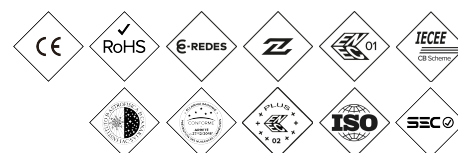
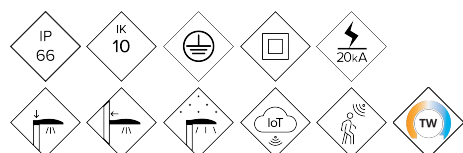


ALFUM

Luminaire

FUSION M



A complete road luminaire family at the forefront of LED technology to offer excellent lighting performance thanks to its aerodynamic design, which increases the dissipation surface. Comprehensive range available in three sizes with extensive optical and light distributions from 20W up to 240W. Housing composed of two parts that can be disassembled without tools. Ready for any smart lighting control solutions.

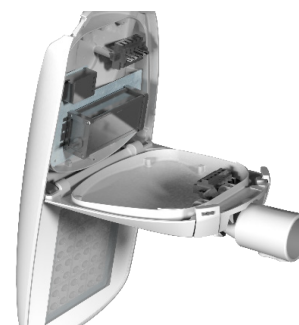
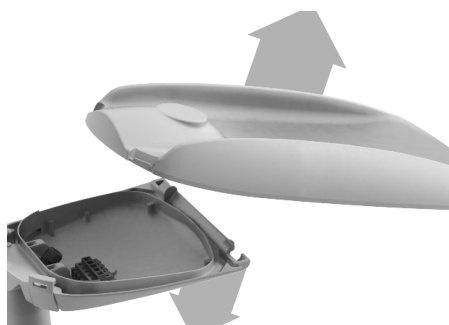
MAIN FEATURES:

- High efficiency. Up to 145 lm/W real
- 3 different sizes. From 20W to 240W
- Double cavity, Driver and Optical Group
- Body removable in 2 pieces without tools
- 18 different light distributions
- Standard Zhaga (Book 15)
- Ready 4IoT. Ready for connectivity

APPLICATIONS:

- Roads and Highways
- Roundabouts
- Urban Roads and Streets
- Pedestrian crossing
- Cycle Lane and Narrow Tracks
- Parking

DETAILS:



[Project sheet](#) | [CAD](#) | [Mounting instructions](#) | [BIM](#) | [HD image](#)

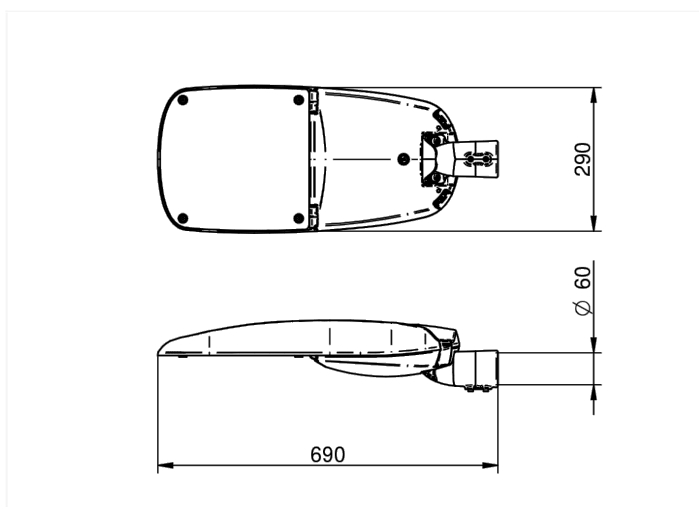
BENITO

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SPECIFICATIONS :

Housing material:	Die-cast aluminium casting of type EN AC-43000, EN AC-43100, EN AC-43400, EN AC-44100, EN AC-47100 according to standard UNE EN 1706.
Diffuser (optic system enclosure):	5mm tempered glass, UV filtering. Polycarbonate available as an option.
Fixing elements:	18/8 Stainless Steel - AISI 304
Housing:	Double Cavity: Driver / LED Module
Sealing gaskets:	Silicone Foam
IP rating (luminaire):	IP66
IP rating (optic system):	IP66
IK rating (impact resistance):	IK10
LEDs thermal dissipation:	Heat dissipation through the luminaire body, without external fins or conductive fluids. Passive heat dissipation through convection, ensuring thermal contact between the LED modules through highly conductive heat transfer material.
Anti-condensation valve:	Pressure compensation valve that ensures moisture evacuation, preventing condensation and maintaining the luminaire's IP rating.
Paint and finishes:	Polyester powder coating, electrostatically sprayed and oven-sublimated. Corrosion-resistant.
Colour:	Color RAL 9022
Mounting:	Post - Top Fixation Ø60mm (Optional; Ø76mm and through accessories Ø48mm)
Tilt range:	Adjustable luminaire from -15° to 15° inclination.
Maintenance:	Easy to open without any special tools. Replaceable modules: LEDs, drivers, SPDs.
Recommended mounting height:	6 - 10 m
Driver:	Dimmable and programmable constant current driver with different levels (0-10V, 1-10V, DALI2, NFC). Built into the luminaire, pre-wired on a steel plate. .
Flow Reduction:	Double level with control line, different timed levels or virtual midnight, flow reduction at the head.
Ready4IOT - Connectivity:	Zhaga Base (Book 18) - D4i. (Optional). NEMA 5,7 Pins Base (Optional). Bottom side Presence Sensor on Zhaga Base (Book 18) - D4i. (Optional).
Surge protection device (SPD):	Type T2+T3, 10-20kV and 20kA transient surge protector. Series connection with thermofuse, disconnection for a more effective protection at the end of the SPD service life. (Optional SPD Full Permanent Surge Protector >264Vac to <170Vac).
DarkSky Approved	The mount is pre-installed at 90 deg post top orientation, or 0 deg lateral mount orientation and non-adjustable.

DRAWING:

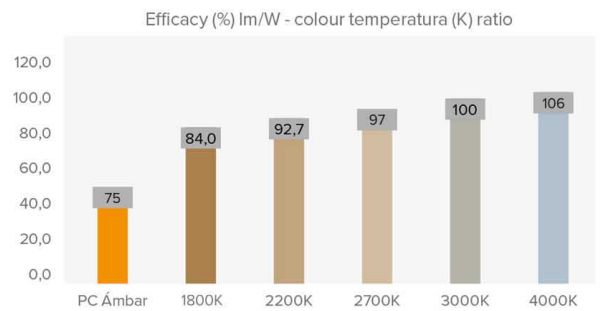


INSTALLATION:



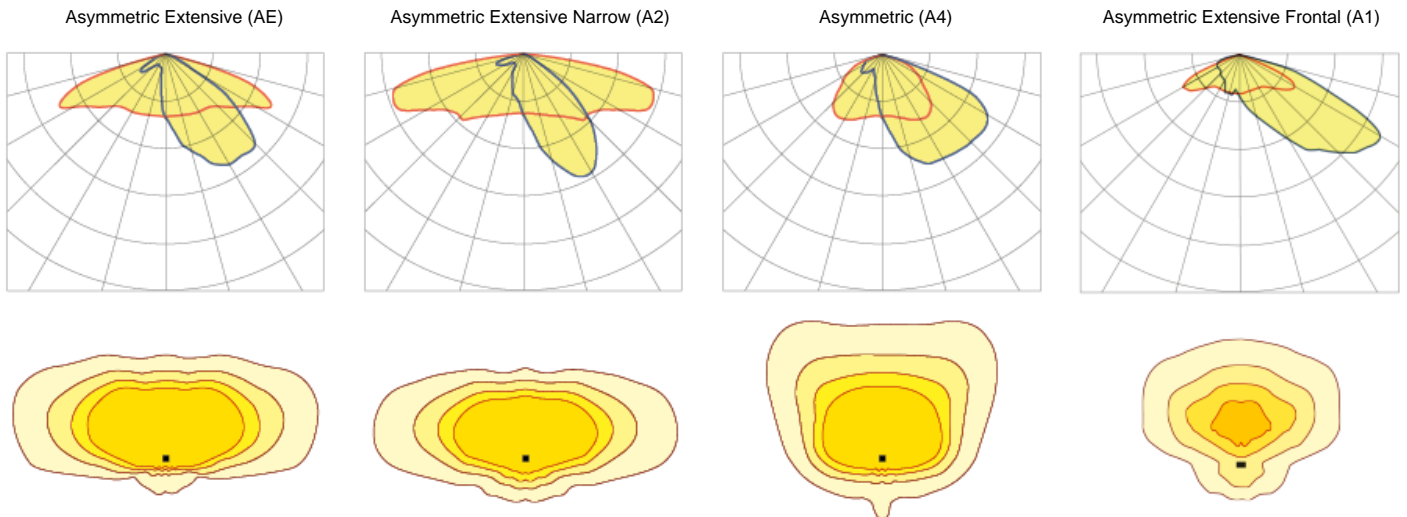
TECHNICAL DATA:

REF.	Nº LEDs	Power W	I Driver mA	Real luminous flux (T) =85°C		Initial luminous flux (T) =25°C	
				Flux lm	Efficacy lm/W	Flux lm	Efficacy lm/W
FUSION M	32	60	563	8520	142	9713	162
		80	750	11193	140	12760	160
	48	100	625	14066	141	16035	160
		120	750	16800	140	19152	160



Luminous fluxes and efficiencies at 3000K and CRI>70 – Tolerance ± 3%
 Approved by DarkSky with 3000K or lower.

PHOTOMETRY:



*Show 4 recommended lighting distributions. Refer to the 18 typologies.

LEDs MODULE:

LEDs module:	BENITO Zhaga format with 8, 12, and 16 LEDs. See color temperatures, CRI, and light distributions. (NTC temperature probe optional).	
Replaceable module:	Yeah	
LED:	5050	
Number of LEDs:	32-48	
PCBs format:	2 or 3 Zhaga (Book 15) 2x8	
LED nominal efficacy:	172	
Colour temperature:	PC Amber - 1K8, 2K2, 2K7, 3K, 4K, 5K, TW - Tunable White	
Colour rendering index CRI:	>70 (optional >80)	
Average LED useful time L90B10:	L90B10 >100,000 hours	

OPTIC SPECIFICATIONS:

Optic system:	PMMA 2x2 lenses	
Light distributions:	18 light distribution curves. A1,A2.A4 and AE are DarkSky Approved.	
Upward light output ratio ULOR:	0%	
Downward light output ratio DLOR:	100%	
Glare index:	Between D5 and D6 (depending on the light distribution)	
Luminous intensity category:	Between G*4 and G*6 (depending on the light distribution)	
Luminous flux CIE n°3:	>95% (See 18 Light Distributions).	
Photobiological safety:	RG0 (risk-free)	
Initial luminous flux Tj=25°C (up to):	lm	19152
Initial luminaire efficacy Tj=25°C (up to):	lm/W	160
Real luminous flux Tj=85°C (UNE EN 13032-4) (up to):	lm	16800
Real luminaire efficacy Tj=85°C (UNE EN 13032-4) (up to):	lm/W	140

ELECTRIC SPECIFICATIONS:

Nominal maximum power (LEDs):	108	
Maximum power consumed (luminaire):	W	120
Power range:	W	60 - 120W
Maximum current of LED:	mA	<470 (LED Current = 50% Driver Current).
Power supply protection classes IEC:	Class I and II	
Surge protection device (SPD):	Type 2 and Type 3, 10-20kV and 20kA transient surge protector. Series connection with thermal fuse disconnecter for a more effective protection at the end of its service life.	
Common and differential mode protection (SPD) Udc:	kV	10
Max current (8/20) (SPD):	kA	20
Thermal phase disconnection (SPD):	Yes	
Input voltage:	Vac	220-240
Input voltage (max rate):	Vac	198-264
Input frequency:	Hz	47-63
Starting current:	A	<65
Duration of the starting voltage peak:	ms	<0.3
Driver efficacy:	>90%	
Power factor 100% consumption:	>0.98	
Power factor 50% consumption:	>0.95	
Total harmonic distortion (THD):	<10	
Power consumption on standby mode:	W	<0.4
Energy class:	C (According to EU Regulation 2019/2015 EPREL) - A++ IPEA>1.15	

OPERATING CONDITIONS:

Average LED useful time L90B10:	hours	>100,000
Average driver useful life to Tp <70°C:	hours	100,000
Average luminaire useful life L90B10 (TM-21):	hours	>100,000
Ambient temperature (Ta):	°C	From -35°C to +50°C
Aerodynamic resistance (CxS):	m2	0.042
Vibration test (15Hz 3 axis):		
Guarantee:	years	5 (extensible up to 10 years)

PACKAGING DIMENSIONS:

Net weight	kg	8
Gross weight	kg	8.8
Luminaire dimensions (LxWxH)	mm	735x340x165
Packaging dimensions (LxWxH)	mm	770x350x187
Pieces per box	1	
Quantity per container 20ft	624	
Quantity per container 40ft	1326	

CERTIFICATES:

Security certificates:	EN 60598-1 / EN 60598-2-3 / EN 62493 / IEC 62471
EMC certificates:	EN 55015 / EN 61547 / EN 61000-3-2 / EN 61000-3-3 / EN 61347-2-13 / EN 61347-1 / EN 62384
Other certifications:	EN 13032-4

Company Certifications



BENITO

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