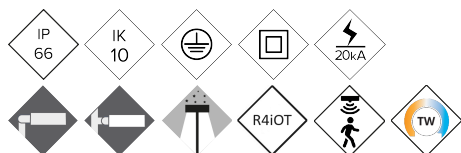


ALFUM

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.

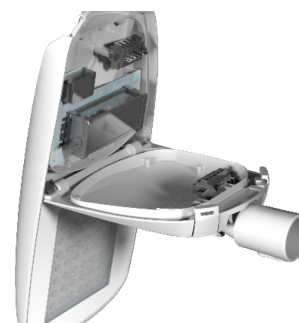
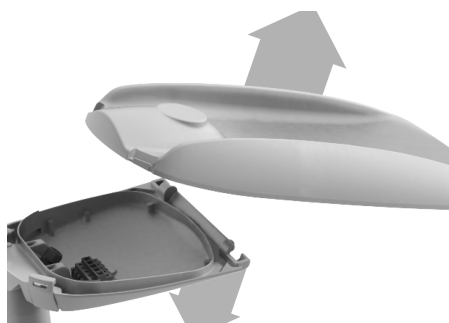
MAIN FEATURES:

- High efficiency. Up to 145 lm/W net
- 3 different sizes. From 20W to 240W
- Double compartment: driver and LED module
- Tool-less opening - 18 light distribution curves
- Zhaga Standard (Book 15)
- Ready 4IoT. Ready for any intelligent lighting control solution

APPLICATIONS:

- Roads and Motorways
- Roundabouts
- Urban Roads and Streets
- Pedestrian Crossings
- Bicycle Lanes and Narrow Roads
- Car Parks

DETAILS:



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

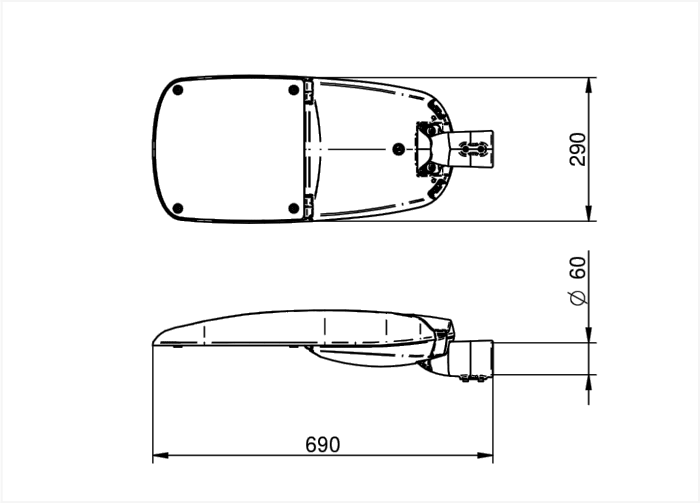
BENITO

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SPECIFICATIONS :

| | |
|------------------------------------|---|
| Housing material: | High pressure die-cast aluminium EN AC-43000, EN AC-43100, EN AC-43400, EN AC-44100, EN AC-47100 according to the UNE EN 1706 standard |
| Diffuser (optic system enclosure): | 5mm tempered safety glass, filters UV. Optionally in polycarbonate. |
| Fixing elements: | Stainless steel 18/8 - AISI 304 |
| Housing: | Double compartment: driver / LED module |
| Sealing gaskets: | Silicone foam |
| IP rating (luminaire): | IP66 |
| IP rating (optic system): | IP66 |
| IK rating (impact resistance): | IK10 |
| LEDs thermal dissipation: | Thermal dissipation through finless luminaire body, without conductive fluids. Passive convection dissipation ensuring thermal contact with the LED modules through a high-conductivity thermal transfer material |
| Anti-condensation valve: | Pressure-balancing valve to ensure moisture release, avoid condensation and maintain the luminaire IP tightness |
| Paint and finishes: | Polyester powder paint coating, electrostatically sprayed and sublimated in the oven. Resistant to corrosion |
| Colour: | RAL 9022. Optional: other colours |
| Mounting: | Post-Top Ø60mm (Optional; Ø76mm and by means of accessories Ø48mm) |
| Tilt range: | From -15º to +15º |
| Maintenance: | Easy, tool-less opening. Modular concept for easy component replacement: LEDs, drivers, SPD |
| Recommended mounting height: | 6 - 10 m |
| Driver: | Constant current adjustable and programmable driver on different levels (0-10V, 1-10V, DALI2, NFC). Embedded in the luminaire, pre-wired on a galvanised steel plate. |
| Flow Reduction: | Double level with control line, autonomous multi-level dimming or virtual midnight, flow reduction at the head-end. |
| 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, 10kV 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). |

DRAWING:



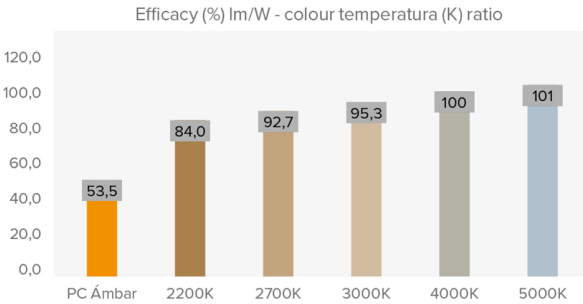
INSTALLATION:



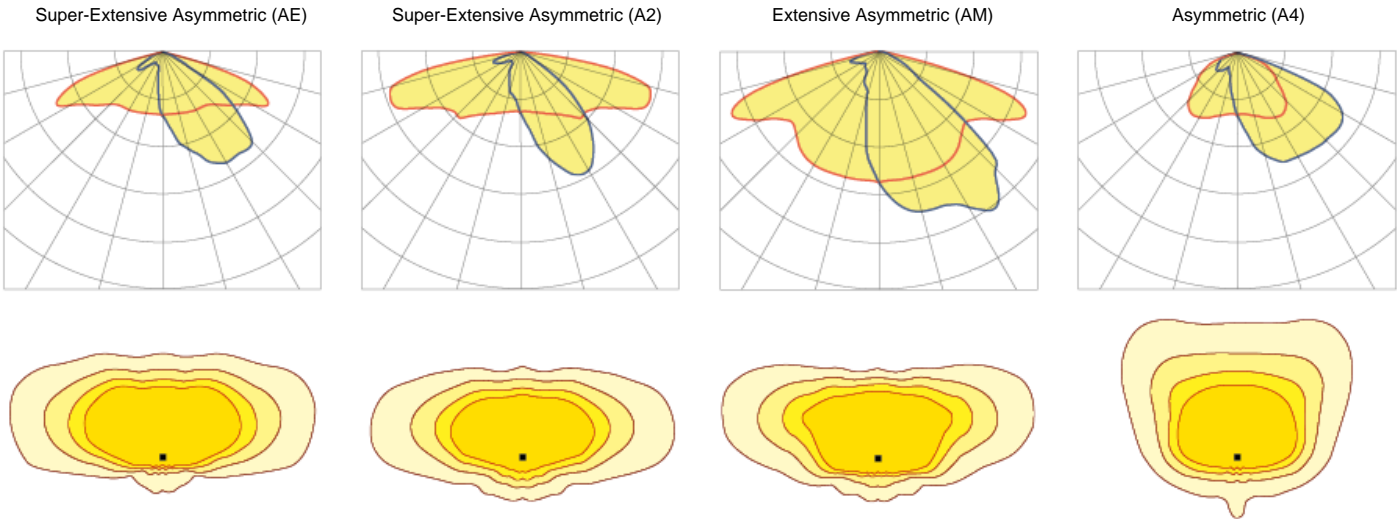
TECHNICAL DATA:

| FUSION M | REF. | N° 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 |
| | | | | | | | | |
| | ALFUM80 | 32 | 60 | 563 | 8520 | 142 | 9713 | 162 |
| | | 32 | 80 | 750 | 11193 | 140 | 12760 | 160 |
| | ALFUM120 | 48 | 100 | 625 | 14066 | 141 | 16035 | 160 |
| | | 48 | 120 | 750 | 16800 | 140 | 19152 | 160 |

Luminous flux and efficiency at 4000°K and CRI>70.
 Luminous flux tolerance < +/-3%.
 Values may be subject to changes due to LED binning.



PHOTOMETRY:



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

V. 2024-02-02 | The constant improvement and evolution of our products may result in some modifications of the technical specifications and characteristics of the products without prior notice.

LEDs MODULE:

| | | |
|---------------------------------|---|--|
| LEDs module: | BENITO Zhaga standard with 8, 12 and 16 LEDs. Check colour temperatures, CRI and Luminous distributions (Optional NTC temperature probe). | |
| Replaceable module: | Yes | |
| 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 lenses 2x2 | |
| Light distributions: | 18 light distribution curves | |
| 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 (exempt of risk) | |
| 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, 10kV 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: | >100,000 | |
| Average driver useful life to Tp <70°C: | 100,000 | |
| Average luminaire useful life L90B10 (TM-21): | >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) | | |
| 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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