

## LED 2D



### Product information

LED 2D lamp offers safe, reliable and affordable energy saving alternative to CFL 2D lamps used in bulkhead fixtures. LED 2D lamps provide replacement solution for 16W and 28W fluorescent 2D lamps, either as a direct retrofit replacement on magnetic ballast (CCG types) or electronic ballast (ECG types), or as rewire replacement operating directly on AC mains.

Direct retrofit replacement can be completed simply without tools or costly upgrade and the robust middle part will ensure easy handle during installation. The LED rewire replacement installation must be done by a qualified electrician only and all safety instruction must be followed to avoid a risk of injury or property damage. The upgraded fixture will deliver huge energy saving and reduced operating cost driven by the increased life and the classic 2D shape.

### Features

- Energy Saving up to 67% versus CFL 2D lamps
- Rewire replacement solution completely eliminates ballast losses and compatibility risks.
- High light output of 750-1550 lumens
- Available in 2700, 3000, 3500 and 4000K (not all combinations)
- Optimized beam angle: 120° to 140°

### Benefits

#### Long life

- 40,000 hours rated life (L70)
- Lasts 2.5-3x longer than typical CFL 2D lamp

#### High efficiency

- Outstanding efficiency up to 128lm/W
- A+ to A++ energy efficiency rating
- Uses 67% less energy than 16W CFL 2D (6.5W versus 16W Energy Consumption) and 63% less energy than 28W CFL 2D (12.5W versus 28W Energy Consumption) on the rewire replacement version

#### High Quality lighting effect

- High uniformity of light, create elegant lighting atmosphere for hospitality & commercial applications
- Advanced optics to deliver good light distribution
- Available with a CRI of 80

#### Environmentally Conscious

- Energy efficient lamp that contain no Lead or Mercury

### Application areas



Office



Hospitality

## Standards

EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting
EN 61000-3-2	Limits for harmonic current emissions (equipment rated current ≤16A)
EN 61000-3-3	Limitation of voltage fluctuations and flicker in low-voltage supply systems (equipment rated current ≤16A)
EN 61547	Specification for equipment for general lighting purposes. EMC Immunity requirements
EN 62493	Assessment of lighting equipment related to human exposure to electromagnetic fields
IEC 60061-1	Lamps caps and holders together with gauges for the control of interchangeability and safety
EN 62471	Photobiological safety of lamps and lamp systems
IEC TR 62471-2	Photobiological safety of lamps and lamp systems – Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety
IEC TR 62778	Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires
EN 62560	Self-ballasted LED-lamps for general lighting services by voltage > 50 V – Safety specifications

## Specification summary

Rated Wattage (W)	Cap	CCT (K)	Product Description	Rated Lumens (lm)	Rated Life L70 (h)	CRI (Ra)	Energy Efficiency Class	Ballast compatibility	Operating position	Pack Qty (pcs)	Product code
6,5	GR8	2700	LED 2D2P 6.5W/CCG/827/GR8 TU BX1/10	750	40 000	80	A+	magnetic	universal	10	93110758
6,5	GR8	3000	LED 2D2P 6.5W/CCG/830/GR8 TU BX1/10	770	40 000	80	A+	magnetic	universal	10	93110759
6,5	GR8	3500	LED 2D2P 6.5W/CCG/835/GR8 TU BX1/10	800	40 000	80	A++	magnetic	universal	10	93110760
6,5	GR8	4000	LED 2D2P 6.5W/CCG/840/GR8 TU BX1/10	830	40 000	80	A++	magnetic	universal	10	93110764
12,5	GR10q	2700	LED 2D4P 12.5W/ECG/827/GR10q TU BX1/10	1400	40 000	80	A+	electronic	universal	10	93110767
12,5	GR10q	3500	LED 2D4P 12.5W/ECG/835/GR10q TU BX1/10	1500	40 000	80	A+	electronic	universal	10	93110766
12,5	GR10q	4000	LED 2D4P 12.5W/ECG/840/GR10q TU BX1/10	1550	40 000	80	A+	electronic	universal	10	93110765
12,5	GR10q	2700	LED 2D4P 12.5W/CCG/827/GR10q TU BX1/10	1400	40 000	80	A+	magnetic	universal	10	93110762
12,5	GR10q	3500	LED 2D4P 12.5W/CCG/835/GR10q TU BX1/10	1500	40 000	80	A+	magnetic	universal	10	93110761
12,5	GR10q	4000	LED 2D4P 12.5W/CCG/840/GR10q TU BX1/10	1550	40 000	80	A+	magnetic	universal	10	93110763
6,5	GR8	3500	LED 2D2P 6.5W/835/GR8/220-240 TU BX1/10	800	40 000	80	A++	-	universal	10	93117376
6,5	GR8	4000	LED 2D2P 6.5W/840/GR8/220-240 TU BX1/10	830	40 000	80	A++	-	universal	10	93117379
12,5	GR10q	3500	LED 2D4P 12.5W/835GR10q/220-240TU BX1/10	1500	40 000	80	A++	-	universal	10	93117377
12,5	GR10q	4000	LED 2D4P 12.5W/840GR10q/220-240TU BX1/10	1550	40 000	80	A++	-	universal	10	93117378

## Electrical and photometric characteristics

<b>Ambient temperature range</b>	-20°C to +40°C
<b>Number of switching cycles</b>	50.000
<b>Lumen maintenance at B50</b>	70%
<b>Beam angle</b>	120° to 140°
<b>Dimmable</b>	No
<b>Fixture rating</b>	can be used in open and enclosed fixtures
<b>Starting time</b>	<0.5sec
<b>Weight</b>	90 and 95g for 6.5W; 140g for 12.5W ECG / 155g for 12.5W CCG and 160g for 12.5W AC

## Operation and maintenance

- Store and use the lamps the same way as standard compact fluorescent lamps.
- Lamps should be kept free from contamination.
- Switch off mains supply before installing/removing lamp.
- Good condition of the lamp-holder contacts is important to ensure proper operation of lamp.
- For 12.5W 2D4P CCG, CFL starter should be changed to dummy starter before installation.
- CCG lamp can be operated only on magnetic ballast, ECG lamp can be operated only on electronic ballast, AC rewire replacement lamp can only be operated directly from mains voltage.
- List of approved ballasts can be found on [www.tungstram.com/LEDPlugIn-compatibility](http://www.tungstram.com/LEDPlugIn-compatibility).
- Not for use in emergency lighting circuits.
- The LED rewire replacement installation must be done by a qualified electrician only and all safety instruction must be followed to avoid a risk of injury or property damage.

## Dimensions (mm)

