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Intelligent lighting changing your life



Future Family

Key characteristics

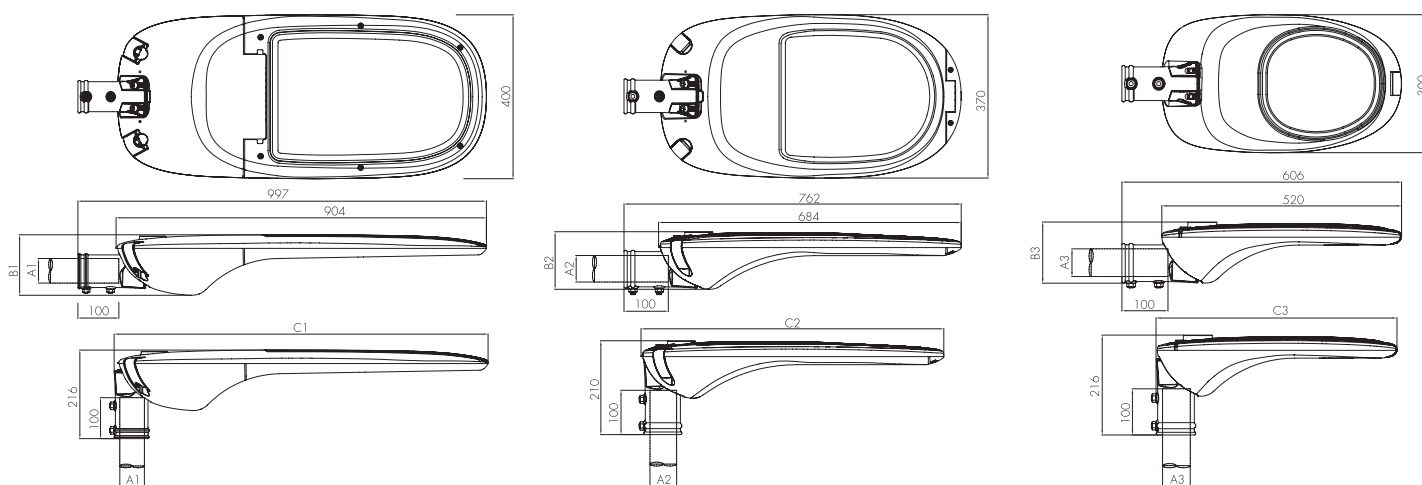
Installation height	4 to 16m		
Lumen package range (*)	Future Mini 2,145 to 10,255lm	Future 4,225 to 21,135lm	Future Maxi 12,400 to 35,550lm
Luminaire power consumption	Future Mini 19 to 87W	Future 35 to 175W	Future Maxi 100 to 300W
Colour temperature	Neutral standard. Cool or warm are optional		
Optical compartment tightness level	IP 66 (**)		
Control gear tightness level	IP 66 (**)		
Impact resistance (glass)	IK 09 (***)		
Nominal voltage	120 - 277V - 50 - 60Hz		
Electrical class	EU I or II (**)		US 1
Weight	Mini 7.0kg	Midi 10.0kg	Maxi 14.0kg

Materials

Body	High-pressure die-cast aluminium		
Protector	High light transmission tempered glass		
Colour	RAL7022 sanded Any other RAL or AKZO colour upon request		

(*) The nominal flux is an indicative flux @ t_j 25°C based on LED manufacturer's data. The real flux output of the luminaire depends on environmental conditions (e.g. temperature and pollution) and the optical efficiency of luminaire.

(**) according to IEC - EN 60598 - (***) according to IEC - EN 62262



A1	B1	C1	A2	B2	C2	A3	B3	C3
Ø48	133	520	Ø48	130	684	Ø48	148	913
Ø60	133	523	Ø60	130	684	Ø60	148	913
Ø76	143	533	Ø76	138	688	Ø76	148	923

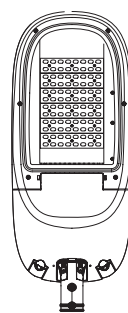
Spigot Ø76, Ø60 and Ø48mm



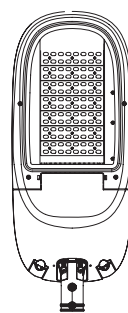
Post top: 0, +5 and +10 degrees

Side entry: -10, -5 and 0 degrees

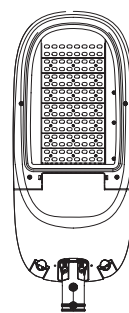
Future Maxi



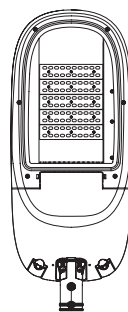
96LEDS



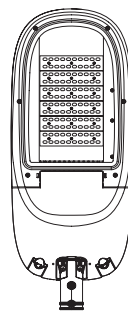
112LEDS



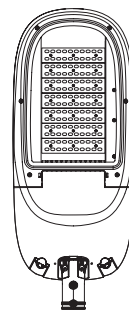
128LEDS



100LEDS



120LEDS



140LEDS

Future Maxi

A The housing is made of very corrosion resistant die-cast aluminium. Polyester powder coated painting after chemical washing treatment. Standard color: RAL 7022 sand. Any other colours are on request.

B Spigot is made of die-cast aluminium, standard in same colour as body. Universal post top / side entry spigot for Ø60 and Ø76mm.

C Closing-clips are made of very corrosion resistant die-cast aluminum, standard in same color as body, fixed to the frame with stainless steel spring, for easy and tool-less operation.

D Mounting with two stainless steel M10 bolts (extra long bolts for small column can be ordered with luminaire).

E Gear tray made in high thermal and mechanical resistance thermoplastic material (30% fibre glass), tool free removable after disconnecting the plug.

F Mounting with two separated parts for easy installation.

G NEMA Photocontrol Receptacle on request.





Luminaire tilt adjustment

To optimise the light distribution for varying road geometries and / or glare restrictions, the tilt angle can easily be adjusted on installation, by positioning the two spigot bolts in the right setting (tilt angles clearly marked on the spigot).



The nominal initial flux is an indicative LED flux @ t_j 25° C based on LED manufacturer's data. The real flux output of the luminaire depends on environmental conditions (e.g. temperature and pollution) and the optical efficiency of luminaire. The nominal initial flux depends on the type of LED in use and likely to change in accordance with the continuous and rapid developments in LED technology.

	CEN ME1 Requirements	Future-Maxi-140 (700mA)	CEN ME2 Requirements	Future-Maxi-96 (700mA)
Luminaire power consumption (W)	/	300	/	215
Spacing between luminaires (m)	/	40	/	32
Average luminance (cd/m ²)	>2.0	2.21	>1.5	1.58
Uniformity - U _o	0.4	0.45	0.4	0.57
Longitudinal uniformity - U _L	0.7	0.78	0.7	0.70
Glare - TI (%)	10	9.7	10	8.3
Power consumption per km (W)	/	15.000	/	13.438
System Energy Savings*	50% *50% energy savings can be achieved by dimming control			

Post top: 0, +5 and +10 degrees

Side entry: -10, -5 and 0 degrees

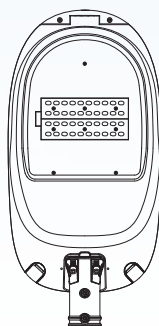
Future



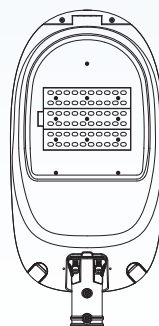
Future with smooth cover



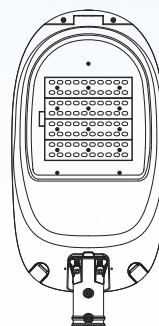
Future with heatsink



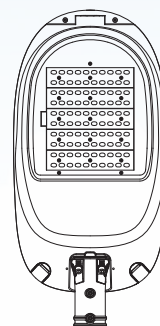
32/40LEDs



48/56/60LEDs



64/72/80LEDs



100LEDs

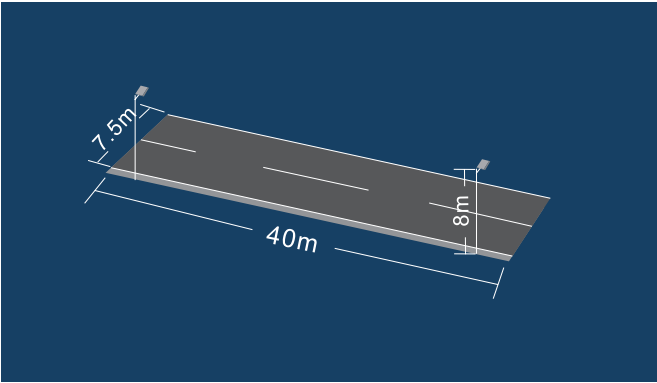
- A** The housing is made of very corrosion resistant die-cast aluminium. Polyester powder coated painting after chemical washing treatment. Standard color: sand blast RAL7022. Any other colours are on request.
- B** Refractor in flat toughened glass to prevent upward light. Fixed to the frame with metal clips for easy replaceability. Very high light transmission to optimise the Light Output Ratio.
- C** Spigot made of die-cast aluminium, standard in same colour as body. Universal post top / side entry spigot for 42-60mm and 76mm.
- D** Mounting with two stainless steel M10 bolts (extra long bolts for small column can be ordered with luminaire).
- E** Opening / closing (only for cable connection and in case of LED module or driver replacement) closing clip made of very corrosion resistant die-cast aluminium, standard in same colour as body, fixed to the frame with stainless steel spring, for easy and tool-less operation. Canopy with LED module hinges upwards and is secured by a stainless steel locking bar, making the LED module safely accessible from below. Safe Maintenance Technology safety switch disconnects power on opening.
- F** Gear tray made in high thermal and mechanical resistance thermoplastic material (30% fibre glass), tool-less removable after disconnecting the plug.
- G** Gear with Philips XITANIUM driver, optional programmable, 1-10V or DALI. SPD and EMI as per request.
- H** Gasket IP 66 for complete luminaire, In silicon to guarantee the IP level around the perimeter of the upper cover and the location of the refractor.
- I** Cable connection M20 cable gland with strain relief, for cable 10 -14mm.
- J** **Electrical connection**
Class II: Neutral / Phase are connected to safety switch; for Class I earth wire to be connected on earth stud in housing. 1-10V or DALI incoming wiring is connected to a separate termination block.
- K** **Air filter**
To avoid problem of depression condensation and to reduce internal temperature.



Future

Optic Type II

	Lave (cd/m ²)	Uo	U	Ti (%)	SR	W (System)	W/km
Target (ME5)	0.5	0.35	0.4	15	15		
100W HPS Luminaire	0.75	0.38	0.43	13.99	0.48	120	3000
Future 32 (700mA 70W)	0.52	0.53	0.45	10.98	0.56	70	1750

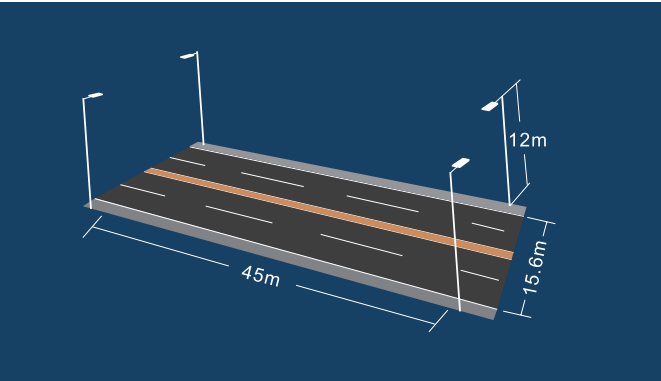


Scheme

Luminaire mounting height 8M, spacing 40M, road width 8.5M (single way 2 lanes with 3.75M each and shoulder 1M).
Single side arrangement, tilt 0, outreach 0.5M, maintenance factor 0.85, road surface C2.

Result

Future Optic Type II 70W can replace a conventional 100W HPS luminaire with better performance (improved uniformity, less glare). 40% energy savings are achievable depending on column spacing, road configuration and lighting class with the added comfort of white light.



Optic VB

	Lave (cd/m ²)	Uo	U	Ti (%)	SR	W (System)	W/km
Target (ME2)	1.50	0.4	0.70	10	0.5		
250W HPS Luminaire	1.94	0.73	0.73	9.84	0.65	280	6440
Future 100 (580mA 180W)	1.50	0.70	0.71	8.59	0.62	180	4140

Scheme

Luminaire mounting height 12M, spacing 45M, road width 21.6M (dual way 4 lanes with 3.75M each, shoulder 2X3M and central reserve 0.6M).
Opposite arrangement, tilt 5, outreach 1.5M, maintenance factor 0.85road surface C2.

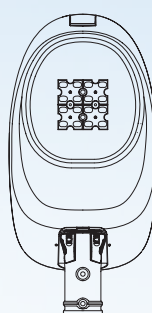
Result

Future VB 180W can replace a conventional 250W HPS luminaire with better performance (improved uniformity, less glare). 35% energy savings are achievable depending on column spacing, road configuration and lighting class with the added comfort of white light.

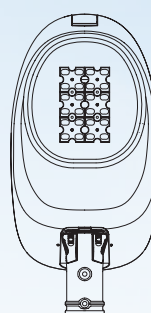
Post top: 0, +5 and +10 degrees

Side entry: -10, -5, and 0 degrees

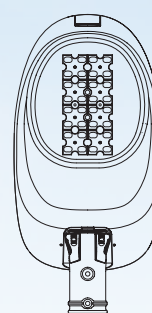
Future Mini



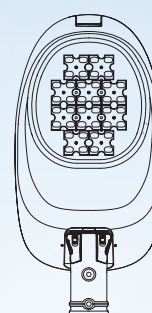
16LEDS



24LEDS



32LEDS



40LEDS

Future Mini



Future Mini with smooth cover



Future Mini with heatsink



Future Mini

With smooth cover

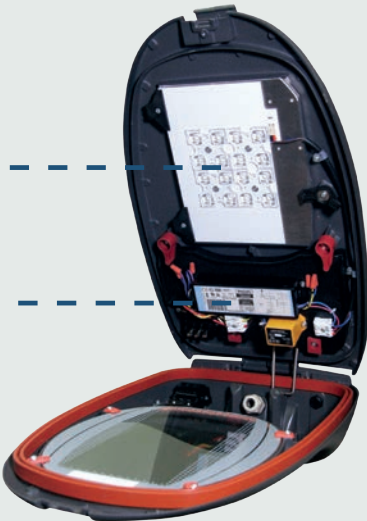


LED light engine



Power supply

Tool-less quick release devices.



LED Quantity	Current (mA)	Power consumpt* (W)	Nominal initial Flux (lm)**		
			WW	NW	CW
16	350	19	2145	2255	2335
	530	28	3080	3240	3360
	700	37	3895	4100	4245
24	350	27	3205	3375	3495
	530	41	4610	4850	5025
	700	53	5795	6100	6315
28	350	32	3820	4020	4165
	530	47	5375	5655	5860
	700	62	6810	7165	7425
32	350	35	4225	4445	4605
	530	53	6075	6390	6620
	700	70	7665	8065	8355
36	350	40	4780	5030	5210
	530	59	6800	7155	7415
	700	79	8570	9015	9345
40	350	43	5265	5540	5740
	530	65	7510	7900	8185
	700	87	9495	9895	10255

* Ambient temperature: 25 °C Power tolerance: +- 5%

** Lumen tolerance: +- 7%

LED Quantity	Current (mA)	Power consumpt* (W)	Nominal initial Flux (lm)**		
			WW	NW	CW
48	350	51	6410	6740	6985
	530	78	9215	9695	10045
	700	104	11570	12175	12615
56	350	61	7650	8050	8340
	530	93	10720	11280	11685
	700	123	13715	14430	14950
60	350	64	8005	8420	8725
	530	97	11470	12070	12505
	700	130	14360	15110	15655
64	350	68	8510	8955	9275
	530	103	12080	12710	13165
	700	137	15190	15985	16560
72	350	76	9520	10020	10380
	530	116	13595	14310	14820
	700	153	16950	17835	18475
80	350	84	10520	11070	11465
	530	128	14940	15725	16285
	700	175	19390	20400	21135

LED Quantity	Current (mA)	Power consumpt* (W)	Nominal initial Flux (lm)**		
			WW	NW	CW
96	350	100	12400	13100	13500
	530	154	17950	18950	19480
	700	206	22455	23485	24410
100	350	105	13000	13885	14170
	530	160	18500	19950	20165
	700	215	23200	24000	25290
112	350	118	14630	15460	15930
	530	180	20970	22140	22770
	700	240	26160	27360	28440
120	350	125	15500	16375	16875
	530	192	22370	23615	24290
	700	260	28340	29640	30810
128	350	135	16740	17685	18225
	530	205	23880	25215	25930
	700	275	29975	31350	32585
140	350	148	18350	19390	19980
	530	225	26210	27675	28460
	700	300	32700	34200	35550

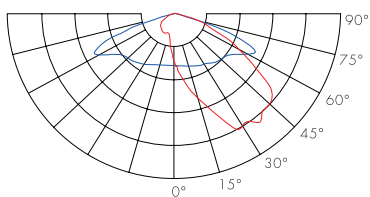
Future family

Flux tables

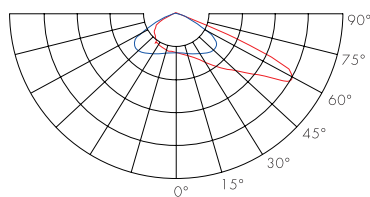
LuminaireData				Road Data			Column Data					MainRoad				Road Classification	
TYPE	M.F.	Tilt (deg.)	Lamp flux (klm)	W (m)	No. of Lanes	Tab. R	Installation	Height (m)	Spacing (m)	Setback (m)	Outreach (m)	Lavmin (cd/m²)	UO	UI	TI %	SR	
Future-M-16 38W	0.8	0	3.85	7.5	2	R2	Single sided	6	30	0.5	0.5	0.47	0.46	0.48	10.4	0.42	ME6
Future-M-24 55W	0.8	10	5.8	7.5	2	R2	Single sided	6	32	0.5	0.5	0.59	0.55	0.4	14.2	0.57	ME5
Future-M-32 73W	0.8	10	7.59	8	2	R2	Single sided	7	32	0.5	0.5	0.8	0.73	0.62	11.8	0.5	ME4a
Future-M-40 90W	0.8	0	9.5	8	2	R2	Single sided	8	31	0.5	0.5	1	0.69	0.63	7.9	0.54	ME3c

Lighting Classes Optics*	S6	S5	S4	S3	S2	S1	ME6	ME5	ME4	ME3	ME2	ME1
I	•	•	•	•			•	•	•	•		
II		•	•	•	•	•	•	•	•	•	•	•
III				•	•	•	•	•	•	•	•	•
V	•	•	•	•	•	•	•					
M1					•	•				•	•	•
M6		•	•	•						•	•	
VB					•	•			•	•	•	•
R3				•	•	•		•	•	•	•	•

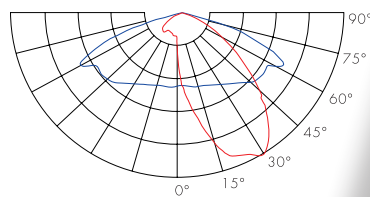
* Typical 8 distributions for the most lighting scenes, customized distributions of combo-optics are available on special request.



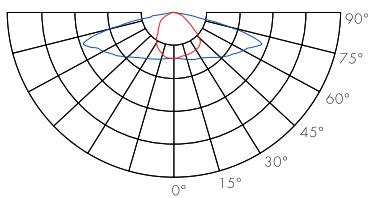
M1



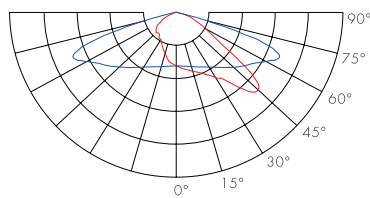
M6



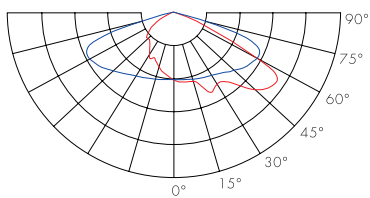
R3



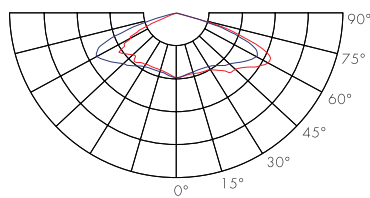
Type I



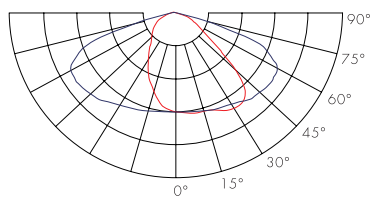
Type II



Type III



Type V



VB



Due to continuous product development the details within this brochure are subject to change without notice.