ETC

ColorSource Linear Pearl

ColorSource Series

Type(s)

Project

Date

Notes

GENERAL INFORMATION

ColorSource Linear Pearl is a variable white-light LED wash fixture that utilizes a mix of two different white LEDs—a mix that lets you set the color temperature anywhere between 2700 K and 6500 K. The Pearl array provides the same high quality construction and great feature set as its full color siblings, including an impressively bright output and simple user interface.

Designed for installations that depend heavily on white light such as studios, houses of worship, and architectural installations, this array features flicker-free operation and a smooth dimming curve.

APPLICATIONS

- Theatres and performance spaces
- Houses of worship
- Universities and schools
- Studios
- Hospitality
- Retail
- Exhibition centers
- Meeting rooms

PRODUCT FEATURES

- Available in three lengths
  - Linear 1 (0.5 meters) - one cell of control
  - Linear 2 (1 meter) - two cells of control
  - Linear 4 (2 meters) - four cells of control
- 2700 K to 6500 K variable white light
- Homogenized optics
- Simple user interface with seven-segment display
- powerCON® in and thru power connections
- DMX in and thru (5-pin XLR)
- RDM or local configuration
- LED droop compensation for consistent output
- Optically calibrated
- Tour-ready, aluminum housing

ORDERING INFORMATION

ColorSource Linear Pearl

MODEL	DESCRIPTION	ETL PART NUMBER	CE PART NUMBER	
CSLINEARPRL1	ColorSource Linear Pearl 1	7414A1060	7414A1260	
CSLINEARPRL2	ColorSource Linear Pearl 2	7414A1061	7414A1261	
CSLINEARPRL4	ColorSource Linear Pearl 4	7414A1062	7414A1262	

Color Options: Fixtures ship standard in black. For additional colors please use the following color code suffix: -1 for white, -5 for silver or -8 for custom.

Notes: ColorSource Linear Pearl luminaires ship with a pair of trunnions and a power cable with connector of choice. C-clamps are not included.
See Power Input Cables on page 6 for connector options.

PRODUCT SPECIFICATIONS

Source

LED details	40 / 80 / 160 Lumileds LUXEON® Z LEDs
Max lumens	5,649 (per segment)
Lumens per watt	50
L70 rating (hours to 70% output)*	>60, 000 hours

Color

Colors used	Warm white, cool white
Color temperature range	2700–6500 K
Calibrated array	Yes
Red shift	No

Optical

Beam angle range	15 degrees (Secondary lenses available for multiple beam-spread options, see page 6)
Gate size	N/A
Aperture size	N/A
Pattern projection	No
Pattern size	N/A
Camera flicker control/ Hz range	1,200 Hz (default) and 25,000 Hz (via RDM)

Control

Input method	DMX-512 via 5-pin XLR connector
Protocols	DMX, RDM
Modes (footprint)	3 modes, see page 7
RDM configuration	Yes
UI type	7-segment address display and buttons
Local control	Yes
Onboard presets	Yes (12)
Onboard sequences	No
Onboard effects	No
Fixture to fixture control	Yes
Notes	Local level control via UI

*Note about LED luminaire lifetime: ETC utilizes a nationally recognized 3rd party lab for luminaire testing according to IES LM-84. See etcconnect.com/About/News/ETC-Fixture-Ratings-and-Warranties-Extended.aspx.

All LED sources experience some lessening of light output and some color shift over time. LED output will vary with thermal conditions. In individual situations, LEDs will be used for different durations and levels. This can eventually lead to minor alterations in color performance, necessitating slight adjustments to presets, cues or programs.

Electrical

Voltage range	100V-240 VAC, 50/60 Hz
Input method	powerCON in and thru
Inrush	35 A / 35.6 A / 67.5 A (first half-cycle) at 120 V 49 A / 85.6 A / 153 A (first half-cycle) at 240 V
Fixtures per circuit*	10 Cells (20 A switched circuit, R20 module or similar)
Wattage (typical / standby)	(1) 113 W / 1.5 W, (2) 219 W / 3 W, (4) 444 W / 5.3 W at 120 V (1) 112 W / 2.6 W, (2) 214 W / 2.6 W, (4) 431 W / 4.7 W at 240 V
Current draw	0.95 A / 1.83 A / 3.74 A at 120 V 0.50 A / 1.00 A / 1.90 A at 240 V

*Note: All measurements are for 120 V, 60 Hz. Results may vary in different regions.

Thermal

Ambient operating temperature	0—40° C (32—104° F)
Fan (controllable)	Yes (no)
Droop compensation	Yes
dB range	24.2 / 28.4 / 31 dBa average at 1 m
BTUs/hour	385 / 747 / 1,514

Physical

Materials	Die-cast aluminum
Color options	Black, white, silver or custom color
Mounting options	Yoke (1 cell, optional) or floor trunnions
IP rating	IP20
Weight	2.90 kg (6.40 lb) / 9.12 kg (20.10 lb) / 17.01 kg (37.50 lb)
Included accessories	Trunnions, power cable
Notes	See accessories list for power cable options

Warranty

Full fixture	5 years
LED array	10 years

Regulatory and Compliance

| Approved regulatory standards	cETLus Listed Conforms to UL 1573 Listed Conforms to UL 924 Listed Certified to CSA C22.2 No. 166 Listed Certified to CSA C22.2 No. 141 Listed CE Compliant EAC Compliant

PRODUCT FEATURES

ENDLESS LIGHT
ColorSource Linear Pearl fixtures are designed to mount end-to-end without gaps in light for a smooth, linear wash.
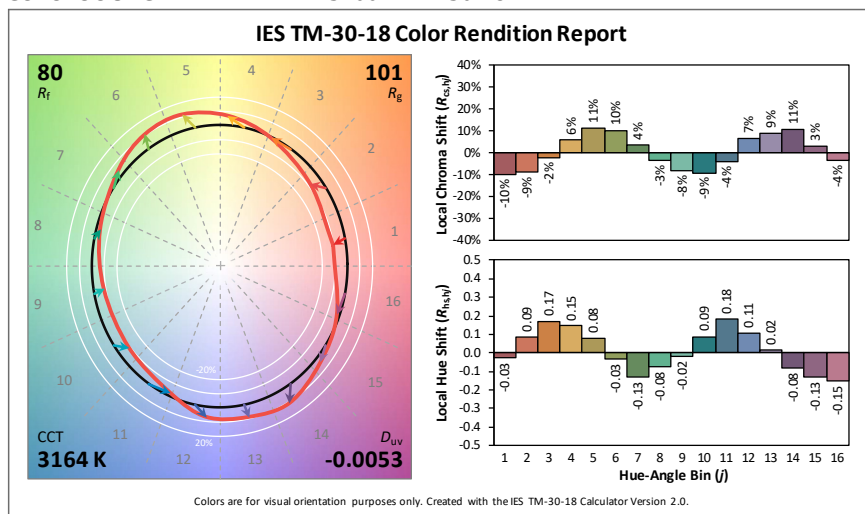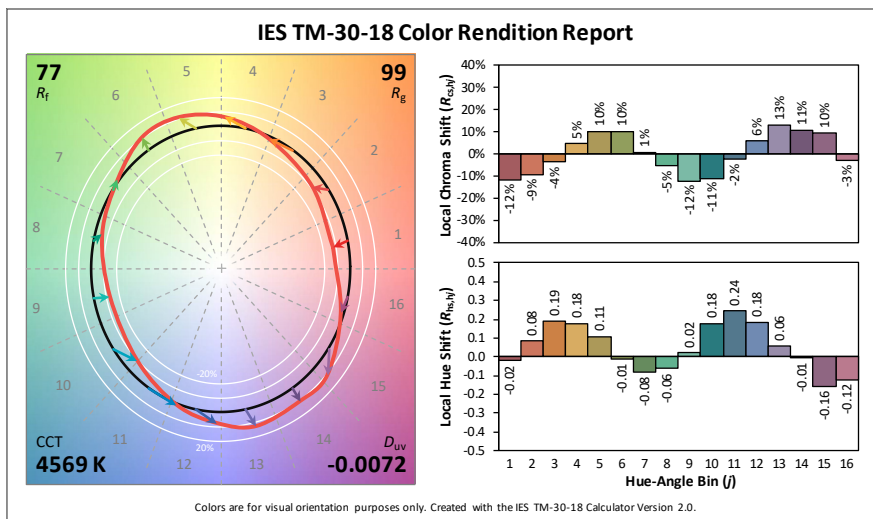
Seamless beam of light

WARM TO COOL
Fixtures provide a full range of bright white light from 2700 K to 6500 K.

2700 K → 6500 K
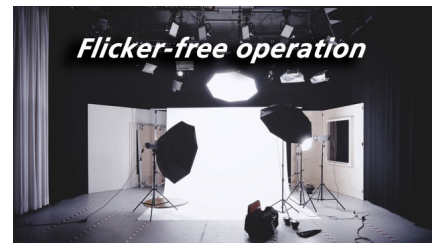
GREAT FOR STUDIOS
With refresh rates up to 25,000 Hz, there is no need to worry about flicker on camera.

Flicker-free operation

COLOR METRIC INFORMATION

COLORSOURCE LINEAR PEARL 3200 K TM-30-18

IES TM-30-18 Color Rendition Report

R_f 80 R_g 101

CCT 3164 K D_{uv} -0.0053

Local Chroma Shift ($R_{cs,hj}$): -10% -9% -2% 6% 11% 10% 4% -3% -8% -9% -4% 7% 9% 11% 3% -4%

Local Hue Shift ($R_{hs,hj}$): -0.03 0.09 0.17 0.15 0.08 -0.03 -0.13 -0.08 -0.02 0.09 0.18 0.11 0.02 -0.08 -0.13 -0.15

Hue-Angle Bin (j)

Colors are for visual orientation purposes only. Created with the IES TM-30-18 Calculator Version 2.0.

COLORSOURCE LINEAR PEARL 4500 K TM-30-18

IES TM-30-18 Color Rendition Report

R_f 77 R_g 99

CCT 4569 K D_{uv} -0.0072

Local Chroma Shift ($R_{cs,hj}$): -12% -9% -4% 5% 10% 10% 1% -5% -12% -11% -2% 6% 13% 11% 10% -3%

Local Hue Shift ($R_{hs,hj}$): -0.02 0.08 0.19 0.18 0.11 -0.01 -0.08 -0.06 0.02 0.18 0.24 0.18 0.06 -0.01 -0.16 -0.12

Hue-Angle Bin (j)

Colors are for visual orientation purposes only. Created with the IES TM-30-18 Calculator Version 2.0.

COLOR METRIC INFORMATION

COLORSOURCE LINEAR PEARL 5600 K TM-30-18

IES TM-30-18 Color Rendition Report

74 R_f		98 R_g

CCT 5704 K		D_{uv} -0.0044

Local Chroma Shift ($R_{cs,hj}$):
-14%, -11%, -5%, 5%, 11%, 10%, 1%, -8%, -16%, -12%, -3%, 5%, 14%, 12%, 11%, -4%

Local Hue Shift ($R_{hs,hj}$):
-0.02, 0.09, 0.20, 0.20, 0.13, 0.00, -0.08, -0.06, 0.06, 0.21, 0.28, 0.20, 0.09, -0.02, -0.19, -0.10

Hue-Angle Bin (j)

Colors are for visual orientation purposes only. Created with the IES TM-30-18 Calculator Version 2.0.
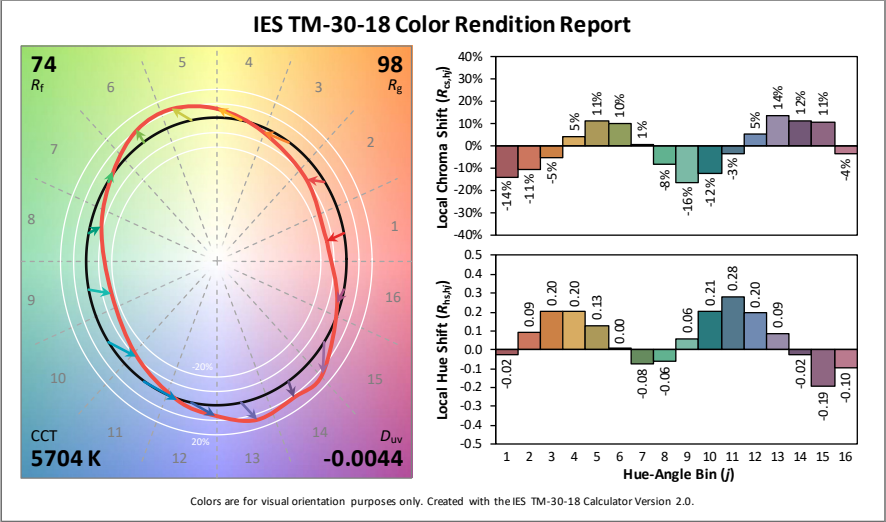
Additional Color Metrics

	CS LINEAR PEARL 3200 K	CS LINEAR PEARL 5600 K
CRI R_a (R_9)	81 (18)	74 (3)
TLCI	60	49

PHOTOMETRY

The photometry information shown below is for the Linear 1 (0.5 meter) fixture. Each longer Linear fixture is made up of multiple half-meter sections.

When calculating photometry for the Linear 2 multiply the information shown below by two. When calculating photometry for the Linear 4, multiply the information below by four.

Due to the physical properties of linear products, this is the best method for determining photometry for longer fixtures.
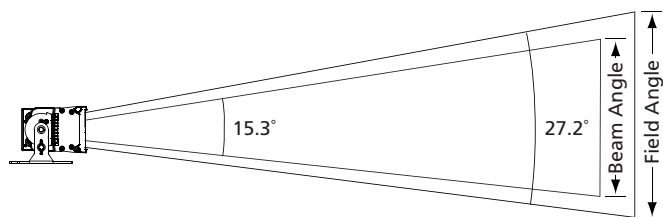
For a detailed explanation of linear photometry, please see the ETC white paper *The Validity of ColorSource Linear IES Files* at etcconnect.com.

For .ies files or lensing information, use the ColorSource PAR files and assume that you have multiple fixtures (for the Linear 2 and the Linear 4) that are hung 0.5 meters on center.

ColorSource Linear Pearl 1

Mode	Degree	Candela	Field Lumens	Beam Lumens	Power Consumption	Lumens Per Watt
CT Mode (3200 K)	27.2	50,316	3,261	1,868	82.0 W	40
CT Mode (5600 K)	27.2	43,061	2,791	1,598	57.3 W	49
Direct Mode Full (4000 K)	27.2	75,732	4,908	2,811	113.5 W	43

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

Throw Distance (d)	10 ft	15 ft	20 ft	25 ft	275.2 ft
	3.0 m	4.6 m	6.1 m	7.6 m	83.9 m
Field Diameter	4.8 ft	7.3 ft	9.7 ft	12.1 ft	–
	1.5 m	2.2 m	2.7 m	3.7 m	
Illuminance (fc)	757	337	189	121	1
Illuminance (lux)	8,152	3,623	2,038	1,304	10.76

To determine center beam illumination in footcandles at any throw distance, divide candela by the throw distance squared.

For field diameter at any distance, multiply distance by 0.484.
For beam diameter at any distance, multiply by 0.269.

Candela Plot
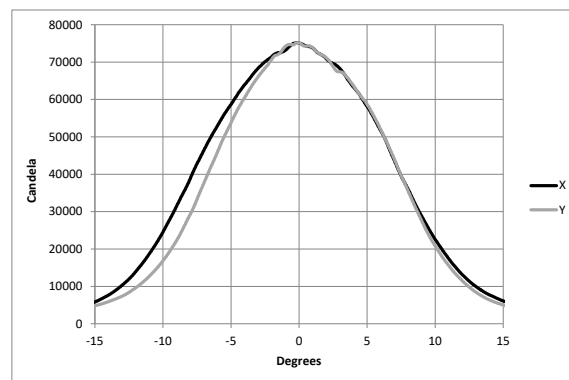
Iso-Illuminance Diagram
(Flat Surface Distribution)
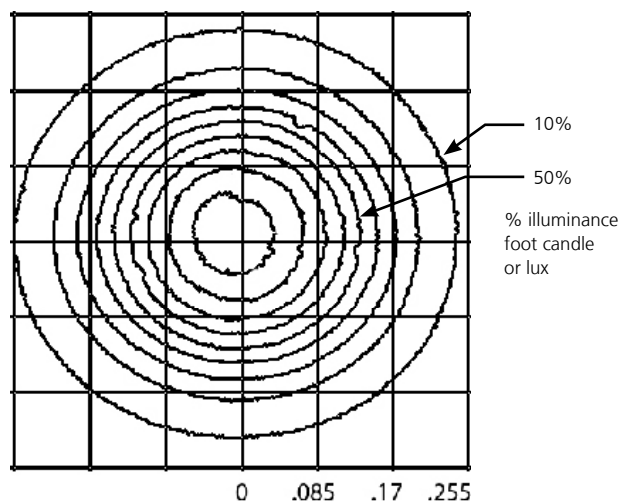
ORDERING INFORMATION

Secondary Lens Options

The following lenses are cut for ColorSource luminaires and create round, linear or oblong field patterns as described below. These lenses are not sized for use in Selador Classic fixtures. Linear lenses may be combined to create desired field size.

MODEL	DESCRIPTION	PART NUMBER	
HORIZONTAL			
CSLNLH.5	Narrow linear horizontal lens	7414K1003	
CSLMLH.5	Medium linear horizontal lens	7414K1005	
CSLWLH.5	Wide linear horizontal lens	7414K1007	
CSLXWLH.5	Extra wide linear horizontal lens	7414K1009	
VERTICAL			
CSLNLV.5	Narrow linear vertical lens	7414K1004	
CSLMLV.5	Medium linear vertical lens	7414K1006	
CSLWLV.5	Wide linear vertical lens	7414K1008	
CSLXWLV.5	Extra wide linear vertical lens	7414K1010	
ROUND			
CSLNR.5	Narrow round lens	7414K1012	
CSLMR.5	Medium round lens	7414K1013	
CSLWR.5	Wide round lens	7414K1014	
CSLXWR.5	Extra wide round lens	7414K1015	

Power Input Cables

Use information below to order 5' power input leads with factory-fitted connectors. CE Fixtures ship with powerCON to bare end cables in the box.

MODEL	DESCRIPTION	PART NUMBER (NOT CE)	
DPA-A	5 ft / 1.5 m powerCON to parallel blade U-ground (Edison) connector	7410B7037-A	
DPA-B	5 ft / 1.5 m PowerCON to 20 A two-pin and ground (stage-pin) connector	7410B7037-B	
DPA-C	5 ft / 1.5 m PowerCON to grounded 20 A twistlock connector	7410B7037-C	
DPA-X	5 ft / 1.5 m PowerCON to bare-end power input lead	7410B7037-X	

Power-Thru Jumpers

Note: Power-thru jumpers connect to luminaire's output (thru) connector to provide link to successive luminaires.

MODEL	DESCRIPTION	PART NUMBER	
DPJ-5	5 ft PowerCON to PowerCON fixture-to-fixture jumper	7410B7020	
DPJ-10	10 ft / 3.0 m PowerCON to PowerCON fixture-to-fixture jumper	7410B7010	

Luminaire Accessories

MODEL	DESCRIPTION	PART NUMBER	
CSL1Y	ColorSource Linear 1 yoke	7414K1017	
CSL1DY	ColorSource Linear 1 double-yoke	7414K1018	
CSLBD	ColorSource Linear barn door (2x 0.5 m sections)	7414K1020	
CSLL	ColorSource Linear louver (0.5 m section)	7414K1019	
400CC	C-clamp (does not ship with fixture)	7060A2009 (not CE)	
400SC	Safety cable (32 in)	7060A1022	
DPSJ-25	25 ft PowerCON-to-Edison input power cable with inline switch	7400B7030 (not CE)	

CONTROL

DMX Input Channel Profiles

DMX Channel	CT (Variable color temperature)	Dir (Direct)	1ch (One channel) Controls Preset #1
1	Intensity	Intensity	Intensity
2	Color temperature	Warm white	
3		Cool white	
4		Strobe*	

*Use DMX values of 0 or 255 for no strobe. Use values of 1-254 to increase the strobe rate from 1 per second up to 33 per second.

PHYSICAL

ColorSource Linear Pearl Pearl Dimensions

MODEL	HEIGHT		WIDTH		DEPTH	
	in	mm	in	mm	in	mm
Linear 1	4.29	109	19.61	499	6.04	153
Linear 2	4.29	109	39.37	1000	6.04	153
Linear 4	4.29	109	78.40	1991	6.04	153

*Does not include mounting hardware.

ColorSource Linear Pearl Pearl Weights

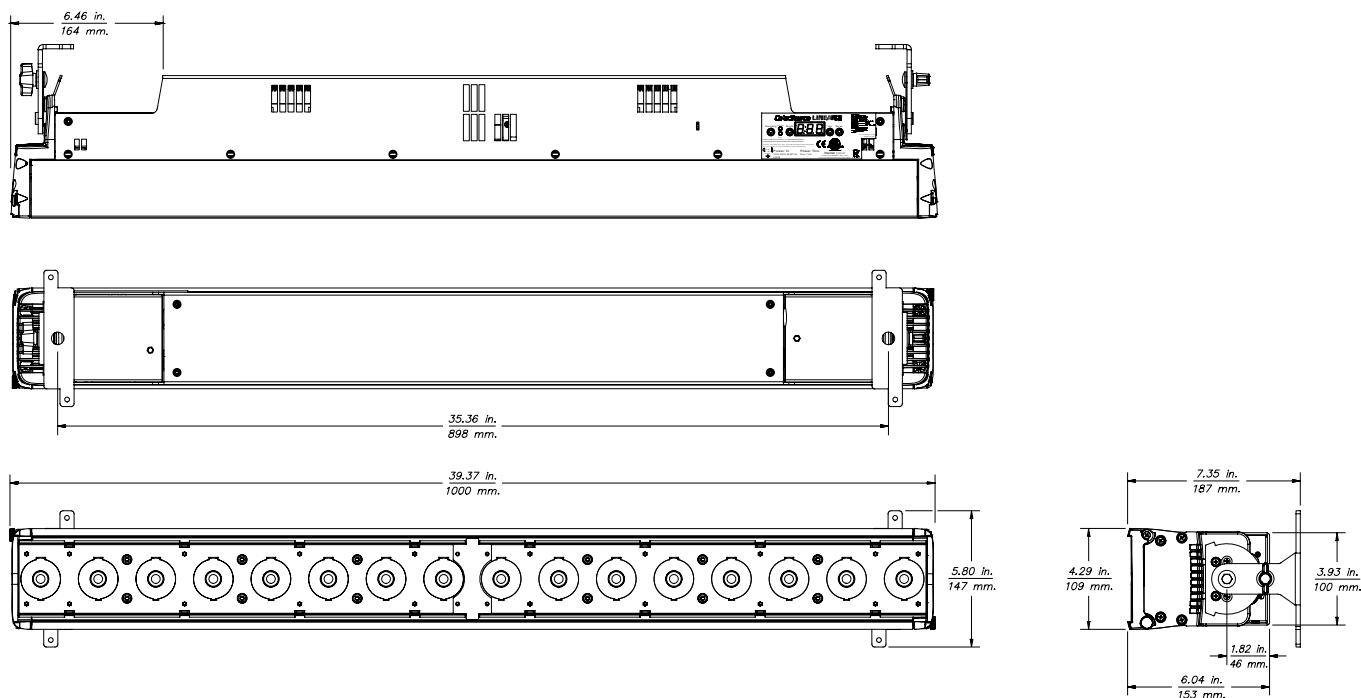| MODEL	WEIGHT*		SHIPPING WEIGHT	
	lb	kg	lb	kg
Linear 1	11.20	5.10	12.80	5.81
Linear 2	20.10	9.12	23.50	10.66
Linear 4	37.50	17.01	39.87	18.08

*Does not include mounting hardware.

COLORSOURCE LINEAR PEARL 1
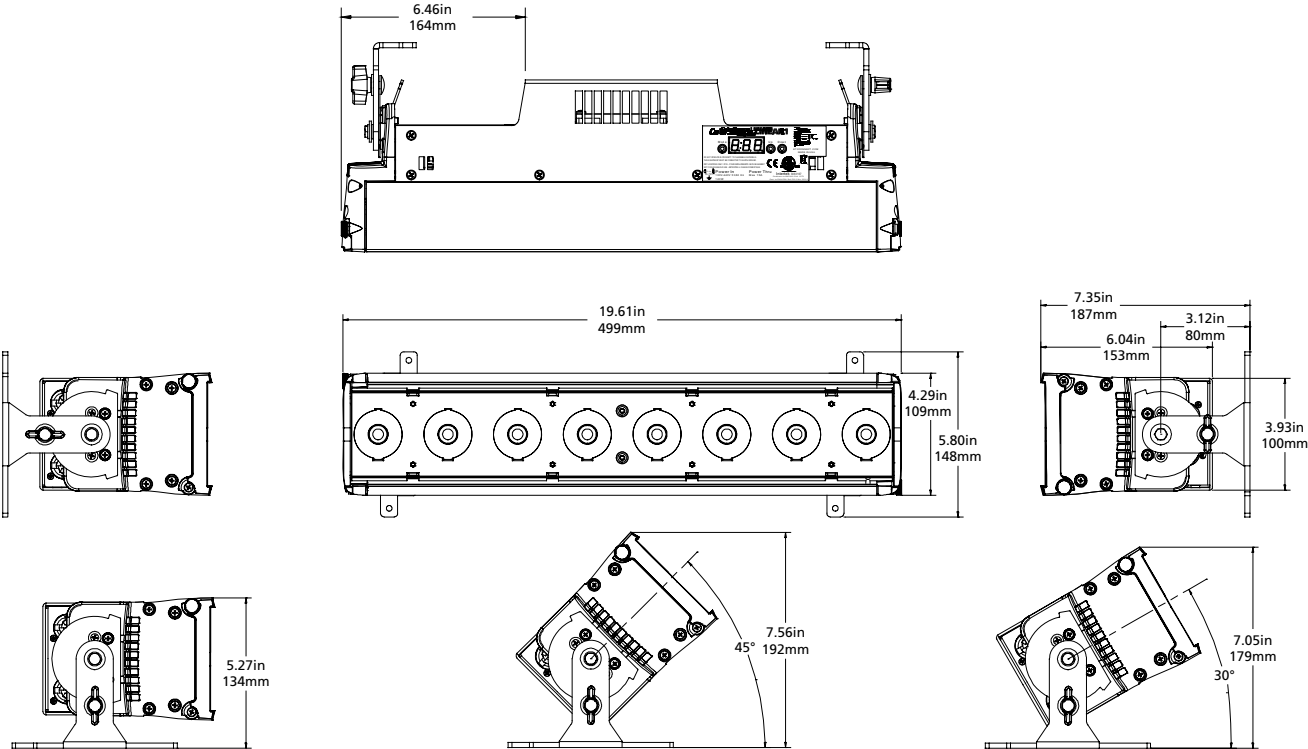
PHYSICAL

COLORSOURCE LINEAR PEARL 2

COLORSOURCE LINEAR PEARL 4

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