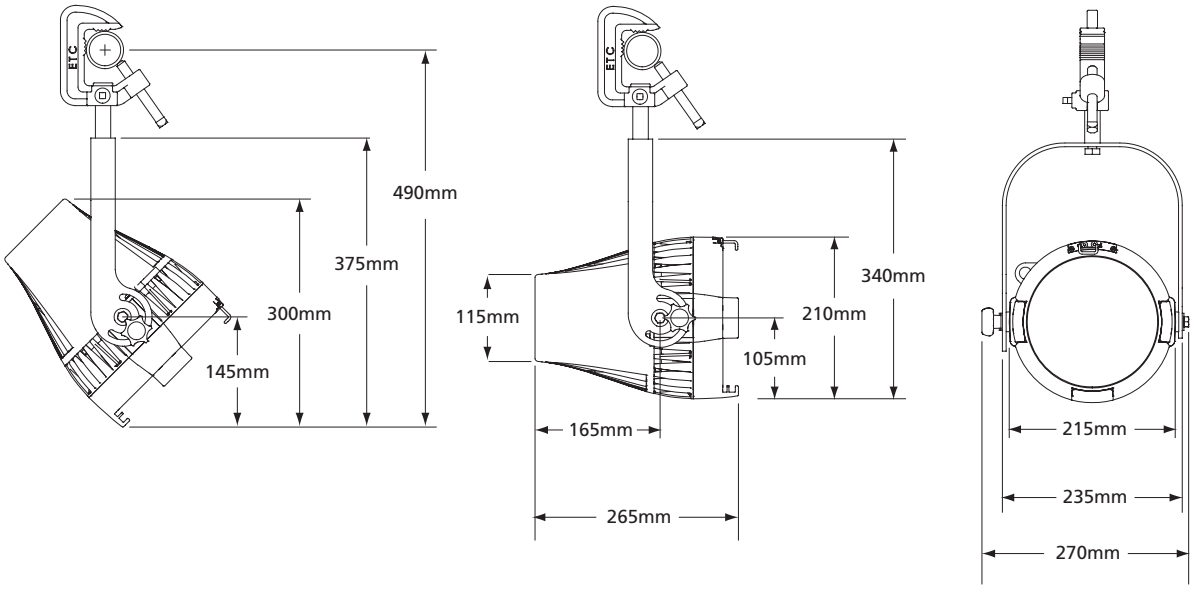
To determine illumination in lux or footcandles at any throw distance, divide candlepower by distance squared.

PHYSICAL

Selador D40 Weights and Dimensions

WEIGHT*	SHIPPING WEIGHT
Kg	Kg
6.4	7.8

* Does not include mounting hardware



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