

# TIARA LED

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GENERAL FAMILY CARD



PKP

to  
**193**  
lm/w



DarkSky



**LENA**  
LIGHTING

# TIARA LED

## GENERAL FAMILY CARD



### TECHNICAL PARAMETERS

Degree of tightness:	IP66
Impact resistance:	IK09, IK10
Rated luminaire power [W]*:	8 - 330
Luminaire luminous flux [lm]*:	300 - 51375
Colour temperature [K]:	2200 - 6500*
Colour rendering index (Ra):	CRI 70, CRI 80, CRI 90
Protection class:	I and II
Optics:	More than 80 distributions
Controls:	ON/OFF, IoT, autonomous power reduction, RCR
Body colour:	Grey RAL9006, RAL7035, optional any RAL
Luminous efficacy of luminaire [lm/W]:	to 193lm/W
Energy class:	to A
Body material:	Aluminium injected die-cast, painted powder-coated - upper surface - smooth, without ribs - fasteners - stainless steel
Lampshade type:	transparent
Lampshade material:	Tempered glass
SDCM:	<4, <5
Socket type:	Optional 1-2 connectors Zhaga, NEMA 5/7 pin

### CHARACTERISTIC



TIARA LED is Lena Lighting's flagship family of road luminaires. The luminaire is constructed from two elements - a base with a handle and a top, hinged flat cover with an electrical and optical chamber. The two-chamber design keeps the optical compartment sealed during installation work and the opening of the electrical compartment. It offers tool-free access to the electrical fixture from the top, which can be permanently secured with screws or a seal. The upper part of the luminaire, has dedicated hinges and a safety cord. Using standard tools, quick and convenient servicing is possible, allowing any component to be replaced without having to dismantle the entire luminaire and make soldered connections. The body, cover and handle are made of die-cast aluminium, weather and UV resistant, powder coated in RAL9006 grey as standard, and have a very high IP66 ingress protection rating and IK09 mechanical impact resistance. The optical system uses directional multi-lens arrays, made of PMMA, with each lens having the same optics, ensuring that the light characteristics remain consistent over time. The LED modules are mounted on a PCB board.

Standard features include: ergonomic suspension system for the light module; NTC protection against accidental overheating of the luminaire; over-voltage, over-voltage and short-circuit protection of the power supply system up to 10kV; fully programmable DALI driver; available functions for maintaining constant luminous flux during CLO and autonomous 5-stage power reduction; SoftStart function to reduce current surge on start-up; filter to prevent condensation; connection terminals; tool-free access.

Additional options: NEMA, ZHAGA connectors; interfacing with control systems, RCR motion sensor; anti-vandal protection with screws/seal; additional SP10kV/10kA protection outside the power supply or SP20kV, on/off power supply without power reduction; knife disconnect switch to disconnect voltage if the electrical compartment is opened; design with outgoing power cable optionally terminated with male and female quick-connector; painting in any RAL colour; painted interior of optical and electrical compartment; anti-corrosion design with C5-M salinity resistance with 1500h salt test.

Certificates: CE, RoHS, ENEC, ENEC+, Zhaga D4i, PKP, PEP Environmental Declaration, EMC compliance, DarkSky for approved product options.

### APPLICATION

Thanks to the use of dedicated optics, it is possible to illuminate objects such as: motorways, motorways, national roads, provincial roads, district roads, municipal roads, city roads, housing estates, area lighting. Optics are also available to illuminate: pedestrian crossings, pavements and cycle paths.

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### 4000K

Option	LED	LED module	Minimum luminaire power [W]	Maximum luminaire power [W]	Minimum luminous flux [lm]	Maximum luminous flux [lm]	Factor power	Minimum diode current [mA]	Maximum diode current [mA]
<b>TIARA 2 LED XS</b>	16	1	6	54	875	7625	do 0,99	60	525
<b>TIARA 2 LED S</b>	16	1	8	37	1100	5475	do 0,99	80	380
	32	2	16	109	2500	15275	do 0,99	80	525
<b>TIARA 2 LED M</b>	16	1	8	37	1250	5075	do 0,99	80	380
	32	2	14	76	2100	10370	do 0,99	70	390
	48	3	30	110	4750	14950	do 0,99	150	381
	64	4	20	175	3300	22925	do 0,99	50	450
<b>TIARA 2 LED L</b>	96	6	51	110	8400	17200	do 0,99	80	190
	128	8	67	330	11250	43375	do 0,99	80	420

### 3000K Refer to DarkSky Approved ordering guide on page 7

Option	LED	LED module	Minimum luminaire power [W]	Maximum luminaire power [W]	Minimum luminous flux [lm]	Maximum luminous flux [lm]	Factor power	Minimum diode current [mA]	Maximum diode current [mA]
<b>TIARA 2 LED XS</b>	16	1	6	54	850	7325	do 0,99	60	525
<b>TIARA 2 LED S</b>	16	1	8	37	1050	5250	do 0,99	80	380
	32	2	16	109	2400	14650	do 0,99	80	525
<b>TIARA 2 LED M</b>	16	1	8	37	1200	4875	do 0,99	80	380
	32	2	14	76	2000	9950	do 0,99	70	390
	48	3	30	110	4550	14350	do 0,99	150	381
	64	4	20	175	3175	22000	do 0,99	50	450
<b>TIARA 2 LED L</b>	96	6	51	110	8050	16500	do 0,99	80	190
	128	8	67	330	10800	41650	do 0,99	80	420

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**2700K** Refer to DarkSky Approved ordering guide on page 7

Wariant	LED	LED module	Minimum luminaire power [W]	Maximum luminaire power [W]	Minimum luminous flux [lm]	Maximum luminous flux [lm]	Factor power	Minimum diode current [mA]	Maximum diode current [mA]
<b>TIARA 2 LED XS</b>	16	1	6	54	800	7000	do 0,99	60	525
<b>TIARA 2 LED S</b>	16	1	8	37	1000	5025	do 0,99	80	380
	32	2	16	109	2300	14050	do 0,99	80	525
<b>TIARA 2 LED M</b>	16	1	8	37	1150	4675	do 0,99	80	380
	32	2	14	76	1925	9550	do 0,99	70	390
	48	3	30	110	4375	13750	do 0,99	150	381
	64	4	20	175	3025	21100	do 0,99	50	450
<b>TIARA 2 LED L</b>	96	6	51	110	7725	15825	do 0,99	80	190
	128	8	67	330	10350	39900	do 0,99	80	420

## OTHER

Temperature colour temperature	Minimum luminaire power [W]	Maximum luminaire power [W]	Minimum luminous flux [lm]	Maximum luminous flux [lm]
<b>5700K</b>	6	330	875	43375
<b>2400K</b>	6	330	770	38170
<b>2200K*</b>	6	330	750	37300

\*Refer to DarkSky Approved ordering guide on page 7

# TIARA LED

## GENERAL FAMILY CARD

### GENERAL DATA

Operating temperature range	-40° to +50°
Electrical protection class	I / II
Colour temperature	2200 - 6500*
CRI	CRI>70, CRI>80, CRI>90
ULOR	0
Lumen maintenance	L95B10
luminous flux over time	100 000h
Guarantee	5 years, 10 years or more by individual arrangement
Control system	Available as an option
Photobiological risk group	RG0/RG1
McAdam steps	<4, <5
French law of 27 December 2018.	Compatible with types applications a, b, c, d, e, f, g

### MECHANICAL DATA

\*DarkSy Approved with  
3000K CCT or lower

Mounting	con an arm, on a pole
Mounting height	4 - 15m
Angle adjustment of luminaire mounting	depending on model* -120° to +120°, +0° to 10° DARK SKY
Luminaire colour	Default colour grey RAL9006, RAL7035, optionally any RAL
Housing	Aluminium injection moulded die-cast, powder-coated
Optics	Over 80 available beam patterns
IK	IK09 / IK10
IP	IP66
Service access	Tool-free access to power supply compartment. Arm or pole mounting.
Luminaire installation	Changing the mounting method without change of assembly without dismantling the luminaire.
Mounting bracket	Φ40 - Φ60, Φ76
Other	Powder coating inside of optical and electric chamber; filter preventing condensation; increased resistance corrosion resistance up to C5-M

### ADDITIONAL OPTIONS

Possibility to powder-coat the optical and electrical compartments, can be equipped with a knife-edge connector, equipped with an additional cable with quick-release coupling, anti-vandal version available with stainless steel screws.

### ELECTRICAL DATA

Power factor	up to 0.99
Power factor at 50%	up to 0.98
dimming	up to 0.93
Power supply efficiency	230-240VAC
Supply voltage	202-254VAC
AC supply voltage range	186-250VDC
Maximum number of luminaires per protection	up to 42 pcs.
THD	THD <10%**
ESD	8/4kV
EMC	In accordance with harmonised standards : EN 55015, EN 61000-3-2 EN 61000-3-3
Limitation of current	yes
SoftStart	
Overvoltage protection	I cl - 10kV II cl - 6kV/10kV additional up to 20kV
Power control	10% - 100%
Other	motion detector; discon- nector scissor-type; CLO; NTC thermal protection, overload protection, short-circuit protection, overvoltage protection, 5-stage autonomous power reduction; QR code with dedicated application

### CERTIFICATES AND TESTS

CE mark	Yes
ENEC certification	Yes
ENEC+ certificate	Yes
ROHS	Yes
Zhaga D4i	Yes
Vibration tests	Yes
Salt chamber tests	1500h for version C5-M
EPD	Yes
DarkSky Approved	Yes*

\*Refer to DarkSky Approved ordering guide on page 7  
\*\* Parameter defined by the type of power supply used

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## ACCESSORIES AVAILABLE

indeks	Name
314049	Wall bracket - galvanised
314056	Wall bracket - grey
812521	BACKSHIELD L Tiara 2 LED M
812514	BACKSHIELD P Tiara 2 LED M
812507	BACKSHIELD T Tiara 2 LED M
813450	BACKSHIELD L Tiara 2 LED S
813443	BACKSHIELD P Tiara 2 LED S
813436	BACKSHIELD T Tiara 2 LED S
813481	BACKSHIELD L Tiara 2 LED XS
813474	BACKSHIELD P Tiara 2 LED XS
813467	BACKSHIELD T Tiara 2 LED XS



Wall bracket - galvanised (314049)



Wall bracket - grey (314056)



BACKSHIELD L Tiara 2 LED M (812521)



BACKSHIELD P Tiara 2 LED M (812514)



BACKSHIELD T Tiara 2 LED M (812507)

## ANGLE ADJUSTMENT

Tiara 2 LED XS

Tiara 2 LED S

Tiara 2 LED M

Tiara LED Pro

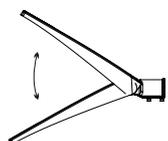
Modification DarkSky  
804625 Tiara 2 DarkSky  
adjustable handle

on the boom

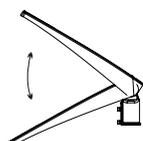
on a pole

on the boom

on a pole



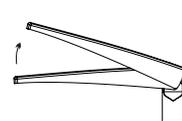
-120° to +30°



from -30° to +120°



-15° to +5°



from -5° to +15°



-10° to +0°

# TIARA LED

## GENERAL FAMILY CARD

### TIARA 2 LED XS 13200lm 740 RMW IP66 II kl. DALI NEMA IK10 (109W) RAL7016

<b>Model</b> TIARA 2 LED XS TIARA 2 LED S TIARA 2 LED M TIARA 2 LED L TIARA LED L PRO	<b>Colour</b> RALxxxx PI-lacquered chamber interior
<b>Luminous flux [lm]</b> Value in [lm] in increments of 25	<b>Power [W]</b> Value [W] in increments of 1 W
<b>CRI/C CT</b> 722, 727, 730, 735, 740, 750, 757,765, 822, 827, 830, 835, 840, 850, 857, 865, 922, 927, 930, 935, 940, 950, 957, 965,	<b>Impact resistance</b> IK09, IK10
<b>Optics</b> AS-asymmetric, R-road, P-pedestrian; RP-parking, RMW-wet, N-narrow, M-medium, W-wide, L-left, P-right, 0-99 numbering optics, HE-high performance + LED type II	<b>Connector / Sensor</b> NEMA - NEMA connector NEMA-7P - NEMA 7 Pin connector ZG - Zhaga connector from above ZG-DN - Zhaga connector from below 2xZG - Zhaga connector from top and bottom RCR - Motion and twilight sensor no
<b>IP</b> IP65, IP66	<b>Control</b> no 1DIM 2DIM DALI ON/OFF
<b>Protection class</b> I cl. II cl.	

## DARKSKY APPROVED

### TIARA 2 LED XS 13200lm 730 RM8+ IP66 II kl. DALI NEMA IK10 (109W) RAL7016

<b>Model</b> TIARA 2 LED XS TIARA 2 LED S TIARA 2 LED M	<b>Colour</b> RALxxxx PI-lacquered chamber interior
<b>Luminous flux [lm]</b> Value in [lm] in increments of 25	<b>Power [W]</b> Value [W] in increments of 1 W
<b>CRI/C CT</b> <b>722, 727, 730, 822, 827, 830, 922, 927, 930</b>	<b>Impact resistance</b> IK09, IK10
<b>Optics</b> RM7, RM8+, RM19, RM18+, RM7HE, RM78+, RM19HE, RM20, RM3, RM14, RM3HE	<b>Connector / Sensor</b> NEMA - NEMA connector NEMA-7P - NEMA 7 Pin connector ZG - Zhaga connector from above ZG-DN - Zhaga connector from below 2xZG - Zhaga connector from top and bottom RCR - Motion and twilight sensor no
<b>IP</b> IP65, IP66	<b>Control</b> 1DIM 2DIM DALI
<b>Protection class</b> I cl. II cl.	

## DIMENSIONS

<b>Tiara 2 LED XS</b>			3,4 kg
<b>Tiara 2 LED S</b>			4,2 kg
<b>Tiara 2 LED M</b>			5,2 kg
<b>Tiara 2 LED L</b>			6,5 kg

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## UNIQUE PARAMETERS



Lena C5+



Book 13



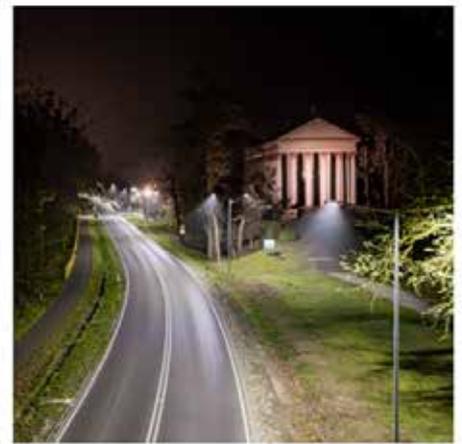
Book 15



Book 18

## APPLICATION AREAS

- illumination of motorways, motorways, national, provincial, district, municipal and housing estate roads
- illumination of car parks, cycle paths, pedestrian crossings, pavements and other outdoor areas such as squares and private areas
- lighting of non-public estate roads, construction sites and other internal and private areas



## AVAILABLE TECHNOLOGIES



The Tiara LED luminaire is compatible with the Zhaga-D4i standard, enabling easy integration with intelligent lighting control systems such as Clue City. The connection to the system offers the possibility to remotely control, monitor and optimise energy consumption. By adjusting brightness and analysing data in real time, it allows the lighting to be adapted to current needs, ensuring efficiency and savings.



The DarkSky Approved is award for companies with outstanding contributions to the development of lighting technologies that reduce light pollution. Dark Sky Approved products are distinguished by conservation-oriented design, innovation and the pursuit of harmony between light and the nightscape.

Lena C5+

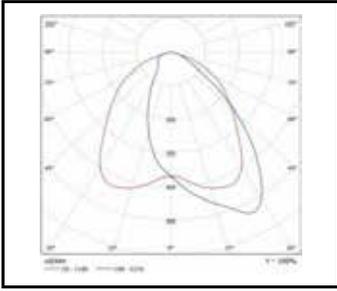
Tiara LED is not just ordinary lighting - it is a powerful answer to the demands of industrial and marine conditions (C5-M). The Lena C5+ not only illuminates its surroundings, but also effectively addresses the challenges of the marine environment. As evidenced by 1,500 hours of testing under harsh environmental conditions according to international standards.



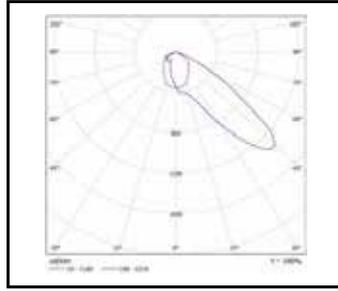
EPD environmental certification, confirming minimal environmental impact. Thanks to the closed-loop trading system and the calculation of the carbon footprint at each stage of the life cycle, the luminaires can be reused. They stand out for their high durability, resistance to external conditions and compatibility with intelligent control systems.

# TIARA LED

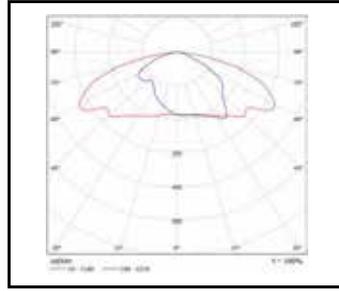
## GENERAL FAMILY CARD



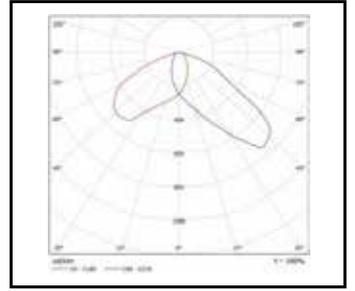
ASM2



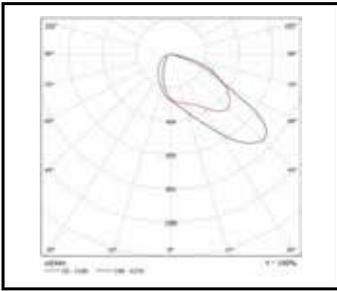
ASN



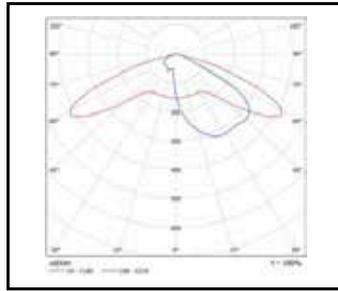
ASW



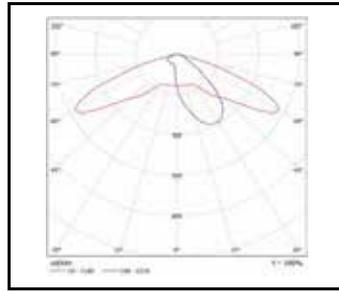
PL1



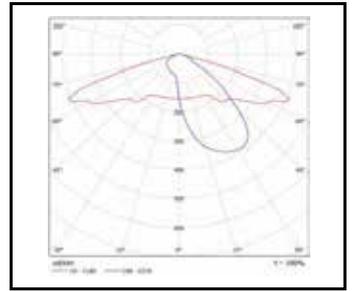
PP1



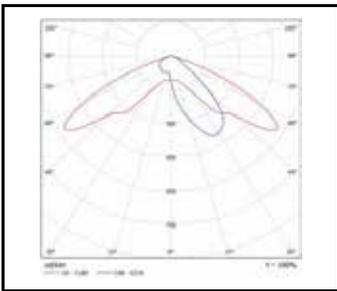
RM10



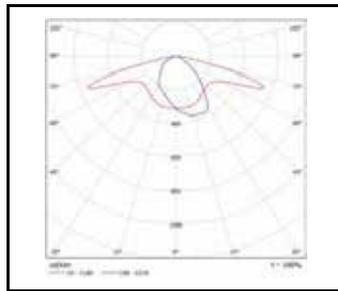
RM11



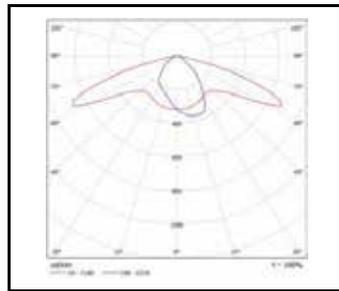
RM11+



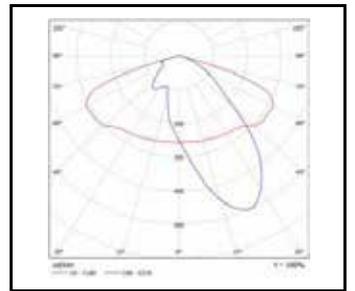
RM11HE



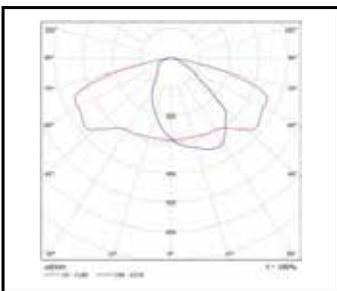
RM12



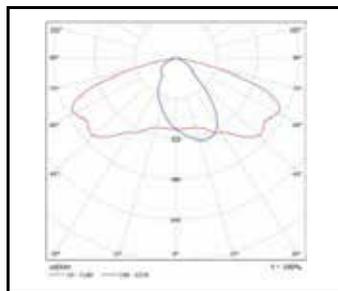
RM12HE



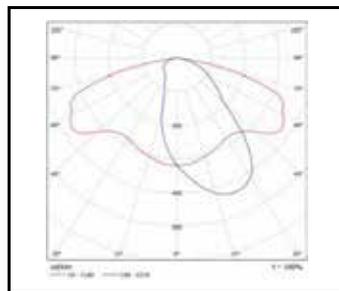
RM13



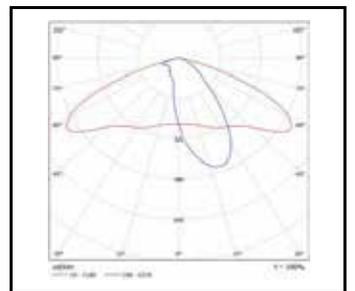
RM14



RM14HE



RM15



RM16

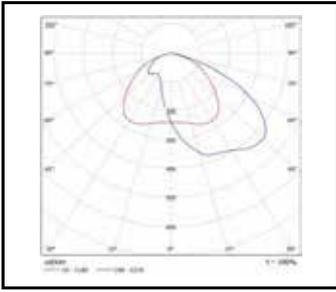




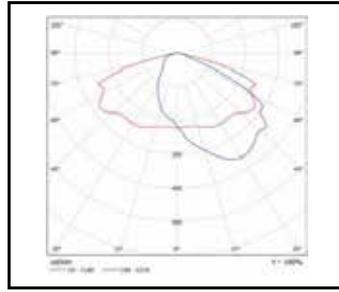
# TIARA LED

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## GENERAL FAMILY CARD



RW8



RW9