

LED Road R250

The new LED Road R250 luminaire features an advanced LED optical system that provides improved horizontal and vertical uniformity, reduced glare and improved lighting control compared with traditional metal halide lighting systems.

It provides a 30 - 50% reduction in system energy consumption and an estimated service life of more than 10 years (50,000 hour rated life), which means low maintenance. Reduced glare improves safety and visual comfort.

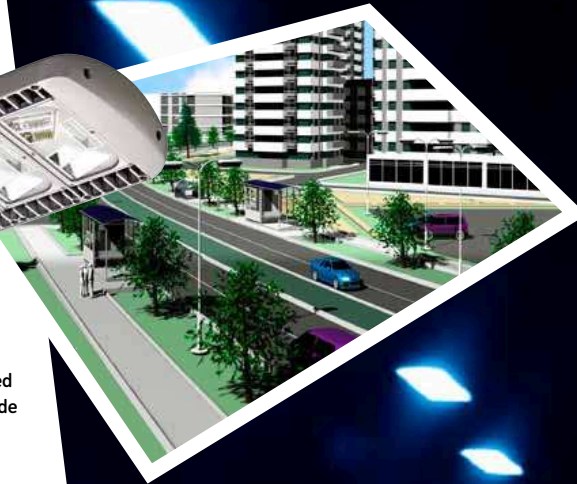
- High efficiency to meet rigorous photometric requirements
- System rating 50,000 hours L80 to reduce maintenance
- White light with desirable colour temperature 6000K and 4000K with CRI 70 for visual comfort
- **Integral dimmable analogue driver for remote monitoring and control**
- IP65 for both optical and gear compartment
- System consumption from 39W to 237W (scalable every 20W)
- Meet 2G vibration standards

LED Tunnel

GE's LED Tunnel luminaire is ideal for efficient lighting of low speed tunnels as well as underpasses, parking garages and industrial areas.

High performance optics and a high CRI light source create a safe environment for traffic with uniform light, greatly reduced dazzle and improved visibility. The long life of LEDs mean an outstanding six year life.

- Only 90W system consumption
- CRI 70 and 5700K
- Hermetically sealed to IP66
- Choice of optics
- Die cast aluminium housing
- **Integral dimmable analogue driver**



Road and tunnel

Photometric performance and low maintenance are critical factors in designing lighting for traffic and GE's LED light engine provides the perfect light source for making this happen. The LED road and LED Tunnel fittings make full use of the capability of GE's unique LED light engines to meet these demands.





Case study: urban tunnel

Lighting parameters

- 60km/h speed
- Length 1000m
- Follow European standard requirements (CIE 88 2004)
- Required luminance : 2.5cd/m²
- Required U_o: 0.4
- Required U_l: 0.6

	System consumption (W)	Lane	Width (m)	Fixture Spacing (m)	Height (m)	Luminance (cd/m ²)	UL	%Tl	Eav (lx)	U _o	S (m ²)	Lux/(W/ m ²)
Tunnel LED symmetric	95	2	8	7.5	5.5	2.96	0.87	11.83	43.33	0.67	60	27.37
PFE-400/SYM HPS150	170					4.19	0.9	4.86	80.79	0.78	60	28.35

Measuring the savings

System life comparison			
Light source	HPS	T5	Tunnel LED
Lumen / watt	110	86	100
Lamp life [h]	28,500	36,000	50,000
Relamping hours	20,000	36,000	0
LPD (W/m ²)			
Site wattage [W]	17,100	16,823	12,667
Energy cost @ €0.11/kWh	16,447	16,210	12,205
Lifetime site energy cost [€]	207,252	203,899	153,520
Maintenance			
Maintenance cost/luminaire/year [€]	70	50	15
Annual site maintenance cost [€]	7000	16666	2000
Total site maintenance cost	88,045	209,631	25,155
Lifetime calculation			
Lifetime maintenance cost [€]	88,045	209,631	25,155
Lifetime energy cost [€]	207,252	230,899	153,520
Total cost of ownership [€]	295,298	413,531	178,676

LED photometry means:

- Fewer lumens to meet the requirements
- Improved uniformity on the road and reduced hot spot on the walls
- Reduced site wattage
- Payback in less than 4 years



Case study: 2-lane roadway

Lighting parameters

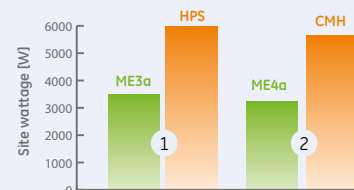
- Road type: 1122m, 2 lanes, 4m width
- Luminaire layout: Unilateral
- Mounting height: 8m
- ME4a Class
- L_{av} >=0.75cd/m²
- U_l >=0.6
- Tl <=15Lux
- U_o >=0.4

Comparing light sources

Family	Lamp	Colour Temp. [K]	System Wattage [W]	Lumen output	luminaire efficiency (lm/W)	Pole spacing [m]	Selling Price [€]	Pay-back [years]
GE EURO-2	CMH	3000	171	14000	81.87	31	200	
GE R-250	LED	4300	100	6413	64.13	31	463	3.98

- Less than 4 years payback
- R250 allows for a retrofit with 4300K CCT
- R250 provides more than 40% energy saving versus CMH

LED R250 road light vs 150W CMH/HPS

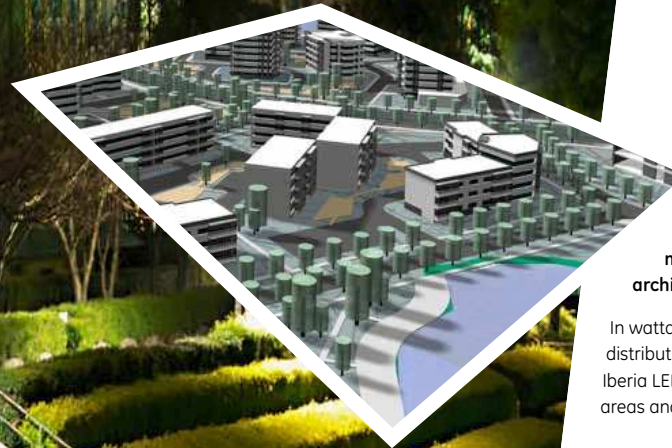


- ME4a compared with Euro-2 150W CMH
- ME3a compared with Euro-2 150W HPS

- In both cases R250 provides more than 40% energy savings
- In both cases payback lower than 4 years

Residential and pedestrian areas

The lighting of public areas requires fittings that are aesthetically pleasing, as well as functional and efficient. Iberia and Duna incorporate GE's state-of-the-art LEDs with appealing fitting designs that enhance where we live and work, and make them safe.



Iberia LED

Iberia LED combines a stylish design with a wide range of different mounting options. It is a versatile luminaire suitable for architectural and urban environments, as well as roadway lighting.

In wattages up to 90W, it has a choice of symmetrical and asymmetrical distribution. Coupled with the other options that are available, this makes Iberia LED a highly versatile luminaire for amenity lighting, pedestrian areas and squares.

- Integral dimmable analogue driver for remote monitoring and control
- Symmetrical or asymmetrical distribution
- Die-cast aluminium housing
- Wide range of accessories
- 85% lumen maintenance at 50,000 hours
- Limited wattage up to 90W
- 5700 and 4100K



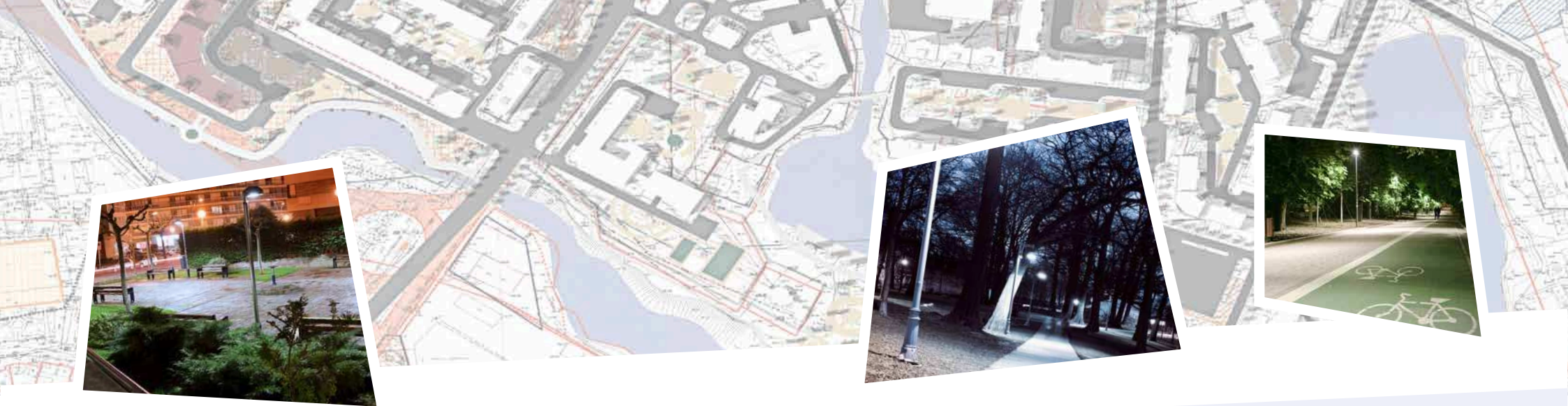
Duna LED

The perfect combination of aesthetics and functionality, Duna LED is ideal for efficient lighting of residential areas, parks and gardens, commercial centres, pedestrian walkways and squares.

Duna LED is a decorative luminaire designed as an attractive truncated cone. It uses LED technology up to 88W with symmetrical and asymmetrical distributions.

- LED technology up to 88W
- Symmetrical and asymmetrical distribution
- CRI 70, CCT 4100 and 5700K
- Die-cast aluminium housing
- Upper housing: one-piece spun aluminium
- Integral dimmable analog driver for remote monitoring and control





Case study: two urban park areas

Location

5900m² urban park and pedestrian area

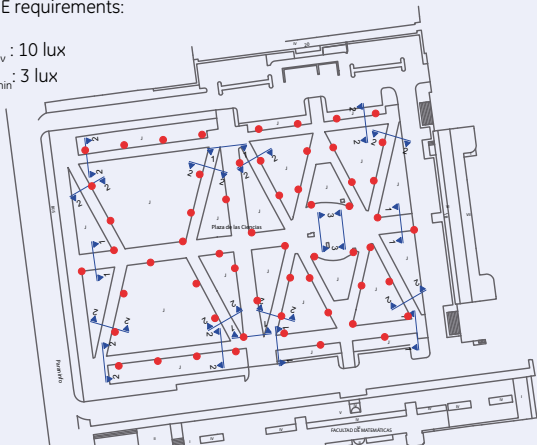
Two cycle ways with different widths: 5.3m and 2.5m.

Requirement

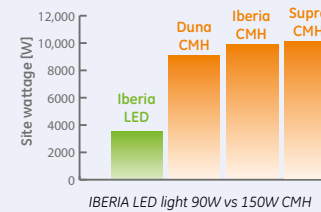
Lighting designs optimised to meet these CIE requirements:

E_{av} : 10 lux

E_{min} : 3 lux



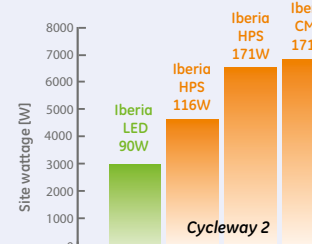
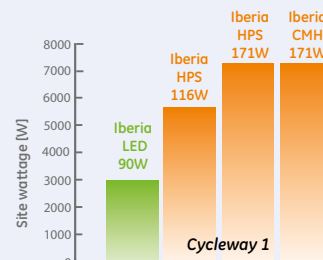
Comparing light sources - park and pedestrian area



	DUNA CMH	IBERIA CMH	SUPRA CMH	IBERIA LED (III)
System Wattage [W]	171	171	171	95
Number of luminaires	58	59	53	40
Site Consumption [W]	9918	10,089	9063	3800
Energy increase versus LED	61%	62%	58%	
Re-lamping	3.5	3.5	3.5	12.5
W/m ²	1.68	1.7	1.53	0.61
Payback final user	Not needed initial investment is higher	Less than one year	Less than four years	

- DUNA CMH – initial investment is higher than using LED solution
- IBERIA & SUPRA CMH – initial investment is lower than using LED, payback period is less than one year for the Iberia and 4 years for Supra
- 60% energy saving using LED instead of CMH

Comparing light sources - two cycleways



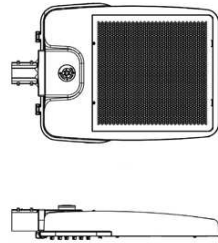
Section	Spacing	m ²	Height [m]	Luminaire	System [W]	Um	UNDS [1000 m]	Installation [W]
5.3m wide	31	164.3	4.5	IBERIA/LED T-3	95	0.28	33	3160
	24	127.2		IBERIA/VT (HPS)	171	0.11	43	7296
	21	111.3		IBERIA/VT (HPS)	116	0.13	49	5640
2.5m wide	24	127.2	4.5	IBERIA/VT (CMH)	171	0.12	43	7296
	31	77.5		IBERIA/LED T-3	95	0.27	33	3160
	27	67.5		IBERIA/VT (HPS)	171	0.08	38	6504
	26	65		IBERIA/VT (HPS)	116	0.10	39	4578
	26	65		IBERIA/VT (CMH)	171	0.10	39	6748

Choosing LED means:

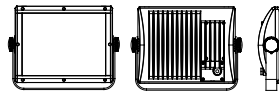
- Higher spacing
- Better efficiency using LED (lux.m²/W)
- Lower site consumption

Product data

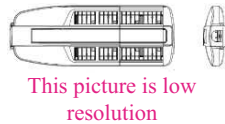
Product description	Number of modules	Optics	Number of LEDs	wattage [W]	Product code	Product code
LED Area Lighter						
ALE SINGLE/ASY3/50/CCT	SINGLE	Asymmetric Forward	24	50	524835	524852
ALE SINGLE/ASY3/63/CCT	SINGLE	Asymmetric Forward	32	63	524836	524853
ALE SINGLE/ASY3/76/CCT	SINGLE	Asymmetric Forward	40	76	524837	524854
ALE SINGLE/ASY3/89/CCT	SINGLE	Asymmetric Forward	48	89	524838	524855
ALE SINGLE/ASY3/101/CCT	SINGLE	Asymmetric Forward	56	101	524839	524856
ALE DOUBLE/ASY3/126/CCT	DOUBLE	Asymmetric Forward	64	126	524840	524857
ALE DOUBLE/ASY3/139/CCT	DOUBLE	Asymmetric Forward	72	139	524841	524858
ALE DOUBLE/ASY3/152/CCT	DOUBLE	Asymmetric Forward	80	152	524842	524859
ALE DOUBLE/ASY3/165/CCT	DOUBLE	Asymmetric Forward	88	165	524843	524860
ALE DOUBLE/ASY3/178/CCT	DOUBLE	Asymmetric Forward	96	178	524844	524861
ALE DOUBLE/ASY3/190/CCT	DOUBLE	Asymmetric Forward	104	190	524845	524862
ALE DOUBLE/ASY3/202/CCT	DOUBLE	Asymmetric Forward	112	202	524846	524863
ALE DOUBLE/SM5/101/CCT	DOUBLE	Symmetric Medium	48	101	524847	524864
ALE DOUBLE/SM5/126/CCT	DOUBLE	Symmetric Medium	64	126	524848	524865
ALE DOUBLE/SM5/152/CCT	DOUBLE	Symmetric Medium	80	152	524849	524866
ALE DOUBLE/SM5/178/CCT	DOUBLE	Symmetric Medium	96	178	524850	524867
ALE DOUBLE/SM5/202/CCT	DOUBLE	Symmetric Medium	112	202	524851	524868



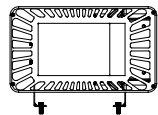
Optics	Type	Colour temp.	System consumption	Suggested application
LED Floodlight				
Narrow Spot NEMA (1x1)	Symmetric		90W	Architectural, Accent Lighting
Medium Flood NEMA (5x5)	Asymmetric Medium	6000, 4300, 3000K	90W	Site, Façade Lighting
Wide Flood NEMA 16x5	Asymmetric Wide		90W	Site, Façade Lighting
Poster NEMA (6x5)	Asymmetric Medium		90W	Sign Lighting
Bulletin NEMA (5x4)	Asymmetric Wide		90W	Sign Lighting



Product description	Number of modules	Optics	Wattage [W]
LED Road R250			
R250 SINGLE/ASY3/39/CCT	SINGLE	Asymmetric Type III	39
R250 SINGLE/ASY3/59/CCT	SINGLE	Asymmetric Type III	59
R250 DOUBLE/ASY3/78/CCT	DOUBLE	Asymmetric Type III	78
R250 DOUBLE/ASY3/98/CCT	DOUBLE	Asymmetric Type III	98
R250 DOUBLE/ASY3/118/CCT	DOUBLE	Asymmetric Type III	118
R250 TRIPLE/ASY3/138/CCT	TRIPLE	Asymmetric Type III	138
R250 TRIPLE/ASY3/158/CCT	TRIPLE	Asymmetric Type III	158
R250 TRIPLE/ASY3/178/CCT	TRIPLE	Asymmetric Type III	178
R250 QUADRUPLE/ASY3/197/CCT	QUADRUPLE	Asymmetric Type III	197
R250 QUADRUPLE/ASY3/217/CCT	QUADRUPLE	Asymmetric Type III	217
R250 QUADRUPLE/ASY3/237/CCT	QUADRUPLE	Asymmetric Type III	237



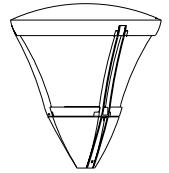
Wattage [W]	Product description	Optics	Product code
Tunnel LED			
90	TUNNEL LED/AM ASY3	Asymmetric Medium	524678
90	TUNNEL LED/AW ASY2	Asymmetric Wide	524677
90	TUNNEL LED/SY SYM5	Symmetric	233003



Wattage [W]	Product description	Optics	Product code
Iberia LED			
90	IBERIA/E/LED ASY3/41 GRIS 150 SABLE	Type III	78106
63	IBERIA/E/LED ASY4/41 GRIS 150 SABLE	Type IV	78112
90	IBERIA/E/LED SYM5/41 GRIS 150 SABLE	Type V	78107

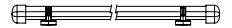


Wattage [W]	Product description	Colour temperature	Optics	Product code
Duna LED				
88	DUNA LED SYM5/41	4100	Type V	524553
88	DUNA LED SYM5/57	5700	Type V	524554
88	DUNA LED ASY3/41	4100	Type III	524555
88	DUNA LED ASY3/57	5700	Type III	524556
63	DUNA LED ASY4/41	4100	Type IV	524557
63	DUNA LED ASY4/57	5700	Type IV	524558



Product code	Product Description	LED Colour	Wavelength / Colour temp	Viewing Angle (light engine)	Viewing Angle (light engine w/ light guide)	Lumens per metre (light engine)	Lumens per metre (light engine w/light guide)	Watts per metre (light engine)	Watts per metre (system)	Pack Qty*
75481	GERDXNLE1-A	Red	625nm	110	330	194	154	10.63	12.50	12
75484	GEXLXNLE1-A	Green	532nm	110	330	331	180	9.45	11.12	6
75485	GEBLXNLE1-A	Blue	467nm	110	330	75	62	9.45	11.12	6
75487	GEWXXNLE1-27K-A	White	2700K	110	330	351	230	9.45	11.12	6
75488	GEWXXNLE1-30K-A	White	3000K	110	330	384	249	9.45	11.12	6
75489	GEWXXNLE1-35K-A	White	3500K	110	330	410	266	9.45	11.12	6
75490	GEWXXNLE1-40K-A	White	4000K	110	330	430	279	9.45	11.12	6
75493	GEWHXNLE1-50K-A	White	5000K	110	330	512	331	9.45	11.12	6
75486	GEWHXNLE1-65K-A	White	6500K	110	330	472	308	9.45	11.12	6

*Each LED light engine is 2.4 metres length



Product code	Description code	Product description	Quantity
Tetra® Contour – Accessories			
75514	9409	18 AWG Supply Wire (0.82mm²)	152.4 m/PK
75494	GEXNWB2	Weather Box (Outdoor Use Only)	20/PK
75498	GEXNMCAC	Light Engine Mounting Clip	20/PK
75520	GEXNMC15	Light Guide Mounting Clip	50/PK
75537	GEXNBA	Silicone Bend-Aid (Reuseable)	12/PK
75541	GEXNLG15	Tetra Contour Light Guide (2.44 m) - White	12/PK
75532	GEXNLGEC15	Tetra Contour Light Guide End Cap - White	20/PK
75533	GEXNLGC15	Tetra Contour Light Guide Connector - White	20/PK
74917	GE020/G/V24T1-B	LED Driver 24 VDC/20W	1/PK
74915	GE080/G/V24T1-A	LED Driver 24 VDC/80W	1/PK

For a full list of accessories, please download Contour "Parts Guide" at www.gelighting.com/eu/led/

