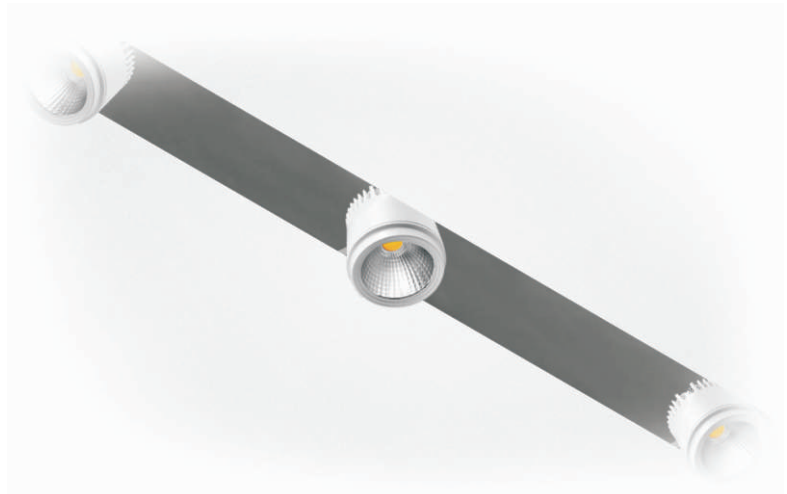


## Detailed data sheet

09/1/2017

<b>3 step</b> MacAdam Ellipse Initial	<b>2 step</b> MacAdam Ellipse Initial	<b>L70/B50</b> 50.000h
<b>Ra</b> 80	<b>Ra</b> 90	<b>Ra</b> 97



## Interior spot light series

LIGHT SOURCE BY  


### Product description

This spot is specially designed for MANDI System aluminum profile. MANDI System is an advanced lighting solution designed to meet even the most demanding architectural and artistic needs.

#### MANDI Standard series

MANDI Standard Series support the seventh generation of the Bridgelux V Series that is a cost-effective light engine. MANDI Standard Series is the best for commercial and residential lighting applications where cost and quality are essential. Comes in 2700K, 3000K, 3500K, 4000K, 5000K, 5700 and 6500K CCT and in flux led lumens from 1313 to 2754 lumens delivering CRI(Ra) of 80 and 90 and high R values across all 15 CIE color samples. The MacAdam steps can be 2 or 3 up to 4000K, and 4 steps for 5000K, 5700K and 6500K.

#### MANDI Decor series

MANDI Decor Series is an exceptional light source for demanding applications. When a pure white with rich colors over the entire visual spectrum is needed, Decor Series is the perfect choice. MANDI Decor Series comes in 2700K and 3000K CCT and in flux led lumens from 1121 to 1783 lumens delivering CRI(Ra) of 97 and high R values across all 15 CIE color samples. The MacAdam steps are 2 for both CCTs.

### Features

- Supports the 7th generation V Series COBs of Bridgelux
- Optionally supports the Decor Series of Bridgelux
- LED power 12W and 17W
- LED lumens from 1121lm up to 2754lm
- CCT from 2700K up to 6500K
- CRI Ra 80, 90 and 97
- Low UGR : <21,9
- Two beam angles
- Available with non dimming driver or without driver
- Multiple driver choices, allowing different dimming controls
- Optional 3 hours emergency version with battery
- Comply with central DC emergency system (excluded DMX & Phase Cut drivers)
- Easy installation in MANDI system

### Areas of application

- Foyers
- Lobbies
- Receptions
- Retail shops
- Halls
- Museums
- Offices
- Conference rooms
- Galleries

### Specifications

<b>Light source</b>	LED COB by BRIDGELUX						
<b>Luminaire lumens</b>	See Photometric Data						
<b>Luminaire Power consumption</b> (Without Driver)	<b>CRI80, CRI90 :</b>		12,2W / 17,1W				
	<b>CRI97 :</b>		12,5W / 17,5W				
<b>Luminaire power consumption</b> (With driver)	<b>CRI80, CRI90 :</b>		14,0W / 19,6W				
	<b>CRI97 :</b>		14,3W / 20,0W				
<b>LED current</b>	<b>12,2W &amp; 12,5W :</b>		350mA				
	<b>17,1W &amp; 17,5W :</b>		500mA				
<b>LED Lumens</b>		<b>12,2W &amp; 12,5W</b>			<b>17,1W &amp; 17,5W</b>		
	<b>CRI</b>	<b>80</b>	<b>90</b>	<b>97</b>	<b>80</b>	<b>90</b>	<b>97</b>
	<b>2700K</b>	1575	1313	1121	2382	1985	1660
	<b>3000K</b>	1657	1362	1196	2481	2060	1783
	<b>3500K</b>	1690	1411		2556	2146	
	<b>4000K</b>	1706	1460		2581	2209	
	<b>5000K</b>	1758	1497		2659	2263	
	<b>5700K</b>	1788			2705		
	<b>6500K</b>	1821			2754		
<b>LED Efficacy (LPW)</b> (Without Driver)		<b>12,2W &amp; 12,5W</b>			<b>17,1W &amp; 17,5W</b>		
	<b>CRI</b>	<b>80</b>	<b>90</b>	<b>97</b>	<b>80</b>	<b>90</b>	<b>97</b>
	<b>2700K</b>	129	108	90	139	116	95
	<b>3000K</b>	136	112	96	145	121	102
	<b>3500K</b>	138	116		150	125	
	<b>4000K</b>	140	120		151	129	
	<b>5000K</b>	144	123		156	132	
	<b>5700K</b>	147			158		
	<b>6500K</b>	149			161		
<b>Luminaire Efficacy (LPW)</b>	See Photometric Data						
<b>Color Temperature (CCT)</b>	<b>CRI80 :</b> 2700K, 3000K, 3500K, 4000K 5000K, 5700K, 6500K						
	<b>CRI90 :</b> 2700K, 3000K, 3500K, 4000K 5000K						
	<b>CRI97 :</b> 2700K, 3000K						
<b>Color Rendering Index (Ra-8)</b>	CRI80, CRI90, CRI98						
<b>Gamut Area Index (GAI<sub>bb</sub>)</b>	<b>CRI80 :</b> GAI <sub>bb</sub> : 95 / R <sub>r</sub> : 85 / R <sub>g</sub> : 94						
<b>IES TM-30 (R<sub>r</sub>) (R<sub>g</sub>)</b>	<b>CRI90 :</b> GAI <sub>bb</sub> : 102 / R <sub>r</sub> : 90 / R <sub>g</sub> : 99						
	<b>CRI97 :</b> GAI <sub>bb</sub> : 106 / R <sub>r</sub> : 94 / R <sub>g</sub> : 100						
<b>Initial color consistency</b>	3 SDCM (2 SDCM upon request)						
<b>Lumen maintenance</b>	L70/B50 at 50000 hours						

<b>Product type</b>	Downlight spot for MANDI System						
<b>Ceiling type</b>	Plasterboard ceiling (For MANDI system)						
<b>Material</b>	Spot: aluminum die-cast						
	Heatsink: aluminum die-cast						
	Reflector: high gloss aluminum						
	Cover: tempered glass						
<b>Color</b>	White, Black						
<b>Optics</b>	High gloss reflector: 20°, 30°						
<b>Light distribution</b>	Rotationally symmetric						
<b>Driver</b>	Separate						
<b>Dimming</b>	1.10V, DALI, DMX, Phase Cut, Push switch						
<b>Power supply voltage</b>	220-240VAC /50-60Hz						
(Models with driver)							
<b>Power factor</b> (Models with driver)	≥ 0,9						
<b>Flicker ripple</b> (Models with driver)	See Driver operation						
<b>Unified Glare Rating (UGR)</b>	See Photometric Data						
<b>Ambient temperature range</b>	-10°C / +50°C						
<b>Options</b>	3 hours emergency lighting (EI3)						
	Wireless control. (Bluetooth)						
<b>Protection class</b>	Body: CLASS III, Driver: CLASS II						
<b>Ingress Protection</b>	IP40						
<b>Mechanic impact</b>	IK03						
<b>Connection</b>	Cable 2 x 0,5mm <sup>2</sup> with ferrules						
<b>Dimensions</b>	See Dimensions & Weight						
<b>Weight</b>	See Dimensions & Weight						
<b>Compliance</b>	LVD directive, EMC directive, RoHS						
<b>Remarks</b>	CRI90 & CRI97 are available upon request						
<b>Luminaire Energy Class</b>		<b>14,0W &amp; 14,3W</b>			<b>19,6W &amp; 20,0W</b>		
	<b>CRI</b>	<b>80</b>	<b>90</b>	<b>97</b>	<b>80</b>	<b>90</b>	<b>97</b>
	<b>2700K</b>	A+	A	A	A+	A	A
	<b>3000K</b>	A+	A+	A	A+	A+	A
	<b>3500K</b>	A+	A+		A+	A+	
	<b>4000K</b>	A+	A+		A+	A+	
	<b>5000K</b>	A+	A+		A+	A+	
	<b>5700K</b>	A+			A+		
<b>6500K</b>	A+			A+			

- Notes.**
- Luminous flux values are typical.
  - Absolute range of luminous flux is ±10% of typical value.
  - Specifications are subject to change without notice

### Driver operation

#### 1..10Vdc Drivers

- Light regulation 0/2 - 100%.
- Current Ripple < 3%. (At full)
- Use 1..10Vdc electronic or 100Kohm potentiometer. (I ≤ 1mA).
- Maximum length of the cable, must be max 20m.

#### DALI Drivers

- Light regulation 0/2 - 100%.
- Current Ripple < 3%. (At full)
- Memory function for sets or light groups.
- Recall of stored functions.
- Compatible with standard DALI interfaces.

#### DMX Drivers

- Light regulation 0/1 - 100%.
- Current Ripple < 3%. (At full).
- Compatible with standard DMX/RDM protocol.

#### Phase Cut Drivers

- Light regulation 0/2 - 100%.
- Compatible with Leading edge (Triac) and Trailing edge (IGBT) dimmers.

#### PUSH switch Drivers (mains voltage)

- Light regulation 0/2 - 100%. Current Ripple < 3% (At full)
- Short push to turn on and off.
- Longer push to increase or decrease light intensity.
- Regulation automatically stops at minimum and maximum values.
- For another on, regulation or off command, release the push button and give the desired command again.
- Possibility to use PUSH function to 4/5 drivers.
- Maximum length of the cable, from push button to last driver, must be max. 15 m. In case of applications where the cable is longer than 15 mt, keep this separate from the 220 - 240 Volt mains cable
- ATTENTION: only use normally open push buttons with no incorporated warning light.

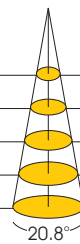
## Photometric data

\*Note: Use the coefficients, to calculate the Luminous flux, Efficacy and Illuminance for CRI90, CRI97.  
All values below, correspond to CRI80.

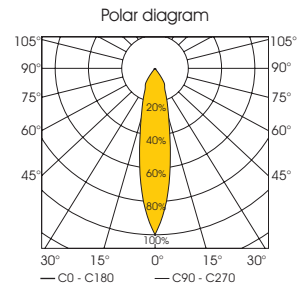
<b>Power 14W</b>	2700K	3000K	3500K	4000K	5000K	5700K	6500K
CRI90 Coeff.*	0.83	0.82	0.84	0.85	0.85		
CRI97 Coeff.*	0.71	0.72					

Luminaire lm	1189 lm	1251 lm	1275lm	1288 lm	1327 lm	1350 lm	1374 lm
Efficacy (lm/W)	85	89	91	92	95	96	98
UGR : <19.9							

Illuminance	1m	4060 lx	4270 lx	4355 lx	4398 lx	4530 lx	4609 lx	4693 lx	Cone Diameter 0.37m 0.73m 1.10m 1.47m 1.84m
	2m	1015 lx	1068 lx	1089 lx	1100 lx	1133 lx	1152 lx	1173 lx	
	3m	451 lx	474 lx	484 lx	489 lx	503 lx	512 lx	521 lx	
	4m	254 lx	267 lx	272 lx	275 lx	283 lx	288 lx	293 lx	
	5m	162 lx	171 lx	174 lx	176 lx	181 lx	184 lx	188 lx	



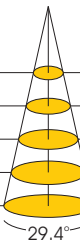
Reflector 20° (typ.)



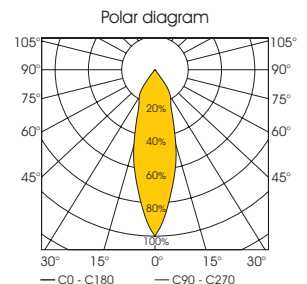
<b>Power 14W</b>	2700K	3000K	3500K	4000K	5000K	5700K	6500K
CRI90 Coeff.*	0.83	0.82	0.83	0.85	0.85		
CRI97 Coeff.*	0.71	0.72					

Luminaire lm	1151 lm	1211 lm	1235 lm	1246 lm	1284 lm	1306 lm	1330 lm
Efficacy (lm/W)	82	86	88	89	92	93	95
UGR : <20.3							

Illuminance	1m	2868 lx	3017 lx	3077 lx	3106 lx	3201 lx	3256 lx	3315 lx	Cone Diameter 0.52m 1.05m 1.57m 2.10m 2.62m
	2m	717 lx	754 lx	769 lx	777 lx	800 lx	814 lx	829 lx	
	3m	319 lx	335 lx	342 lx	345 lx	356 lx	362 lx	368 lx	
	4m	179 lx	189 lx	192 lx	194 lx	200 lx	204 lx	207 lx	
	5m	115 lx	121 lx	123 lx	124 lx	128 lx	130 lx	133 lx	



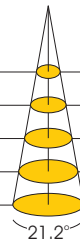
Reflector 30° (typ.)



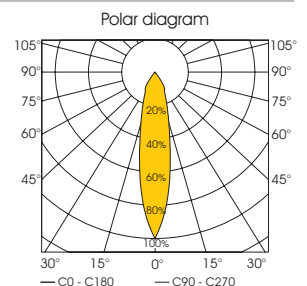
<b>Power 19.6W</b>	2700K	3000K	3500K	4000K	5000K	5700K	6500K
CRI90 Coeff.*	0.83	0.83	0.83	0.86	0.85		
CRI97 Coeff.*	0.70	0.70					

Luminaire lm	1759 lm	1833 lm	1888 lm	1906 lm	1964 lm	1998 lm	2034 lm
Efficacy (lm/W)	90	94	96	97	100	102	104
UGR : <20.8							

Illuminance	1m	6160 lx	6415 lx	6610 lx	6674 lx	6875 lx	6994 lx	7121 lx	Cone Diameter 0.37m 0.75m 1.12m 1.50m 1.87m
	2m	1540 lx	1604 lx	1653 lx	1669 lx	1719 lx	1749 lx	1780 lx	
	3m	684 lx	713 lx	734 lx	742 lx	764 lx	777 lx	791 lx	
	4m	385 lx	401 lx	413 lx	417 lx	430 lx	437 lx	445 lx	
	5m	246 lx	257 lx	264 lx	267 lx	275 lx	280 lx	285 lx	



Reflector 20° (typ.)



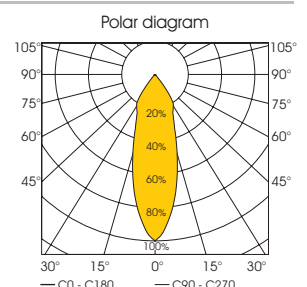
<b>Power 19.6W</b>	2700K	3000K	3500K	4000K	5000K	5700K	6500K
CRI90 Coeff.*	0.83	0.83	0.83	0.86	0.85		
CRI97 Coeff.*	0.70	0.70					

Luminaire lm	1869 lm	1947 lm	2006 lm	2026 lm	2087 lm	2123 lm	2161 lm
Efficacy (lm/W)	95	99	102	103	106	108	110
UGR : <21.9							

Illuminance	1m	4075 lx	4245 lx	4373 lx	4416 lx	4549 lx	4628 lx	4712 lx	Cone Diameter 0.55m 1.09m 1.64m 2.19m 2.74m
	2m	1019 lx	1061 lx	1093 lx	1104 lx	1137 lx	1157 lx	1178 lx	
	3m	453 lx	472 lx	486 lx	491 lx	505 lx	514 lx	524 lx	
	4m	255 lx	265 lx	273 lx	276 lx	284 lx	289 lx	295 lx	
	5m	163 lx	170 lx	175 lx	177 lx	182 lx	185 lx	188 lx	



Reflector 30° (typ.)



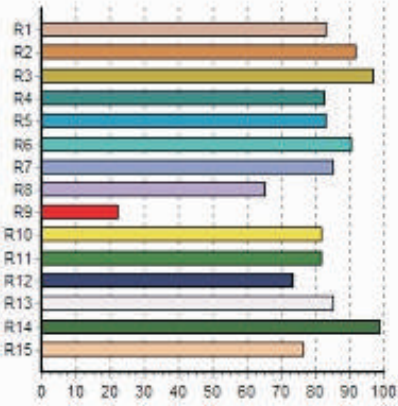
### Color metric data

#### Standard models CRI 80

Typical values for 3000K

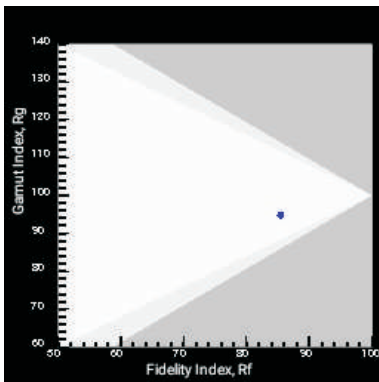
Color Rendering Index: CRI(Ra): 83 CRI(Re): 79

R values

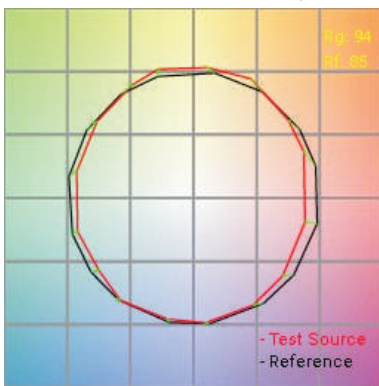


Gamut Area Index: GAI(BB8): 89 GAI(BB15): 95  
 IES TM-30-15 Fidelity Index: Rf 85  
 IES TM-30-15 Gamut Index: Rg 94

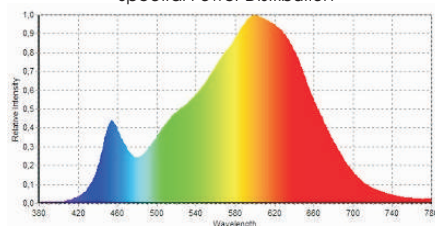
IES TM-30-15 Rf Rg Plot



IES TM-30-15 Color Vector Graphic



Spectral Power Distribution

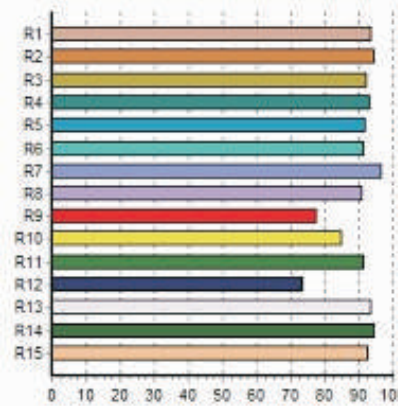


#### Standard models CRI 90

Typical values for 3000K

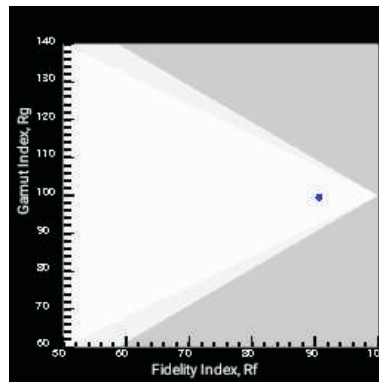
Color Rendering Index: CRI(Ra): 93 CRI(Re): 90

R values

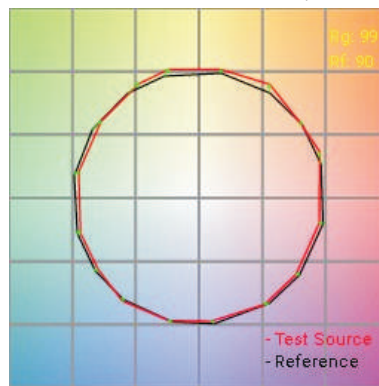


Gamut Area Index: GAI(BB8): 97 GAI(BB15): 102  
 IES TM-30-15 Fidelity Index: Rf 90  
 IES TM-30-15 Gamut Index: Rg 99

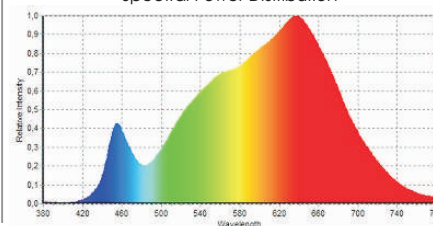
IES TM-30-15 Rf Rg Plot



IES TM-30-15 Color Vector Graphic



Spectral Power Distribution

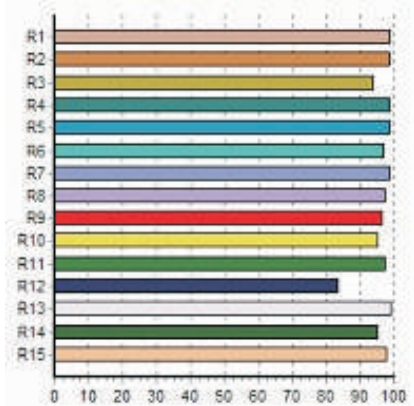


#### Decor models CRI 97

Typical values for 3000K

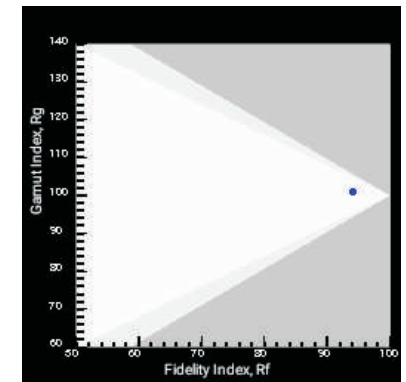
Color Rendering Index: CRI(Ra): 98 CRI(Re): 97

R values

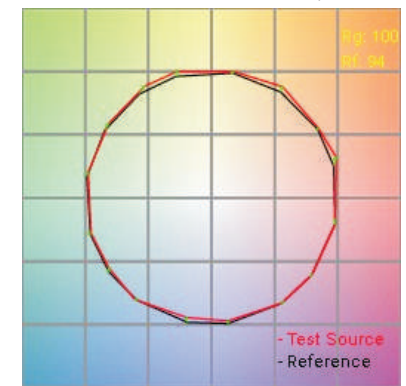


Gamut Area Index: GAI(BB8): 102 GAI(BB15): 106  
 IES TM-30-15 Fidelity Index: Rf 94  
 IES TM-30-15 Gamut Index: Rg 100

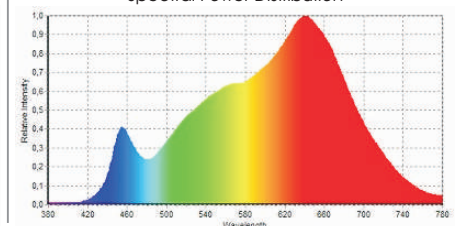
IES TM-30-15 Rf Rg Plot



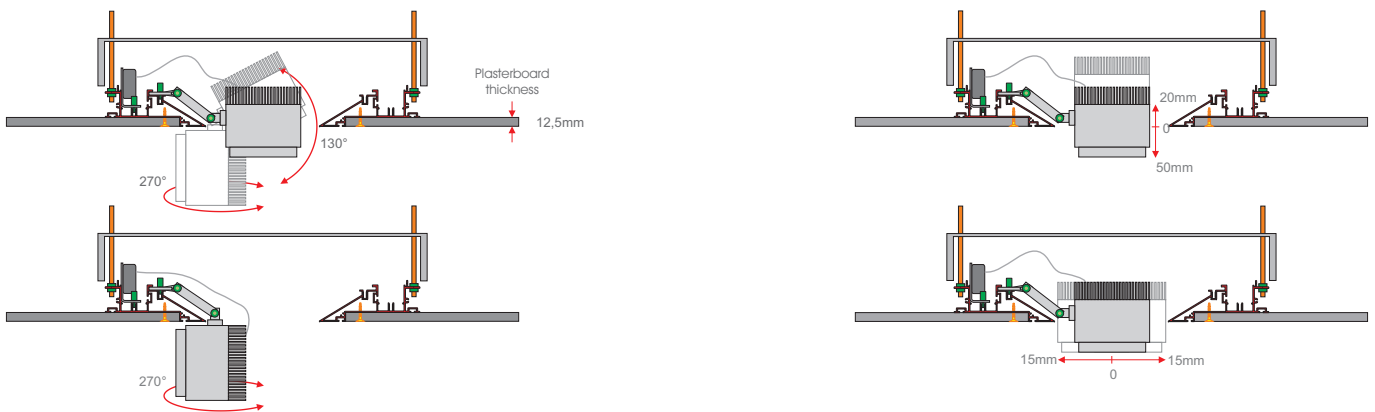
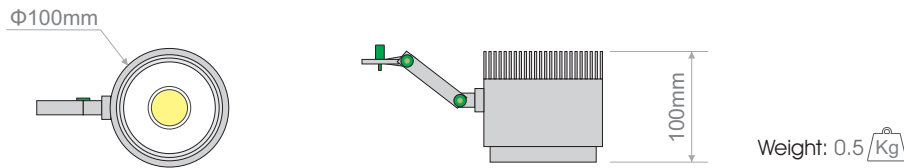
IES TM-30-15 Color Vector Graphic



Spectral Power Distribution



## Dimensions & weights



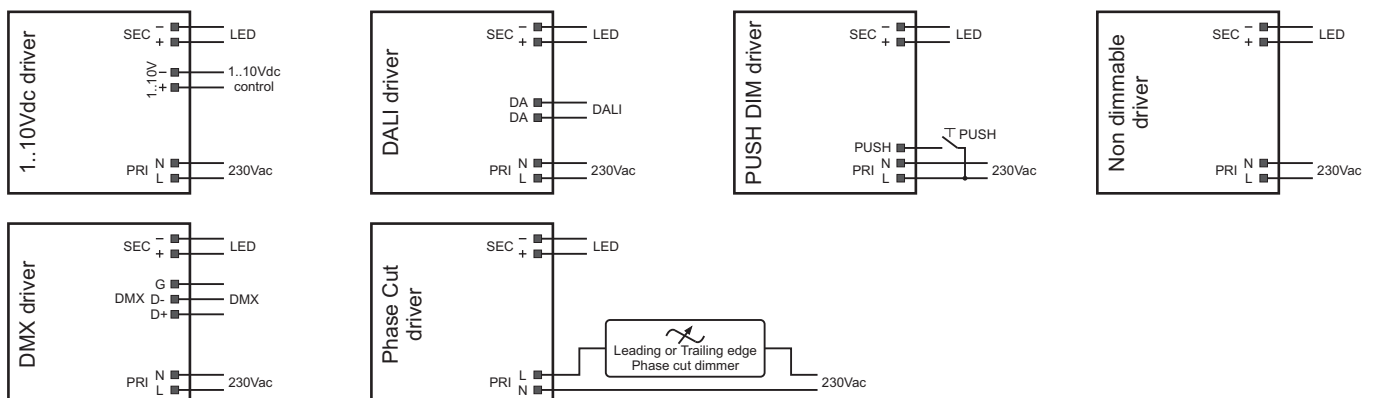
## Electrical Installation

### Maximum loading of automatic circuit breakers

Model power	14,0/14,3W	19,6/20,0W
Circuit Braker	B10A / B16A	B10A / B16A
Non dimmable driver	31 / 50	31 / 50
1..10Vdc driver	31 / 50	31 / 50
DALI driver	31 / 50	31 / 50
PUSH dim driver	31 / 50	31 / 50
DMX driver	23 / 38	9 / 15
Phase Cut driver	31 / 50	31 / 50

Note. Actual quantities may differ due to used circuit breaker types and installation environment.

### Wiring diagrams



### Notes.

- Wiring diagrams are for drivers which are supplied with MANDI, by ELECTRON.
- In PHASE-CUT models, when a Leading edge dimmer is used, the total power of PHASE-CUT MANDI must not exceed the 1/5 of the dimmer power.
- The DMX and PHASE-CUT drivers are not suitable for central DC emergency systems.

## Installation guide

In order to fasten the spot in Mandi profile, first you have to completely install the profile on the plasterboard (see MANDI SYSTEM installation guide).

### 1 Electrical connections



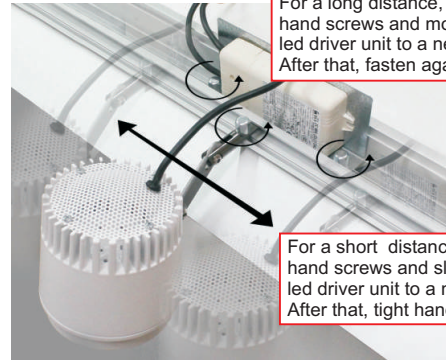
**Attention:**  
Hanging the spot from its wires, is not allowed.



**Step 1**  
Connect spot's wires, Brown(+) & Blue(-) to led driver unit.

**Step 2**  
Connect led driver unit to mains power supply.

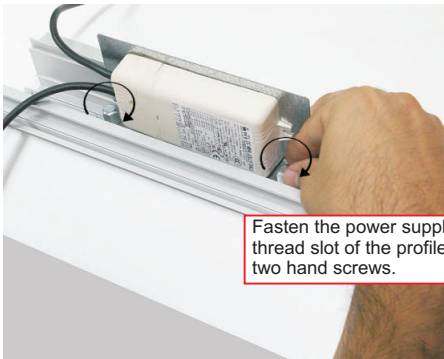
### 4 Position Adjustment



For a long distance, unscrew all the hand screws and move both spot and led driver unit to a new position. After that, fasten again.

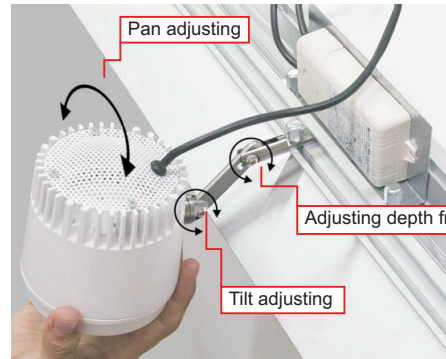
For a short distance, untight all the hand screws and slide both spot and led driver unit to a new position. After that, tight hand screws again.

### 2



Fasten the power supply unit into the rear thread slot of the profile, by screwing the two hand screws.

### 5 Tilt and Depth Adjustment

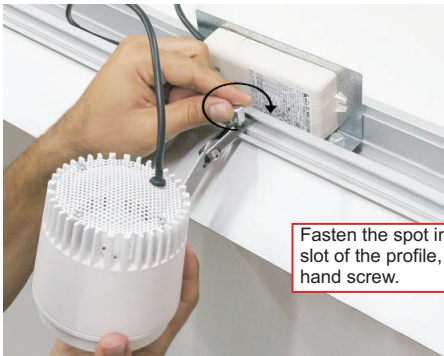


Pan adjusting

Adjusting depth from plasterboard

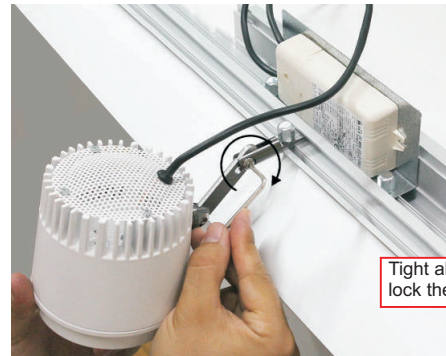
Tilt adjusting

### 3



Fasten the spot into the front thread slot of the profile, by screwing the hand screw.

### 6



Tight all the allen bolts, to lock the adjustment.

## Ordering code information

Model	Colour Temperature	LED Lumen	Type	CRI	Beam Angle	Colour	Dimming Option	Accessories
<b>MANDI 12.2W</b> (MANDI 12)	(27B1575)	2700K - 1575lm	Adjustable	(80) 80				
	(30B1657)	3000K - 1657lm						
	(35B1690)*	3500K - 1690lm						
	(40B1706)	4000K - 1706lm						
	(50B1758)*	5000K - 1758lm						
	(57B1788)	5700K - 1788lm						
<b>MANDI 17.1W</b> (MANDI 17)	(27B2382)	2700K - 2382lm	Adjustable	(90) 90				<b>COVER</b> (0X) Standard (1X) Diffuser (2X) Honeycomb ↓ (XX) <b>EXTRAS</b> (X0) No Extras (X1) Emergency Kit
	(30B2481)	3000K - 2481lm						
	(35B2556)*	3500K - 2556lm						
	(40B2581)	4000K - 2581lm						
	(50B2659)*	5000K - 2659lm						
	(57B2705)	5700K - 2705lm						
<b>MANDI 12.2W</b> (MANDI 12)	(27B1313)	2700K - 1313lm	Adjustable	(90) 90				
	(30B1362)	3000K - 1362lm						
	(35B1411)*	3500K - 1411lm						
	(40B1460)	4000K - 1460lm						
<b>MANDI 17.1W</b> (MANDI 17)	(27B1985)	2700K - 1985lm	Adjustable	(90) 90				
	(30B2060)	3000K - 2060lm						
	(35B2134)*	3500K - 2134lm						
	(40B2209)	4000K - 2209lm						
<b>MANDI 12.5W</b> (MANDI 12)	(27B1121)	2700K - 1121lm	Adjustable	(97) 97				
	(30B1196)	3000K - 1196lm						
<b>MANDI 17.5W</b> (MANDI 17)	(27B1660)	2700K - 1660lm	Adjustable	(97) 97				
	(30B1783)	3000K - 1783lm						

(\*) Colour temperatures at 3500K, 5000K, and 6500K are available upon request.

(\*\*) The wireless dimming option includes driver and Bluetooth dimming accessory.

### Ordering Code Example:

**MANDI 17 - 30B2060 - AD - 90 - 30 - BL - A1 - 01**

Model

Colour Temperature

LED Lumen

Type

Colour Rendering

Beam Angle

Colour

Dimming Option

Accessories

Means: MANDI 17.1W, 3000K, 2060lm, Adjustable, CRI90, 30°, Black, dimming with 1..10V control and Emergency kit.



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At the end of its lifetime, MANDI must be delivered in a special waste collection center. The improper disposal can cause damages for the environment and poses dangers for the human health.