

# CALUMMA™ L MC

Featuring an optical design using twelve high efficacy multichip LEDs and available with optional LED colour variants and various beam angles, the large-sized Calumma L MC luminaire creates powerful and beautiful light output for a spot, accent or flood lighting solution. Its durable housing is built to withstand any exterior conditions, and its special finish for harsh and marine environments provides an exceptional outdoor LED luminaire in an elegant design. Additionally, Calumma L MC can be connected in long In/Out daisy-chains via an E-Box and hybrid Plug & Play connections for almost effortless installation. Complemented by wide range of accessories and control protocols, this luminaire is an effective and versatile unit to get the most out of architectural lighting applications.



## KEY FEATURES

### Lumen output & Light source

Luminaire with twelve high-power, multi-chip LEDs provides up to 3990 lumen output. Multiple LED colour variants. No light spills. Perfectly homogenised light output with efficacy up to 36 lm/w.

### Design & Durability

Compact, durable and stylish housing made of high-pressure die cast aluminium. IP67 and IK10 certification; suitable for marine applications (Harsh Environment Finish required) and traffic applications. Supported with a 5 year warranty.

### Flexibility

Exceptional outdoor or indoor LED luminaire with a wide range of accessories, custom colour finishes, multiple light output variants and beam angles.

### Connectivity

Utilising the innovative E-Box series of power and data interfaces, Calumma L MC can communicate via numerous wired, wireless, and Ethernet based control protocols. Various wiring topologies are supported using hybrid power / data cables with Plug & Play connectors or standard connection options.

## COLOURS

\* UPON REQUEST



RGBW  
(6500 K)



RGBA



RGLB



PW  
(3000 K)



TW  
(3000-6500 K) \*

## CONTROL & PROTOCOLS



OPTIONAL



OPTIONAL



OPTIONAL



OPTIONAL

## FINISH OPTIONS

\* CLOSEST RAL TONE  
\* HE = Harsh Environment



Graphite Black  
RAL 9011\*



Grey Aluminium  
RAL 9007



Sandstone  
RAL 1014\*



Pure White  
RAL 9010



HE  
Graphite Black  
RAL 9011\*



HE  
Grey Aluminium  
RAL 9007



HE  
Sandstone  
RAL 1014\*



HE  
Pure White  
RAL 9010



Custom  
Paint Colour

## OPTIC OPTIONS

### SYMMETRICAL



9°



15°



25°



30°



45°



65°



100°

### BI-SYMMETRICAL



10°x30°



10°x60°



15°x45°



15°x90°



30°x60°



30°x90°



30°x10°



60°x10°



45°x15°



90°x15°



60°x30°



90°x30°

## STANDARD & SPECIFICATION



IP67



IK10



CE



ETL



ROHS



UK  
CA



5  
YEAR

Warranty  
with  
Registration



Vibration  
Standard  
for Bridge

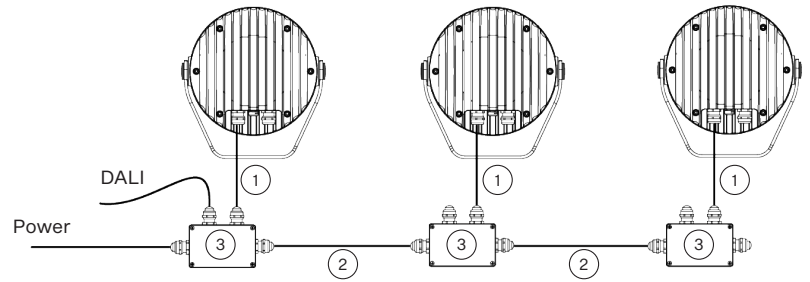
**SPECIFICATION**

<b>ELECTRICAL</b>	Input Voltage	120–277 V AC 50/60 Hz (US)	
	Typical Power Consumption	110 W +/-10 %	
<b>OPTICAL</b>	Light Source	High Power Multichip LEDs	
	Colour Variants	RGBW (W - 6500 K)   RGBA   RGBL   Pure White (W - 3000 K)	
		<b>On Request:</b> Tuneable White (3000–6500 K)	
	Beam Angle	9°   15°   25°   30°   45°   65°   100°	
		10°x30°   30°x10°   10°x60°   60°x10°   15°x45°   45°x15° 15°x90°   90°x15°   30°x60°   60°x30°   30°x90°   90°x30°	
Lumen Output Delivered	3990 lm (@9° RGBW)		
Projected Lumen Maintenance	L90B10 >90.000 hrs, Ta = 25°C / 77°F		
<b>CONTROL</b>	Interface Protocol	Via E-box range, DMX/RDM, wireless DMX, DALI 2	
	E-box control protocol	USITT DMX512+RDM, ArtNet, MA Net, MA Net2, sACN, Kling-Net	
	DALI 2 Device Type	DT 8	
	Wireless DMX (Option)	Lumen Radio CRMX Technology	
	Control System	Third Party DMX Controllers	
	Operating Modes	DMX, Stand-alone	
	Settings / Addressing	E-box, RDM communicator	
	Power Supply	Integrated	
	Width x Height x Depth   Weight	338 x 360 x 116 mm (13.31 x 14.13 x 4.57 in.)   9.43 kg (20.79 lbs)	
Housing	High Pressure Die-Cast Aluminium Body		
	Tempered Glass		
Finish Options	Standard Colour	Graphite Black RAL 9011   Grey Aluminium RAL 9007 Pure White RAL 9010   Sandstone RAL 1014	
	Standard Colour Harsh Environment	Graphite Black RAL 9011   Grey Aluminium RAL 9007 Pure White RAL 9010   Sandstone RAL 1014	
	Cost Option	Custom RAL	
<b>PHYSICAL</b>	Cables / Connections	<b>IN/OUT (for E- Box version):</b> - 0.5 m cables with hybrid connectors - Jumper cables	<b>IN (for DMX, DALI):</b> - 1 m cable with bare-end - Other cable length - custom - Junction box - optional
	Mounting Method	Yoke or Yoke for Pole Adaptor	
	Adjustability	+180° / -180°	
	Protection Factor	IP67 / Suitable For Wet Locations	
	IK Rating	IK10	
	Cooling System	Convection	
	Operating Ambient Temperature	-20°C / +50°C (-4°F / +122°F)	
<b>CERTIFICATION</b>	Listings	ETL / cETL, CE, RoHS, UKCA	
<b>ACCESSORIES</b>	<b>Not Included Items</b>		
	Junction Box for Calumma S-XL / Eminere (CE or US)		
	Optical Demo Set for Calumma L (for demo purposes)		
	Outdoor Foil Holder for Calumma L „OFH“ version only (for permanent installation)		
	Optical Foil Set for Outdoor Foil Holder Calumma L		
	Land Spike for Calumma L		
	Top Hat Calumma L		
	Half Top Hat Calumma L		
	Re-enterable Electrical Insulating Resin		
	Floor stand for Calumma L, XL		
Pole Adaptor (ø 102mm) (Yoke for Pole Adaptor Required)			

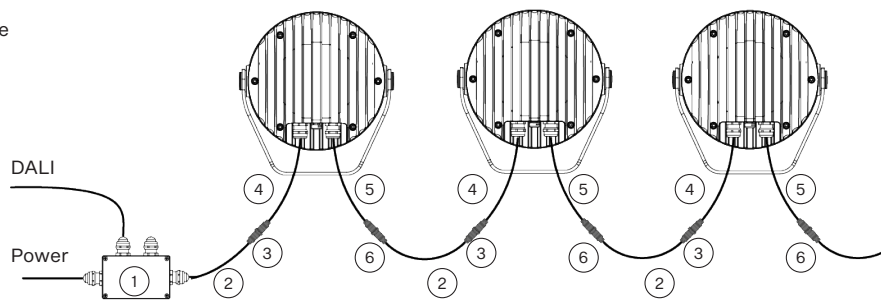
**CONTROL AND CONNECTION OPTIONS - CE**

**DALI**

- 1) Hybrid Cable (13053693) Standard 1 m with bare-end, black or on request Hybrid cable (13053697), 1 m with bare-end, white
- 2) Hybrid Cable (13053693) Standard 1 m with bare-end, black or on request Hybrid cable (13053697), 1 m with bare-end, white or Scope of Others
- 3) Junction Box



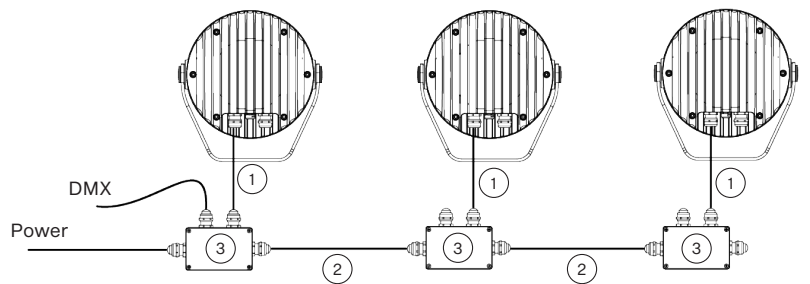
- 1) Junction Box
- 2) Hybrid Cable (13053693) Standard 1 m with bare-end, black or on request Hybrid cable (13053697), 1 m with bare-end, white
- 3) Field Installable Connector FF DC-05 (13053971)
- 4) Hybrid Cable (13053693), black, Standard 0.5 m with Field Installable Connector MM DC-05 (13053972), black  
or on request Hybrid cable (13053697), white, 0.5 m with Field Installable Connector MM DC-05 (13053972), black
- 5) Hybrid Cable (13053693), black, Standard 0.5 m with Field Installable Connector FF DC-05 (13053971), black  
or on request Hybrid cable (13053697), white, 0.5 m with Field Installable Connector FF DC-05 (13053971), black
- 6) Field Installable Connector MM DC-05 (13053972)



**Note: The last unplugged connector must be fitted with a Waterproof Cap to protect the IP rating.**

**DMX**

- 1) Flamar 3x16 AWG + 1x(2x24 AWG) - (13051508), Standard 1 m with bare-end, black or HYB-5731ZH LSZH (13053694), Hybrid Cable, white
- 2) Flamar 3x16 AWG + 1x(2x24 AWG) - (13051508), black or HYB-5731ZH LSZH (13053694), Hybrid Cable, white or Scope of Others
- 3) Junction Box



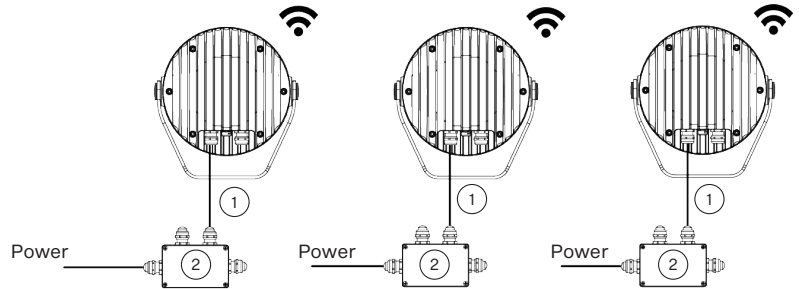
**CONTROL AND CONNECTION OPTIONS - CE**

**WIRELESS DMX**

- 1) Flamar 3x16 AWG + 1x(2x24 AWG) - (13051508), Standard 1 m bare-end, black or Hybrid Cable HYB-5731ZH LSZH (13053694), white

- 2) Junction Box

**Note: This type of connection is available for M, L, XL versions.**

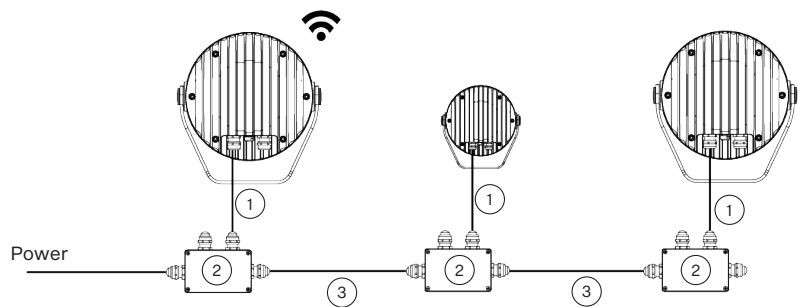


- 1) Flamar 3x16 AWG + 1x(2x24 AWG) - (13051508), Standard 1 m bare-end, black or Hybrid Cable HYB-5731ZH LSZH (13053694), white

- 2) Junction Box

- 3) Flamar 3x16 AWG + 1x(2x24 AWG) - (13051508) or HYB-5731ZH LSZH (13053694), Hybrid Cable, white or Scope of Others

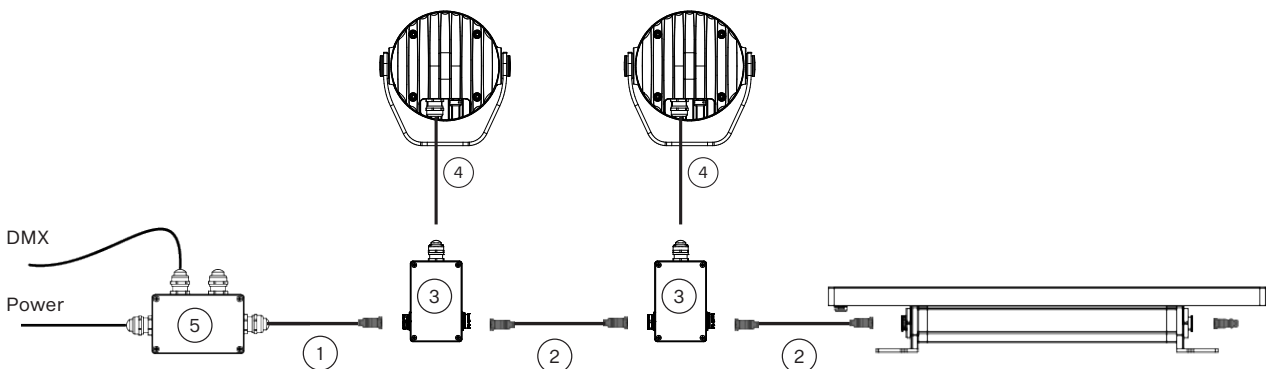
**Note: This type of connection must have M, L or XL versions as the first luminaire. Next luminaires in a row could be chosen from S, M, L or XL versions.**



**DMX WITH JUNCTION BOX FOR CALUMMA L / EMINERE (CE)**

- 1) Leader Cables FF - 2 | 5 | 10 | 25 | 50 m
- 2) Jumper Cables FF/FM - 0.25 | 0.5 | 1 | 2 | 3 | 5 | 10 m
- 3) Junction Box for Calumma S-XL / Eminere CE (10981268 for RAL9011)
- 4) Flamar 3x16 AWG + 1x(2x24 AWG) - (13051508) Standard 1 m with bare-end, black or HYB-5731ZH LSZH (13053694), Hybrid Cable, white
- 5) Junction Box

**Note: The last unplugged connector must be fitted with a Waterproof Cap to protect the IP rating.**

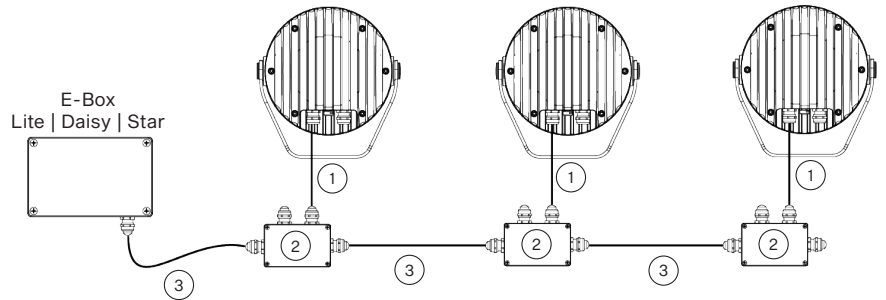


**CONTROL AND CONNECTION OPTIONS - CE**

**DMX or ETHERNET via E-BOX**

- 1) Flamar 3x16 AWG + 1x(2x24 AWG) - (13051508), Standard 1 m with bare-end, black or HYB-5731ZH LSZH (13053694), Hybrid cable, white
- 2) Junction Box
- 3) Flamar 3x16 AWG + 1x(2x24 AWG) - (13051508), black or HYB-5731ZH LSZH (13053694), Hybrid cable, white or Scope of Others

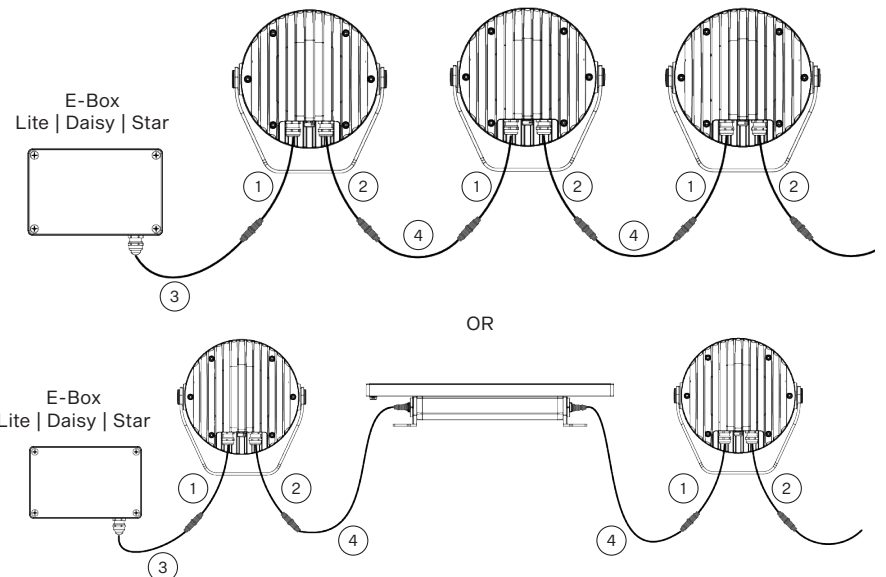
**Note: This type of connection is available for S, M, L, and XL versions. E-Box has to be in Pass Through mode only.**



- 1) Leader Cable MM (13053493)  
Standard 0.5 m with hybrid connector
- 2) Leader Cable MF (13053494)  
Standard 0.5 m with hybrid connector
- 3) Leader Cable FF 2 m (13053438)  
Leader Cable FF 5 m (13053440)  
Leader Cable FF 10 m (13053436)  
Leader Cable FF 25 m (13053437)  
Leader Cable FF 50 m (13053439)

- 4) Jumper Cable FF/FM 0.25 m (13053422)  
Jumper Cable FF/FM 0.5 m (13053423)  
Jumper Cable FF/FM 1 m (13053425)  
Jumper Cable FF/FM 2 m (13053427)  
Jumper Cable FF/FM 3 m (13053428)  
Jumper Cable FF/FM 5 m (13053430)  
Jumper Cable FF/FM 10 m (13053424)

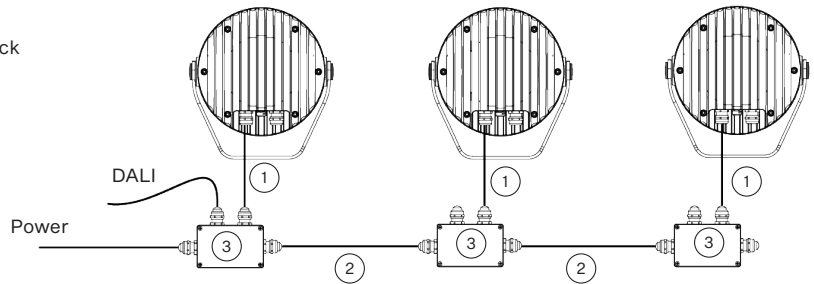
**Note: With this type of connection is possible to connect Calumma (M, L, XL) and Eminere (Eminere, Eminere Side) luminaires in a row.**



**CONTROL AND CONNECTION OPTIONS - US**

**DALI**

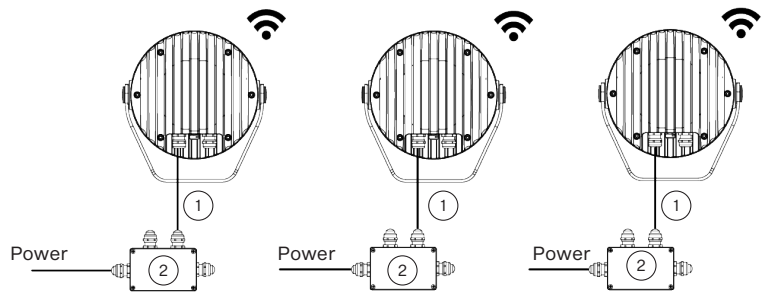
- 1) SJTW 5x14 AWG (13053693), Standard 1 m with bare-end, black or Cable SJTW 5x14 AWG (13053697), white
- 2) SJTW 5x14 AWG (13053693), black or Cable SJTW 5x14 AWG (13053697), white or Scope of Others
- 3) Junction Box



**WIRELESS DMX**

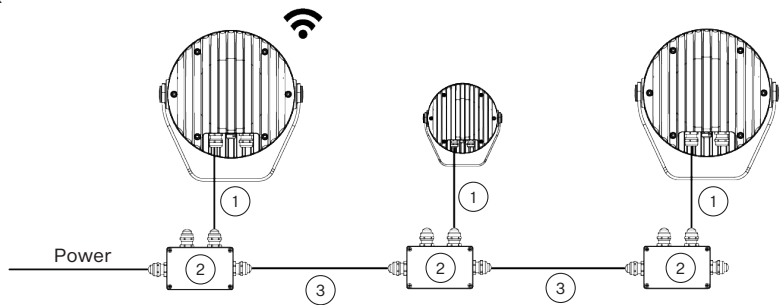
- 1) SJTW 6x14 AWG (13053480), Standard 1 m with bare-end, black or Cable SJTW 6x14 AWG (13053695), white
- 2) Junction Box

**Note: This type of connection is available for M, L, XL versions**



- 1) SJTW 6x14 AWG (13053480), Standard 1 m with bare-end, black or Cable SJTW 6x14 AWG (13053695), white
- 2) Junction Box
- 3) SJTW 6x14 AWG (13053480), black or Cable SJTW 6x14 AWG (13053695), white or Scope of Others

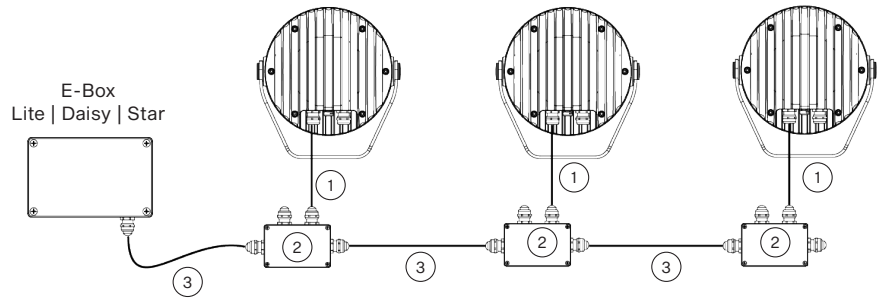
**Note: This type of connection must have M, L or XL versions as the first luminaire. Next luminaires in a row could be chosen from S, M, L or XL versions.**



**CONTROL AND CONNECTION OPTIONS - US**

**DMX or ETHERNET via E-BOX**

- 1) SJTW 6x14 AWG (13053480)  
Standard 1 m with bare-end, black  
or Cable SJTW 6x14 AWG (13053695), white
- 2) Junction Box
- 3) SJTW 6x14 AWG (13053480), black  
or Cable SJTW 6x14 AWG (13053695), white  
or Scope of Others

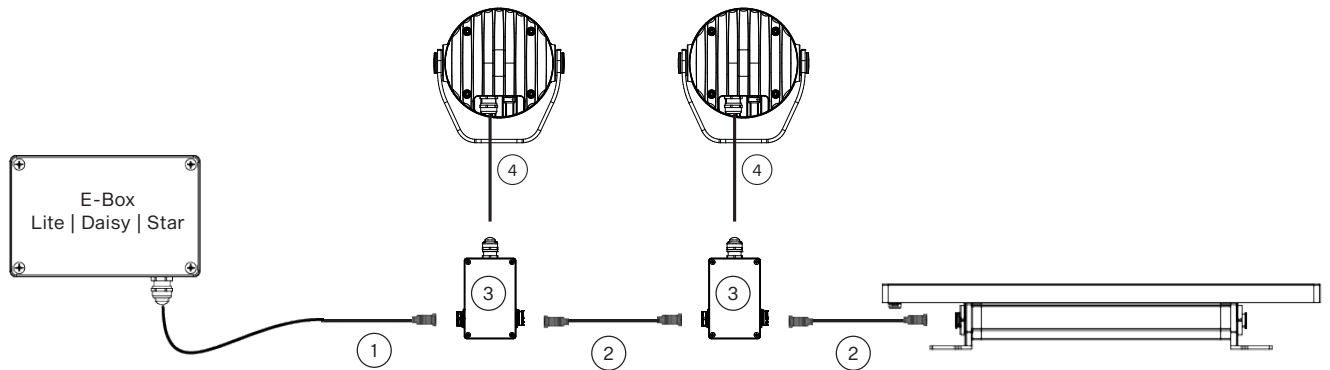


**Note: This type of connection is available for S, M, L and XL versions. E-Box has to be in Pass Through mode only.**

**DMX WITH JUNCTION BOX FOR CALUMMA L / EMINERE (US)**

- 1) Leader Cables FF - 2 | 5 | 10 | 25 | 50 m
- 2) Jumper Cables FF/FM - 0.25 | 0.5 | 1 | 2 | 3 | 5 | 10 m
- 3) Junction Box for Calumma S-XL / Eminere US (10981269 for RAL9011)
- 4) SJTW 6x14 AWG (13053480) Standard 1 m with bare-end, black  
or Cable SJTW 6x14 AWG (13053695), white

**Note: The last unplugged connector must be fitted with a Waterproof Cap to protect the IP rating.**



## CONNECTIVITY

Following table shows maximum connected Calummas L MC in a row with respect of cable length.

STANDARD MODE	Cable length (m)	Voltage (V)			
		120	190	230	277
CALUMMA L MC	10	17	26	32	38
	20	17	26	32	38
	30	12	26	32	38
	50	7	18	26	37
	70	5	13	18	27
	100	3	9	13	19
	200	3	4	6	9
	500	1	2	3	4

PASS-THROUGH MODE	Cable length (m)	Voltage (V)			
		120	190	230	277
CALUMMA L MC	10	17	26	32	32
	20	17	26	32	32
	30	12	26	32	32
	50	7	18	26	32
	70	5	13	18	27
	100	3	9	13	19

## BOOSTER BOX POSITIONS

Cable length (m)	Max. number of Calummas L MC= 191 (in Standard mode)			
	120 V	190 V	230 V	277 V
10 m	17	26	-	-
20 m	17, 34, 51	26, 32	32	38
30 m	12, 24, 36, 48, 60, 71, 84	26, 52, 78	32, 64	38, 76
50 m	7, 14, 21, 28, 35, 42, 49, 56, 63...	18, 32, 54, 72, 90...	26, 52, 78, 104...	37, 74, 111...
70 m	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80...	13, 26, 39, 52, 65, 78, 91, 104, 117...	18, 36, 54, 72, 90 108...	27, 54, 81, 108, 135...
100 m	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, 63, 66, 69, 72, 75, 78, 81...	9, 18, 27, 36, 45, 54, 72, 81, 90, 99, 108, ...	13, 26, 39, 52, 65, 78, 91, 104...	19, 38, 57, 76, 95, 114...
200 m	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, 63, 66, 69, 72, 75, 78, 81...	4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84....	6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72, 78, 84, 90, 96, 102....	9, 18, 27, 36, 45, 54, 63, 81, 90, 99, 108, 117....
500 m	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11....	2, 4, 6, 8, 10, 12, 14, 16, 18....	3, 6, 9, 12, 15, 18, 21....	4, 8, 12, 16, 20, 24, 28....

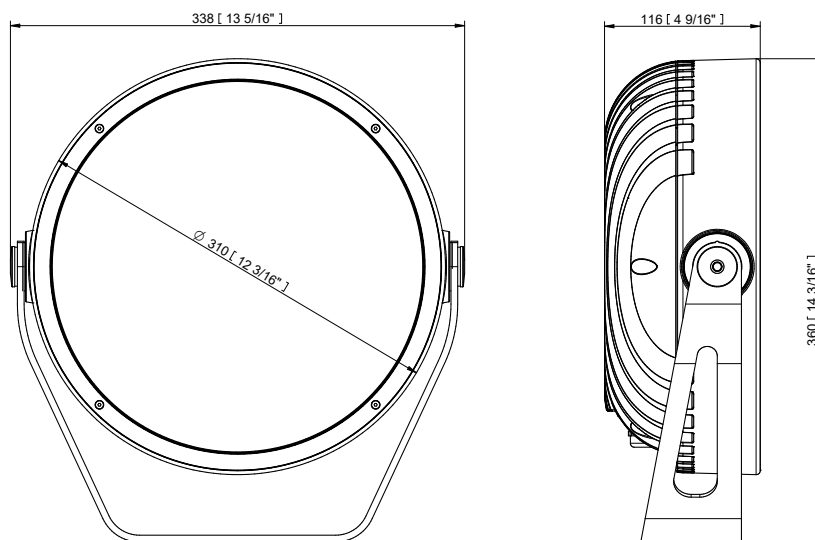
NOTE: For more detail see the User manual.

## PROJECTED AREA

	Front (rear) - m <sup>2</sup>	Front (rear) ft <sup>2</sup>	Side - m <sup>2</sup>	Side - ft <sup>2</sup>	Top - m <sup>2</sup>	Top - ft <sup>2</sup>
Calumma L	0.080	0.861	0.037	0.398	0.035	0.373
with Top Hat	0.080	0.861	0.087	0.936	0.085	0.911
with Half Top Hat	0.080	0.861	0.059	0.635	0.082	0.882

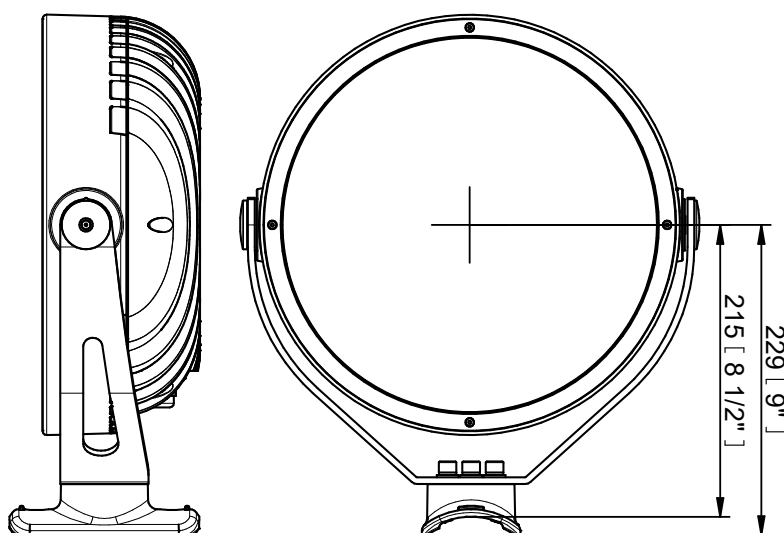
## DIMENSIONS

### Standard Yoke



### Yoke for Pole Adaptor (with Pole Adaptor / PA)

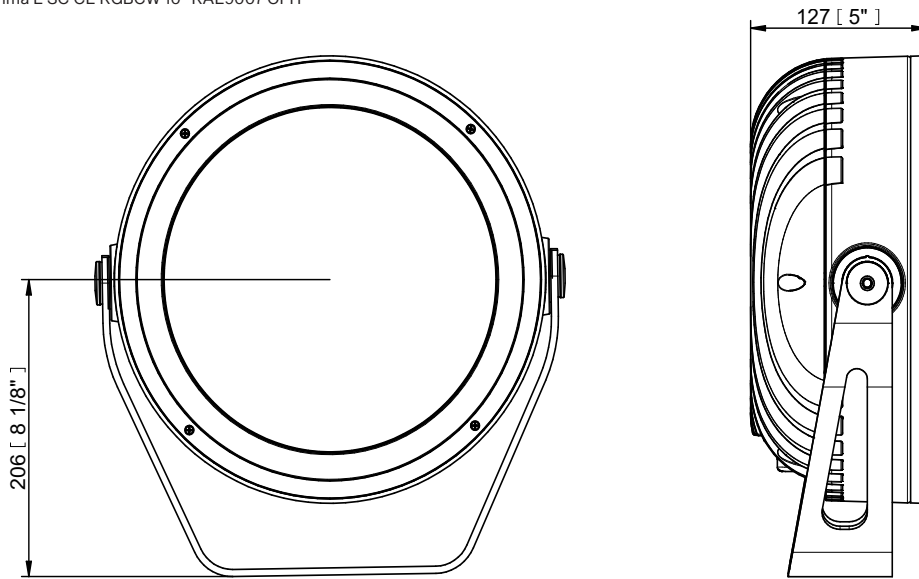
Example of ordering code: Calumma L SC RGCW 15° PA



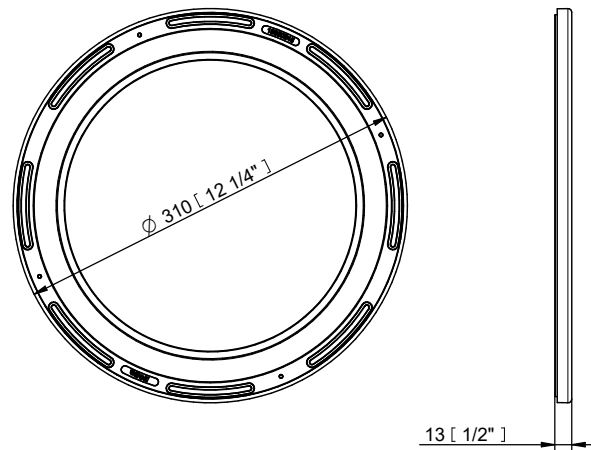
**ACCESSORIES**

**Outdoor Foil Holder for Calumma L „OFH“ version only (for permanent installation)**

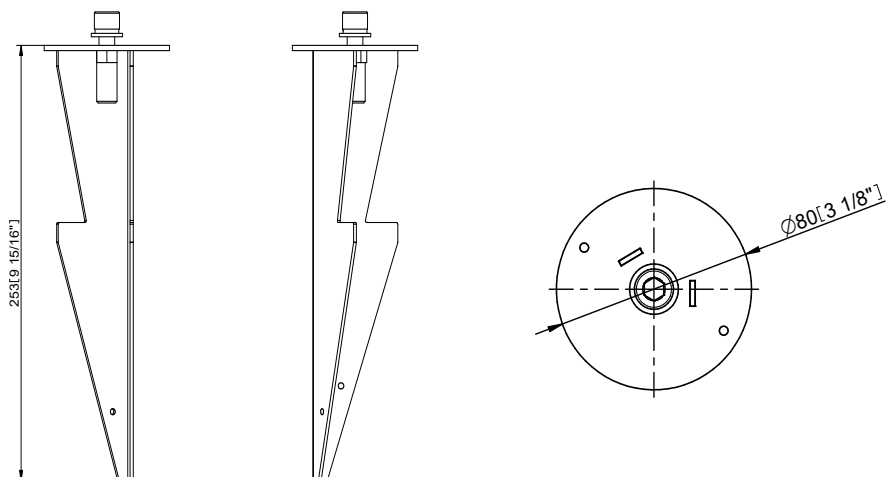
Example of ordering code: Calumma L SC CE RGBCW 10° RAL9007 OFH



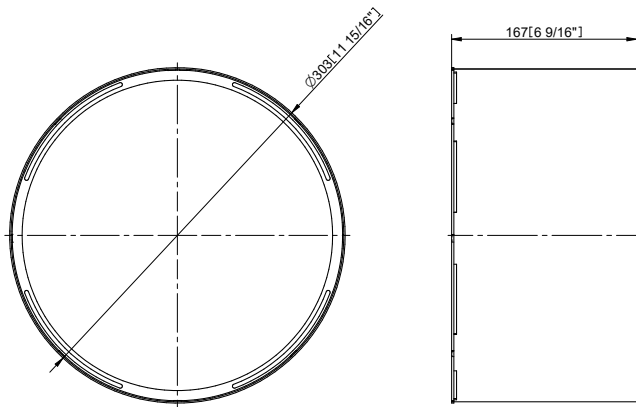
**Outdoor Foil Holder for Calumma L**



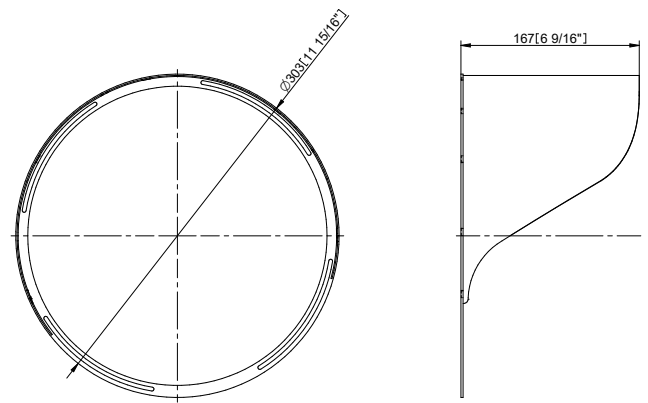
**Land Spike for Calumma (S, M, L, XL)**



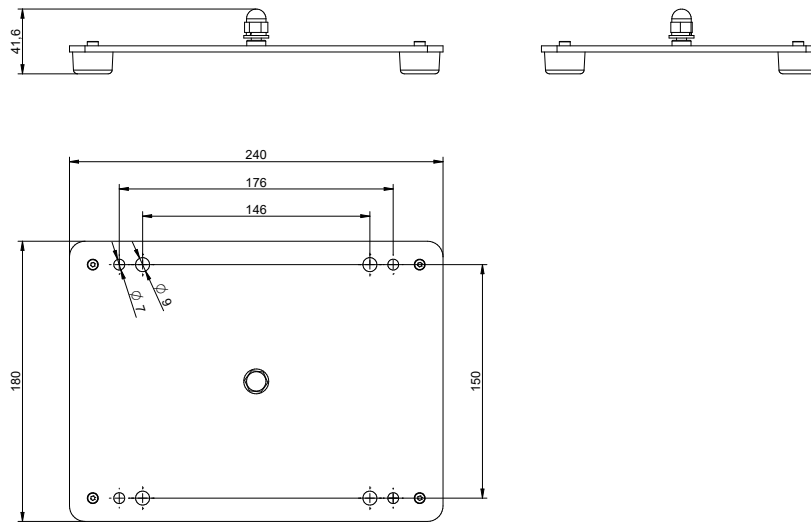
Top Hat



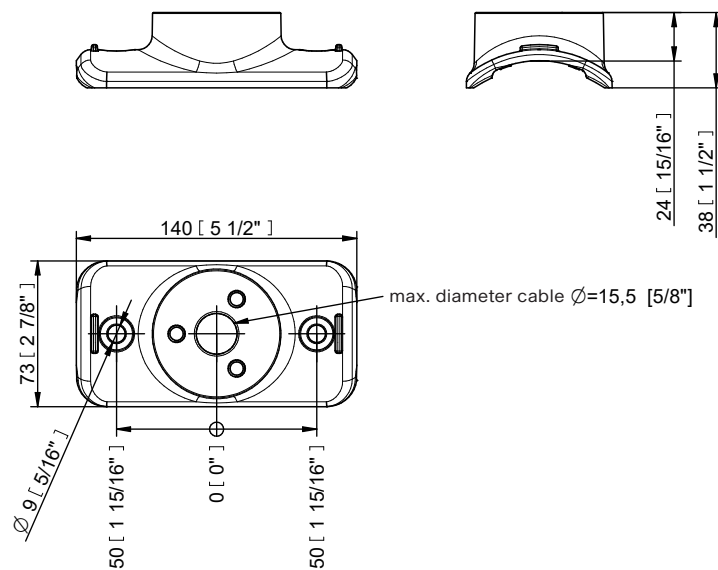
Half Top Hat



Floor Stand



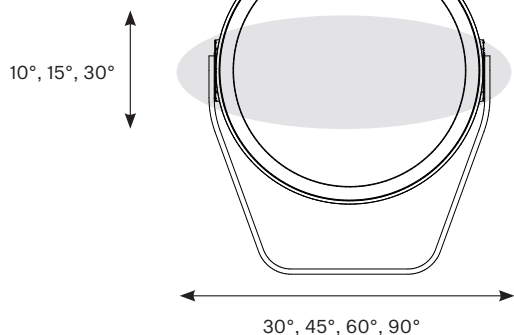
Pole Adaptor



**BI-SYMMETRICAL BEAM ANGLES**

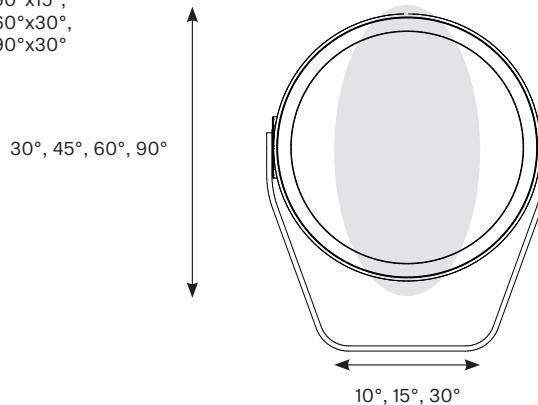
**Bi-symmetrical:**

10°x30°,  
10°x60°,  
15°x45°,  
15°x90°,  
30°x60°,  
30°x90°



**Bi-symmetrical:**

30°x10°,  
60°x10°,  
45°x15°,  
90°x15°,  
60°x30°,  
90°x30°



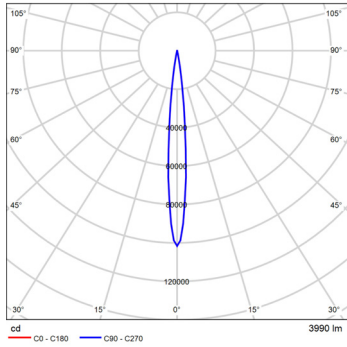
**PHOTOMETRIC OVERVIEW**

Lumen Output (lm)

	RGBCW (W 6500 K)	RGBA	WW (W 3000 K)
9°	3990	3421	3402
15°	3394	2911	2894
25°	3395	2911	2894
30°	3340	2864	2847
45°	3386	2904	2887
65°	3390	2907	2890
100°	3351	2873	2856
10°x30°, 30°x10°	3205	2747	2732
10°x60°, 60°x10°	3563	3055	3037
15°x45°, 45°x15°	3629	3111	3093
30°x60°, 60°x30°	3371	2891	2875
30°x90°, 90°x30°	3624	3109	3090
15°x90°, 90°x15°	3609	3095	3077

PHOTOMETRIC DATA

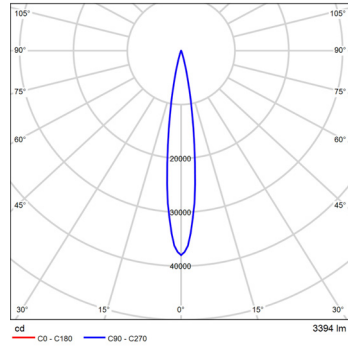
Calumma L MC RGBW 6500K 9dg



Distance [m]	Cone diameter [m]	E(0°) E(C0)	E(0°) E(C270)	Illuminance [lx]
0.50	0.09	400307	5.0° 200275	
1.0	0.17	101577	5.0° 50519	
1.5	0.26	45145	5.0° 22493	
2.0	0.35	25394	5.0° 12630	
2.5	0.44	16255	5.0° 8083	
3.0	0.52	11386	5.0° 5613	

Distance [m] Cone diameter [m] Illuminance [lx]  
C0 - C180 (Beam angle: 10.0°)

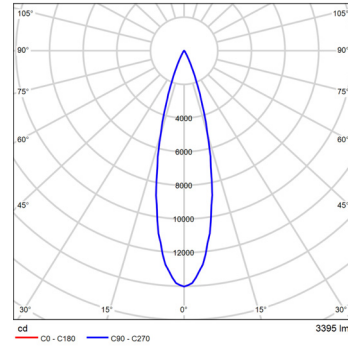
Calumma L MC RGBW 6500K 15dg



Distance [m]	Cone diameter [m]	E(0°) E(C0)	E(0°) E(C270)	Illuminance [lx]
0.50	0.13	151886	7.6° 73976	
1.0	0.27	37972	7.6° 18494	
1.5	0.40	16876	7.6° 8220	
2.0	0.53	9490	7.6° 4623	
2.5	0.67	6076	7.6° 2969	
3.0	0.80	4219	7.6° 2006	

Distance [m] Cone diameter [m] Illuminance [lx]  
C0 - C180 (Beam angle: 15.2°)

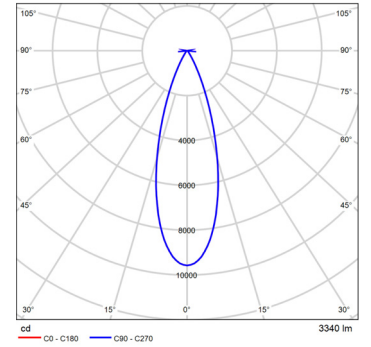
Calumma L MC RGBW 6500K 25dg



Distance [m]	Cone diameter [m]	E(0°) E(C0)	E(0°) E(C270)	Illuminance [lx]
0.50	0.23	56080	13.0° 30665	
1.0	0.46	14520	13.0° 6516	
1.5	0.69	6231	13.0° 2896	
2.0	0.92	3505	13.0° 1629	
2.5	1.2	2343	13.0° 1043	
3.0	1.4	1558	13.0° 724	

Distance [m] Cone diameter [m] Illuminance [lx]  
C0 - C180 (Beam angle: 26.0°)

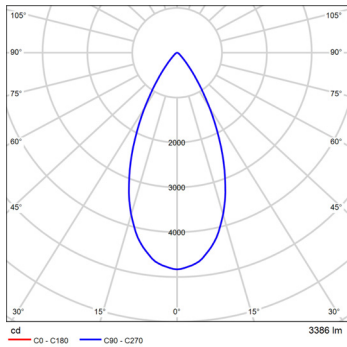
Calumma L MC RGBW 6500K 30dg



Distance [m]	Cone diameter [m]	E(0°) E(C0)	E(0°) E(C270)	Illuminance [lx]
0.50	0.29	38291	16.0° 17145	
1.0	0.57	9573	16.0° 4266	
1.5	0.86	4255	16.0° 1905	
2.0	1.1	2393	16.0° 1072	
2.5	1.4	1532	16.0° 686	
3.0	1.7	1064	16.0° 476	

Distance [m] Cone diameter [m] Illuminance [lx]  
C0 - C180 (Beam angle: 32.0°)

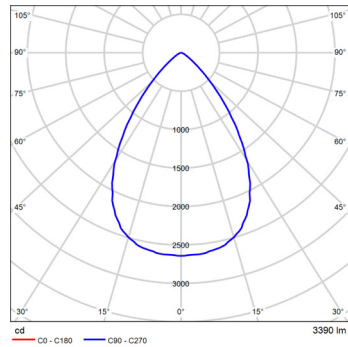
Calumma L MC RGBW 6500K 45dg



Distance [m]	Cone diameter [m]	E(0°) E(C0)	E(0°) E(C270)	Illuminance [lx]
0.50	0.45	19316	24.4° 7307	
1.0	0.91	4829	24.4° 1827	
1.5	1.4	2146	24.4° 812	
2.0	1.8	1207	24.4° 457	
2.5	2.3	772	24.4° 292	
3.0	2.7	537	24.4° 203	

Distance [m] Cone diameter [m] Illuminance [lx]  
C0 - C180 (Beam angle: 48.8°)

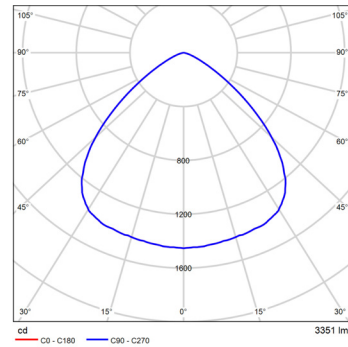
Calumma L MC RGBW 6500K 65dg



Distance [m]	Cone diameter [m]	E(0°) E(C0)	E(0°) E(C270)	Illuminance [lx]
0.50	0.70	10567	34.9° 2032	
1.0	1.4	2642	34.9° 733	
1.5	2.1	1174	34.9° 326	
2.0	2.8	660	34.9° 183	
2.5	3.5	423	34.9° 117	
3.0	4.2	294	34.9° 81	

Distance [m] Cone diameter [m] Illuminance [lx]  
C0 - C180 (Beam angle: 69.8°)

Calumma L MC RGBW 6500K 100dg

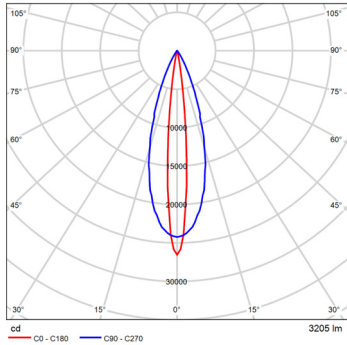


Distance [m]	Cone diameter [m]	E(0°) E(C0)	E(0°) E(C270)	Illuminance [lx]
0.50	1.2	5810	49.7° 790	
1.0	2.4	1453	49.7° 197	
1.5	3.5	648	49.7° 88	
2.0	4.7	363	49.7° 49	
2.5	5.9	232	49.7° 32	
3.0	7.1	161	49.7° 22	

Distance [m] Cone diameter [m] Illuminance [lx]  
C0 - C180 (Beam angle: 99.4°)

PHOTOMETRIC DATA

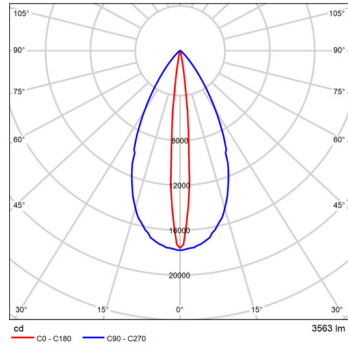
Calumma L MC RGBW 6500K  
10x30dg



Distance [m]	Cone diameter [m]	E(0°)	E(C90)	E(C0)
0.50	0.50 0.09	106133 E(C90) 16.7° 42792 E(C0) 5.2° 53293		
1.0	1.00 0.36	26533 E(0°) 16.7° 10688 E(C90) 5.2° 13333		
1.5	1.50 0.27	11793 E(0°) 16.7° 4755 E(C90) 5.2° 5921		
2.0	2.00 0.22	6633 E(0°) 16.7° 2875 E(C90) 5.2° 3331		
2.5	2.50 0.18	4248 E(0°) 16.7° 1712 E(C90) 5.2° 2132		
3.0	3.00 0.15	2948 E(0°) 16.7° 1189 E(C90) 5.2° 1480		

Distance [m] Cone diameter [m] Illuminance [lx]  
 C0 - C180 (Beam angle: 10.4°)  
 C90 - C270 (Beam angle: 33.4°)

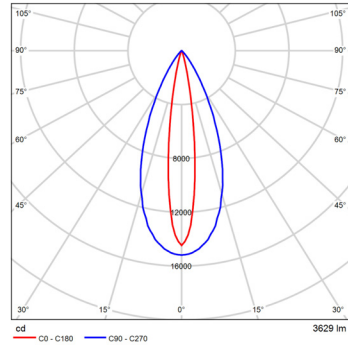
Calumma L MC RGBW 6500K  
10x60dg



Distance [m]	Cone diameter [m]	E(0°)	E(C90)	E(C0)
0.50	0.50 0.09	70346 E(C90) 28.3° 25796 E(C0) 5.0° 30186		
1.0	1.00 0.17	17587 E(0°) 28.3° 6434 E(C90) 5.0° 8789		
1.5	1.50 0.26	7816 E(0°) 28.3° 2860 E(C90) 5.0° 3098		
2.0	2.00 0.35	4387 E(0°) 28.3° 1609 E(C90) 5.0° 2197		
2.5	2.50 0.44	2814 E(0°) 28.3° 1029 E(C90) 5.0° 1406		
3.0	3.00 0.52	1954 E(0°) 28.3° 715 E(C90) 5.0° 977		

Distance [m] Cone diameter [m] Illuminance [lx]  
 C0 - C180 (Beam angle: 10.0°)  
 C90 - C270 (Beam angle: 52.6°)

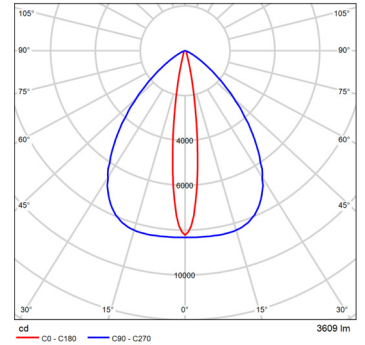
Calumma L MC RGBW 6500K  
15x45dg



Distance [m]	Cone diameter [m]	E(0°)	E(C90)	E(C0)
0.50	0.50 0.14	87865 E(C90) 22.0° 24259 E(C0) 7.7° 35214		
1.0	1.00 0.27	14466 E(0°) 22.0° 6085 E(C90) 7.7° 7064		
1.5	1.50 0.41	6429 E(0°) 22.0° 2704 E(C90) 7.7° 3135		
2.0	2.00 0.54	3617 E(0°) 22.0° 1521 E(C90) 7.7° 1783		
2.5	2.50 0.68	2315 E(0°) 22.0° 974 E(C90) 7.7° 1129		
3.0	3.00 0.81	1607 E(0°) 22.0° 676 E(C90) 7.7° 784		

Distance [m] Cone diameter [m] Illuminance [lx]  
 C0 - C180 (Beam angle: 15.4°)  
 C90 - C270 (Beam angle: 44.0°)

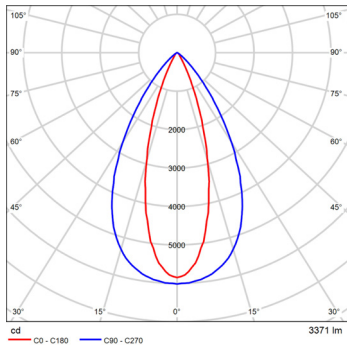
Calumma L MC RGBW 6500K  
15x90dg



Distance [m]	Cone diameter [m]	E(0°)	E(C90)	E(C0)
0.50	0.50 0.13	33878 E(C90) 41.3° 7113 E(C0) 7.6° 16302		
1.0	1.00 0.27	8219 E(0°) 41.3° 1778 E(C90) 7.6° 4051		
1.5	1.50 0.40	3653 E(0°) 41.3° 790 E(C90) 7.6° 1800		
2.0	2.00 0.53	2055 E(0°) 41.3° 446 E(C90) 7.6° 1013		
2.5	2.50 0.67	1515 E(0°) 41.3° 285 E(C90) 7.6° 648		
3.0	3.00 0.80	913 E(0°) 41.3° 198 E(C90) 7.6° 450		

Distance [m] Cone diameter [m] Illuminance [lx]  
 C0 - C180 (Beam angle: 15.2°)  
 C90 - C270 (Beam angle: 82.6°)

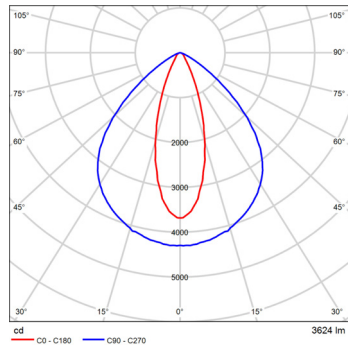
Calumma L MC RGBW 6500K  
30x60dg



Distance [m]	Cone diameter [m]	E(0°)	E(C90)	E(C0)
0.50	0.50 0.28	23388 E(C90) 29.9° 7859 E(C0) 15.7° 10441		
1.0	1.00 0.56	5647 E(0°) 29.9° 1865 E(C90) 15.7° 2610		
1.5	1.50 0.84	2599 E(0°) 29.9° 873 E(C90) 15.7° 1160		
2.0	2.00 1.1	1462 E(0°) 29.9° 491 E(C90) 15.7° 653		
2.5	2.50 1.4	936 E(0°) 29.9° 314 E(C90) 15.7° 418		
3.0	3.00 1.7	650 E(0°) 29.9° 218 E(C90) 15.7° 290		

Distance [m] Cone diameter [m] Illuminance [lx]  
 C0 - C180 (Beam angle: 31.4°)  
 C90 - C270 (Beam angle: 39.8°)

Calumma L MC RGBW 6500K  
30x90dg



Distance [m]	Cone diameter [m]	E(0°)	E(C90)	E(C0)
0.50	0.50 0.30	14724 E(C90) 45.3° 3000 E(C0) 16.8° 6469		
1.0	1.00 0.60	3681 E(0°) 45.3° 750 E(C90) 16.8° 1617		
1.5	1.50 0.91	1636 E(0°) 45.3° 333 E(C90) 16.8° 719		
2.0	2.00 1.2	920 E(0°) 45.3° 180 E(C90) 16.8° 404		
2.5	2.50 1.5	589 E(0°) 45.3° 100 E(C90) 16.8° 259		
3.0	3.00 1.8	409 E(0°) 45.3° 82 E(C90) 16.8° 180		

Distance [m] Cone diameter [m] Illuminance [lx]  
 C0 - C180 (Beam angle: 15.4°)  
 C90 - C270 (Beam angle: 50.8°)