ALFUL

Luminaire

FUSION L



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
Zhaga Standard (Book 15)
Ready 4IoT. Ready for connectivity

APPLICATIONS:

Roads and Highways
Roundabouts
Urban Roads and Streets
Parking

DETAILS:







Project sheet | CAD | Mounting instructions | BIM | HD image

BENITO

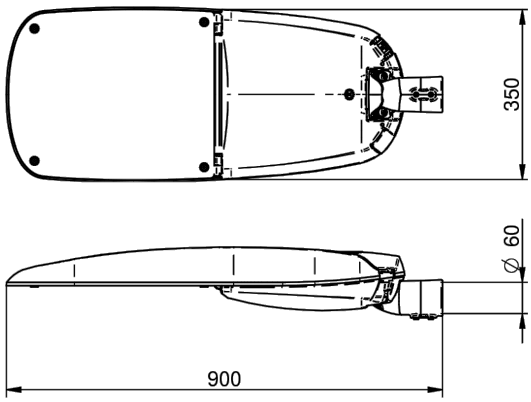
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SPECIFICATIONS :

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. Optionally available in polycarbonate.
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 Fixing Ø60mm (Optional; Ø76mm and through accessories Ø48mm)
Tilt range:	Adjustable luminaire from -15º to 15º inclination.
Maintenance:	Easy to open without any special tools. Replaceable modules: LEDs, drivers, SPDs.
Recommended mounting height:	9 - 14 m
Driver:	Constant current driver, dimmable and programmable at 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:



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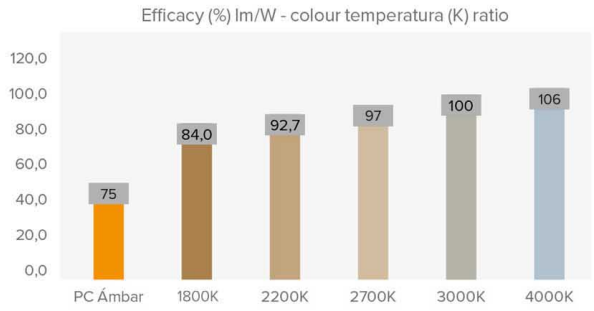
Ámbar 2200 K 2700 K 3000 K 4000 K 5000 K

lm/€ TRIPLE PROTECTION

TECHNICAL DATA:

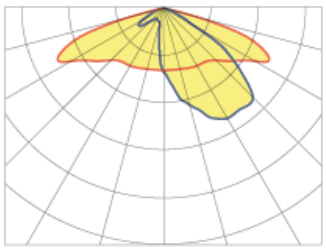
	REF.	Nº LEDs	Power W	I Driver mA	Real luminous flux (T) =85ºC) Flux lm	Real luminous flux (T) =85ºC) Efficacy lm/W	Initial luminous flux (T) =25ºC) Flux lm	Initial luminous flux (T) =25ºC) Efficacy lm/W
FUSION L	ALFUL150	64	120	563	16920	141	19289	161
		64	150	703	21000	140	23940	160
	ALFUL220	96	200	625	28400	142	32376	162
		96	220	688	31020	141	35363	161
	ALFUL240	96	240	750	33600	140	38304	160

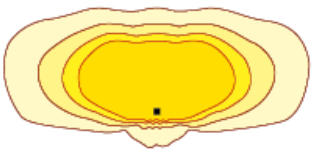
Luminous flux and efficiencies at 3000K and CRI>70 – Tolerance ± 3%
Approved by DarkSky with 3000K or lower



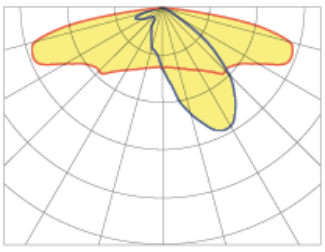
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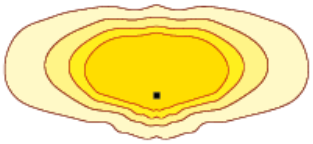
Asymmetric Extensive (AE)



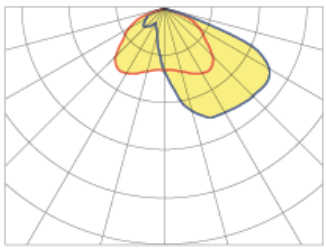


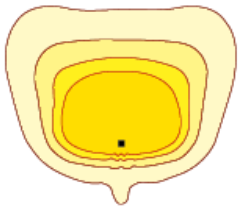
Asymmetric Extensive Narrow (A2)



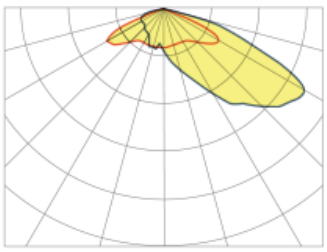


Asymmetric (A4)





Asymmetric Extensive Frontal (A1)





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

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LEDs MODULE:

LEDs module:	BENITO Zhaga format with 8, 12, and 16 LEDs. Consult color temperatures, CRI, and light distributions. (NTC temperature probe optional).
Replaceable module:	Yeah
LED:	5050
Number of LEDs:	64-96
PCBs format:	6 Zhaga (Book 15) 2x6 or 6 Zhaga (Book 15) 2x8
LED nominal efficacy:	172
Colour temperature:	PC Amber - 1K8, 2K2, 2K7, 3K, 4K, 5K, TW - Tunable White. DarkSky Approved with 3000K or lower.
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 nº3:		>95% (See 18 Light Distributions).
Photobiological safety:		RG0 (risk-free)
Initial luminous flux Tj=25ºC (up to):	lm	38304
Initial luminaire efficacy Tj=25ºC (up to):	lm/W	160
Real luminous flux Tj=85ºC (UNE EN 13032-4) (up to):	lm	33600
Real luminaire efficacy Tj=85ºC (UNE EN 13032-4) (up to):	lm/W	140

ELECTRIC SPECIFICATIONS:

Nominal maximum power (LEDs):		216
Maximum power consumed (luminaire):	W	240
Power range:	W	120 - 240W
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 T2 + T3, 10-20kV and 20kA transient surge protector. Series connection with thermofuse disconnector 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 frecquency:	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 <70ºC:	hours	100,000
Average luminaire useful life L90B10 (TM-21):	hours	>100,000
Ambient temperature (Ta):	ºC	From -35°C to +50°C
Aerodynamic resistance (CxS):	m2	0.067
Vibration test (15Hz 3 axis):		
Guarantee:	years	5 (extensible up to 10 years)

PACKAGING DIMENSIONS:

Net weight	kg	13.7
Gross weight	kg	14.5
Luminaire dimensions (LxWxH)	mm	950x405x180
Packaging dimensions (LxWxH)	mm	985x415x202
Pieces per box		1
Quantity per container 20ft		408
Quantity per container 40ft		840

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

ISO 9001 ISO 50001 ISO 14001 ISO 45001

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