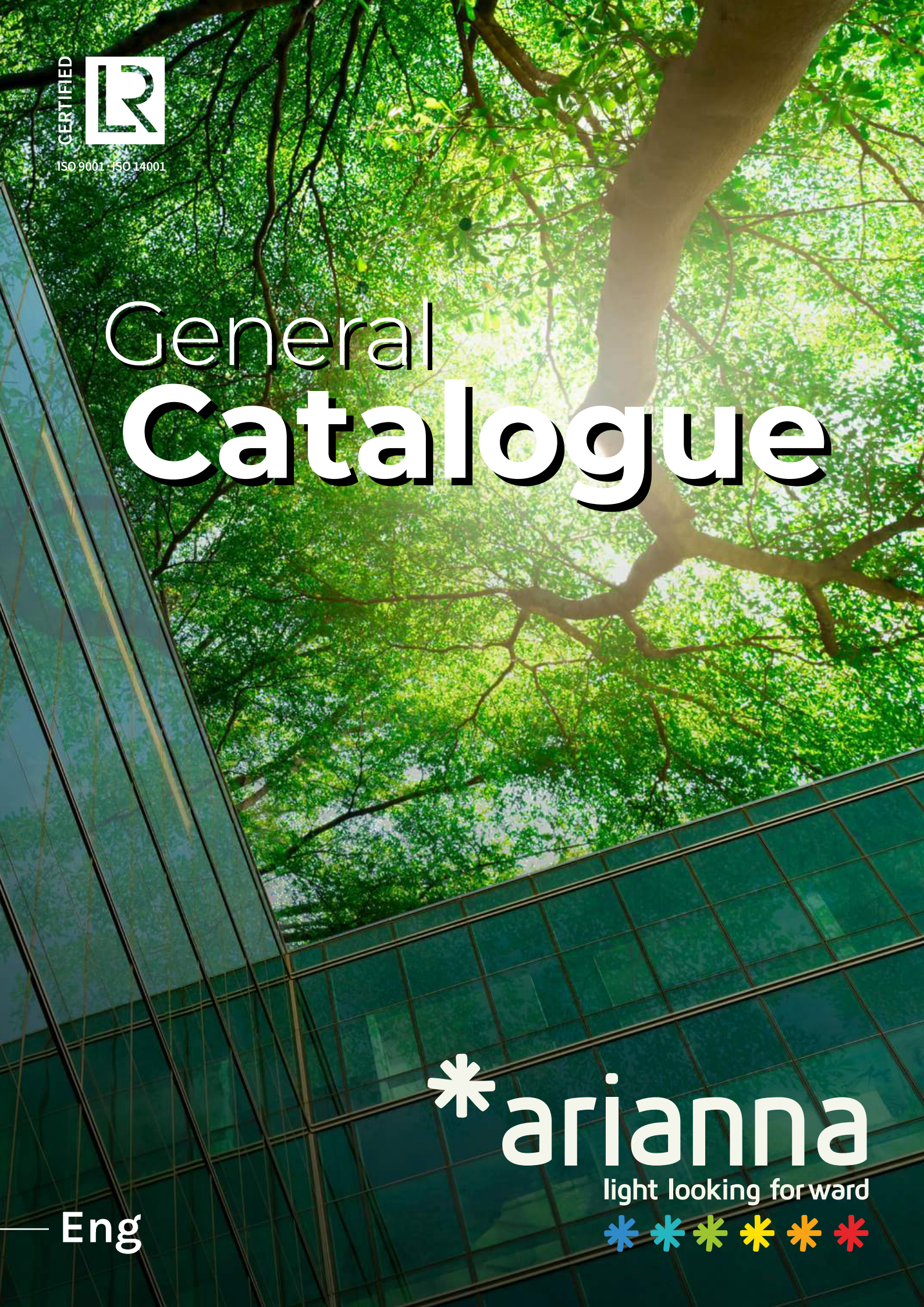
CERTIFIED

ISO 9001 ISO 14001

General Catalogue



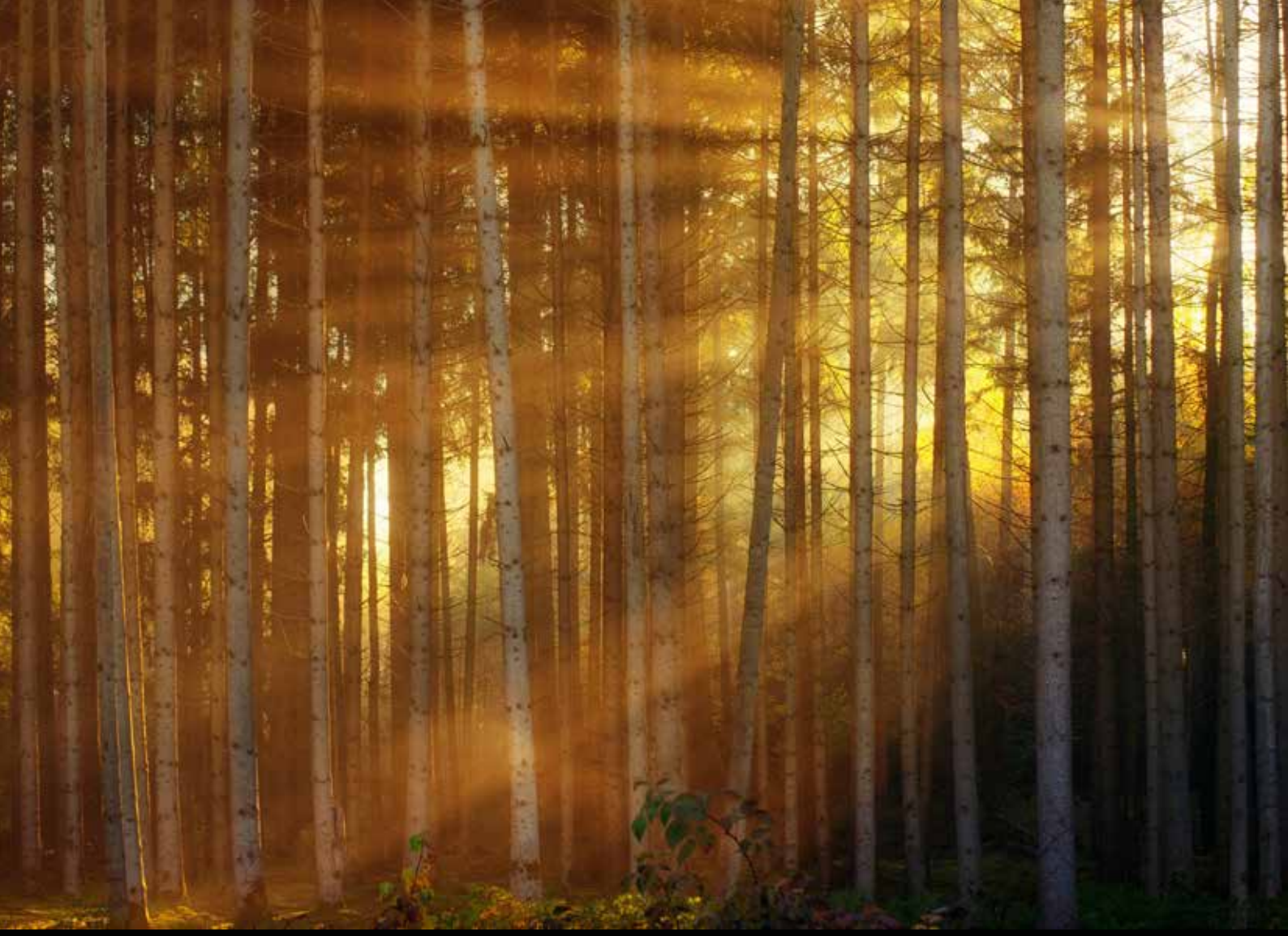
arianna

light looking forward

Eng


arianna
light looking forward

Index



Arianna: a history of light

Designing ambient lighting systems requires experience in cutting-edge technology but above all attention to detail, many details. Light offers the opportunity to experience spaces, to manage them and to create them. Light is essential to the place, to the objects being lit. We at Arianna work to ensure that our carefully designed lighting is able to **restore energy to living spaces**. Because good lighting guarantees a safer environment but also boosts the spirit of whoever experiences it.

> *It is often thought that the main objective of a luminaire is energy savings, perhaps confusing the ends with the means. Others believe that its technology should focus on communication as a node of a more complex architecture, even if it is often difficult to agree on what and with whom the device itself should be communicating. We truly believe that the primary objective of a product is to make the visual task possible, comfortable and emotional only when this, in fact, is not the case. At Arianna we pursue this goal every day.*
>
> *- C. Mazzola*

History of innovation

The right measure of success

Arianna is a joint stock company and the presence of important **multinational enterprises** in the company gives strength to the commitment aimed at quality and the development of an expertise capable of establishing itself internationally.

At the same time, it is a small company, in which industrial processes are driven by the people who develop the projects. For this reason, each intervention is transformed into a **new work experience working closely** with the public administration, with the contractor, with the company that chooses a partner that is able to express **authentic values**.

2022 - Inauguration of the new Piove di Sacco headquarters

curiosity

International Patent

The patent consists of the use of reflectors, within the luminaire, that skilfully conceal the sources and **focus the light beams of the LEDs**, directing them uniformly to the ground. In this way glare is significantly reduced. The results of applying the Total Reflection patent to Arianna lighting bodies create unique visual comfort and high energy savings.

Arianna S.p.a.

In 2008, a group of engineers decided to join together, driven by the desire to **invent something revolutionary** by combining the world of electronics with their love of astronomy, coming up with the patent they would call “Total Reflection”, filed the same year and recognised internationally in 2009.

In just a few years, the small start-up was noticed by large companies gravitating around the **international markets of innovative technology**. The majority shareholders of Carel, a multinational corporation specialising in electronics for air conditioning and refrigeration, became interested in Arianna and in 2012, they joined forces in a partnership. This partnership provided an important boost in the company’s growth; on the one hand, due to their industrial know-how and, on the other, due to the possibility of investing in innovation and perfecting the **development of technologically sustainable systems**.

Light Looking Forward

Arianna's philosophy

Light that doesn't stop because it's still not satisfied and knows no compromise. Light **focused on a future of needs and new possibilities**. Light that thinks about tomorrow and the future of tomorrow's generations.

The products and applications made by Arianna include **study and research**. They are the synthesis of a design process aimed at profiling the luminaire that is able to give a **new identity to the space to be lit**, and capable of satisfying the requirements of light, safety and technological development while meeting the energy and economic saving objectives.

Sustainable Development

The research by Arianna's development team is aimed entirely at **designing products that are highly efficient** and effective in optimising energy savings.
Arianna keeps a close eye on all stages of the production process of the lighting fixtures: from conception to construction, right up to the final sale to ensure the **highest quality standards**.

Made in Italy is a strong point and ensures **minimal environmental impact** because all the steps in the supply chain take place in Italy. From this viewpoint, all the lights designed and manufactured by Arianna combine these two aspects: high performance and **energy savings** which add value and represent an objective to be achieved: Sustainable Development.

*A **stringent environmental policy**, focused on **energy saving**, has been adopted in Arianna*

Quality assurance

Arianna **confirms compliance of its products with the international regulations** in force and also makes use of periodic checks issued by external certified laboratories and recognised by ACCREDIA.

Arianna can provide its customers with all the reports relating to the light emission, colorimetric and electrical characteristics of a lighting fixture. It makes use of a third-party certification body (UL) **to issue the ENEC mark**.

The Arianna's Quality department has drawn up a test plan to ensure **high product quality.**

In addition to tests performed in certified external laboratories, Arianna checks all the **quality of all the production with accurate monitoring at the end of the line** with the help of specialised equipment. The main functions of the LED luminaires (measurement of the absorbed power, **LED current**, test of dimming, switching on) and are tested on the 100% of Arianna production. IK degree, IP degree and photometries are tested in compliance with the defined AQL..

The following tests are periodically carried out on Arianna products in external **safety and performance** laboratories:
mechanical strength
static load test (wind) for attachments and fastenings
heat tests up to 50°C
insulation resistance
electrical rigidity
ground continuity
power measurement
corrosion resistance (salt spray)

Comprehensive Assistance

Arianna is able to assist its customers from the evaluation of the existing system to the post installation to ensure optimisation of the project and the maximisation of energy savings in compliance with the relevant regulations.

After the preliminary inspection to carefully assess the existing system and the choice of the best performing product, Arianna can offer its customers the **most advantageous solution in terms of energy savings**, environmental sustainability, and reduction in maintenance costs, calculating the **payback and savings in CO_2** emissions. After every installation, the company offers technical inspections and testing, complete with on-site lighting system verification in accordance with UNI standards.

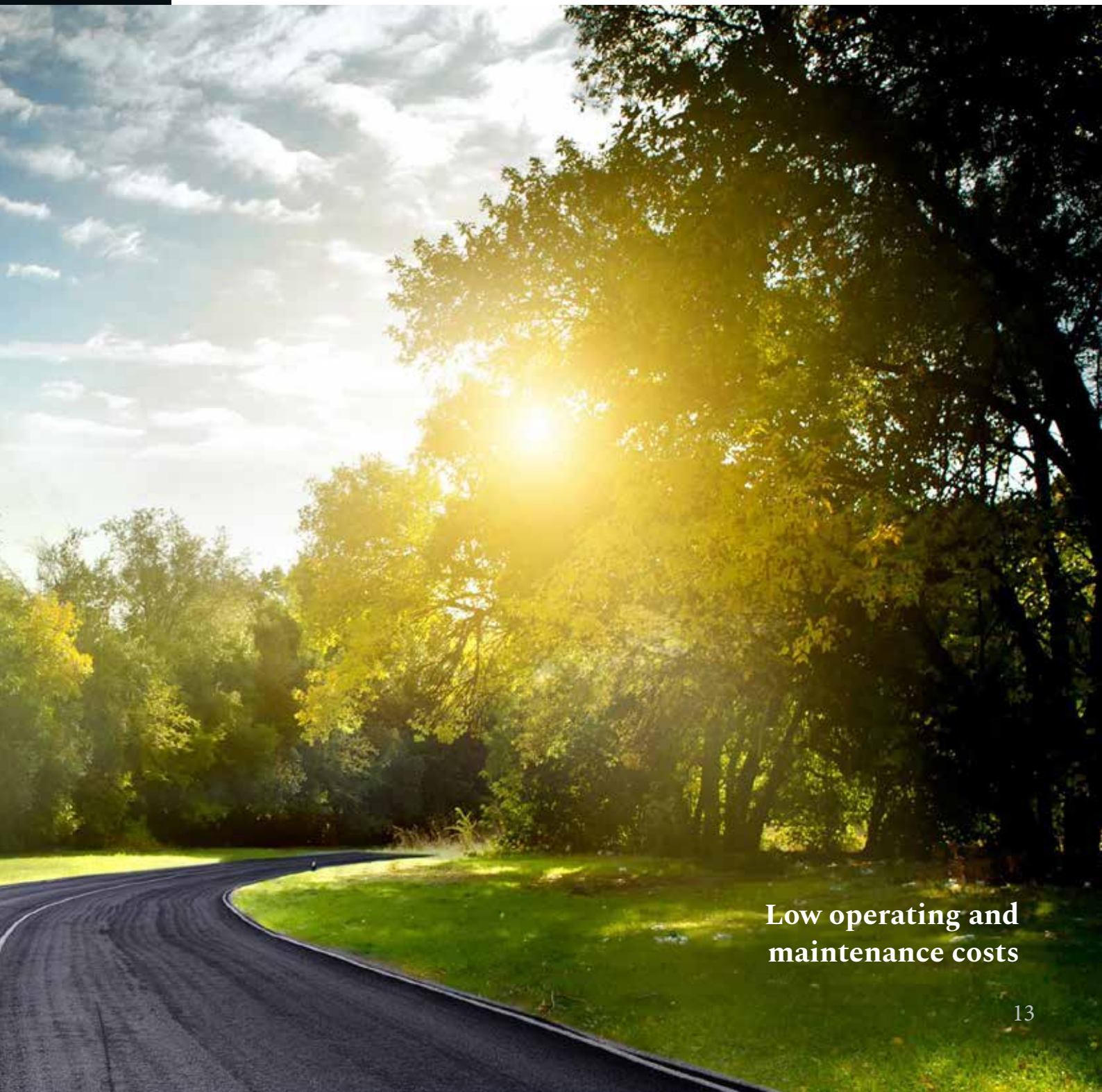
Street

To ensure the **right lighting** for the complexity of existing transport infrastructures, Arianna has developed **modular lighting systems that can be adapted to all needs**. Thanks to this technology, people feel safe, even at night, and can travel on any road without any problems. Cities save on costs and thanks to the remote-control systems that can be integrated into each light source, the entire system can be **efficiently managed and maintained**.

Arianna's technology, focusing on **visual comfort** takes the form of **uniform and diffused LED street lighting** that allows you to see clearly, with no areas in shadow. The city illuminated by Arianna is a **safe place**: road accidents decrease, and people feel free to go out at night.

The illumination of avenues, squares, fast roads, cycle paths and pedestrian areas is designed on a case-by-case basis with **specific lighting calculations** established in compliance with the regulations on light pollution, **efficiency**, **energy saving** and economic management.

Arianna lighting fixtures are designed to guarantee **excellent lighting** for the specific needs of **different urban settings**.



Low operating and maintenance costs

street product

Phileo PRO

Phileo Pro is the family of **reflective lighting fixtures** designed for street lighting

The **innovations devised and patented by Arianna** on reflected light systems ensure top performance with a new concept in versatility: one single **technological lighting solution** for a multitude of situations, greater attention to safety and energy saving, formats and solutions designed for all urban contexts, with maximum efficiency in small and large spaces.

Phileo Pro is the new family of street lighting luminaries with an **innovative design** in keeping with the Phileo tradition. Designed to **reduce the costs** of production while maintaining the **high performance** of the Phileo family.

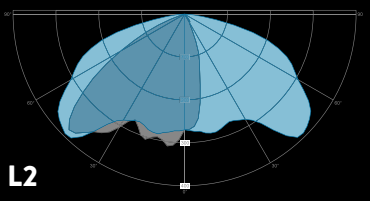
Technical features:

- Flux from 2,000 to 24,000 lm
- Class I - II
- Surge 10/10 kV
- IP66
- IK09

The **total reflection optical system** which maximises the efficacy of the luminous flux and **minimises waste** combined with the high lm/W efficiency of Phileo PRO, allow reaching of the highest levels of IPEI in all urban contexts to be reached.

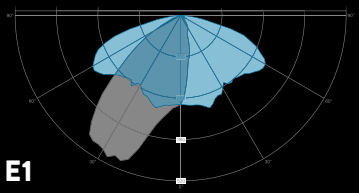
Available Optics

Luminous intensity classes G2



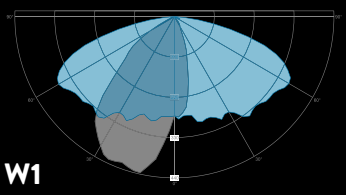
L2

Luminous intensity classes G2



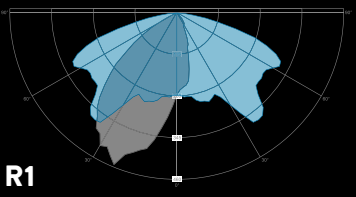
E1

Luminous intensity classes G2



W1

Luminous intensity classes G4



R1

Technical specifications

Phileo Pro Standard

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
PHP00A0PI00**A12P	2025	13	157
PHP00B0PI00**A12P	3030	20	151
PHP00B3PI00**A12P	4001	27	148
PHP00B6PI00**A18P	5010	32	156
PHP00C0PI00**A18P	6030	40	150
PHP00C5PI00**A24P	7100	46	156
PHP00D0PI00**A24P	8100	53	152
PHP00E0PI00**A36P	10010	63	159
PHP00F0PI00**A36P	12040	78	154
PHP00G0PI00**A36P	13460	90	149
PHP00G1PI00**A36P	14670	100	147
PHP00G4PI00**A36P	16700	115	145
PHP00H0PI00**A36P	18700	132	142
PHP00I0PI00**A36P	20500	148	138
PHP00J0PI00**A36P	22400	167	134
PHP00K0PI00**A36P	24000	184	131

Phileo Pro Zhaga

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
PHP00A0ZI00**A12P	2025	13	157
PHP00B0ZI00**A12P	3030	20	151
PHP00B3ZI00**A12P	4001	27	148
PHP00B6ZI00**A18P	5010	32	156
PHP00C0ZI00**A18P	6030	40	150
PHP00C5ZI00**A24P	7100	46	156
PHP00D0ZI00**A24P	8100	53	152
PHP00E0ZI00**A36P	10010	63	159
PHP00F0ZI00**A36P	12040	78	154
PHP00G0ZI00**A36P	13460	90	149
PHP00G1ZI00**A36P	14670	100	147
PHP00G4ZI00**A36P	16700	115	145
PHP00H0ZI00**A36P	18700	132	142
PHP00I0ZI00**A36P	20500	148	138
PHP00J0ZI00**A36P	22400	167	134
PHP00K0ZI00**A36P	24000	184	131

Phileo Pro Ispectionable

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
PHP00A0PIS0**A12P	2025	13	157
PHP00B0PIS0**A12P	3030	20	151
PHP00B3PIS0**A12P	4001	27	148
PHP00B6PIS0**A18P	5010	32	156
PHP00C0PIS0**A18P	6030	40	150
PHP00C5PIS0**A24P	7100	46	156
PHP00D0PIS0**A24P	8100	53	152
PHP00E0PIS0**A36P	10010	63	159
PHP00F0PIS0**A36P	12040	78	154
PHP00G0PIS0**A36P	13460	90	149

Phileo Pro Ispectionable

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
PHP00G1PIS0**A36P	14670	100	147
PHP00G4PIS0**A36P	16700	115	145
PHP00H0PIS0**A36P	18700	132	142
PHP00I0PIS0**A36P	20500	148	138
PHP00J0PIS0**A36P	22400	167	134
PHP00K0PIS0**A36P	24000	184	131

Configurator

Positions 1,2,3	**Family**	PHP	Phileo Pro
Positions 4,5,6,7	**Flux**	00A0	2000 lm
		00B0	3000 lm
		00B3	4000 lm
		00B6	5000 lm
		00C0	6000 lm
		00C5	7000 lm
		00D0	8000 lm
		00E0	10000 lm
		00F0	12000 lm
		00G0	13000 lm
		00G1	14500 lm
		00G4	16500 lm
Position 8	**Power Supply Program**	P	Standard Night Cycle
		F	Fixed
		D	DALI
		1	1 - 10 V
		Z	Zhaga/D4i 24V
		T	TLC conveyed frequency
		R	TLC Radio
Position 9	**CCT + CRI**	M	2200K - CRI 70
		N	2200K - CRI 80
		P	2700K - CRI 70
		Q	2700K - CRI 80
		H	3000K - CRI 70
		W	3000K - CRI 80
		I	4000K - CRI 70
		L	4000K - CRI 80
Positions 10,11	**Design**	00	Standard
		S0	Ispectionable
Positions 12,13	**Optic**	E1	Optic E1
		L2	Optic L2
		R1	Optic R1
		W1	Optic W1
Position 14	**Colour**	A	Anthracite
Positions 15,16	**N. led (12,18,24,36)**	12	12 LED
Position 17	**Fixing mode/Application**	P	Pole Class II
		Y	Pole Class I

EXAMPLE: PHILEO PRO pole version 18 LED, anthracite 6000 lm – 3000K CRI 80, optic W1 e Zhaga

COD.	P	H	P	0	0	C	0	Z	W	0	0	W	1	A	1	8	P
POS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

The resulting code is: **PHP00C0ZW00W1A18P**

street product

Phileo

Phileo is the family of lighting bodies with a **modular optical system** capable of maximising the effectiveness of lighting in any urban setting

Dedicated to the **lighting of urban and rural roads**, Phileo is able to adapt to any road scenario while meeting regulatory and customer requirements.

Technical features:

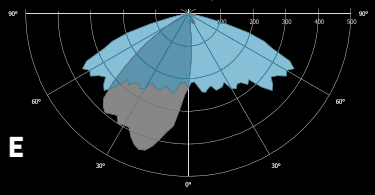
- Flux from 2.000 to 25,000 lm
- Class I - II
- Surge 10/10 kV
- IP66
- IK08
- Available in two versions: efficiency and smart

The optical system comprises a series of modules (maximum 6) with 8 basic optical configurations and thousands of combinations, with luminous flux from 4,000 to 25,000 lumens. The **modular structure** means quick-fit systems can be used to insert different optics, either symmetrical or asymmetrical, depending on **specific needs and customisations**.

8 basic optics have been designed which, thanks to the **ease of installation and replacement** in the 6 available slots, are able to obtain thousands of different photometries. The optics can also be angled at 0° and 180° to **give the correct lighting** where it is needed on roads and pavements.

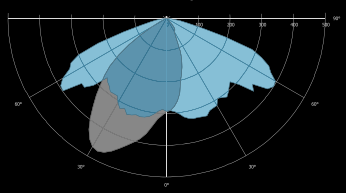
Single Optics

Luminous intensity classes G2



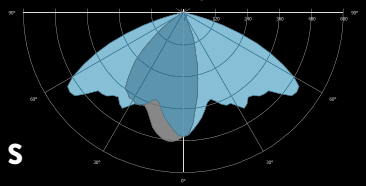
E

Luminous intensity classes G4



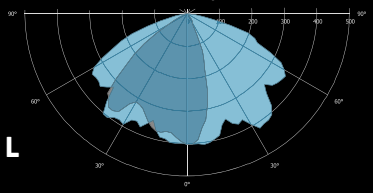
R

Luminous intensity classes G2



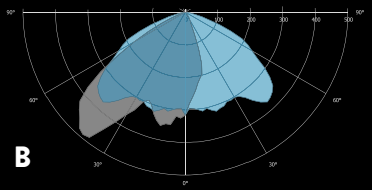
S

Luminous intensity classes G2



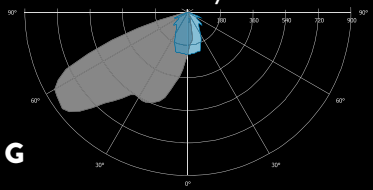
L

Luminous intensity classes G4



B

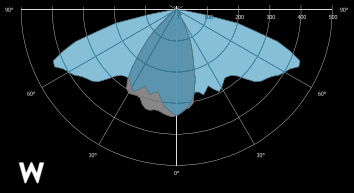
Luminous intensity classes G2



G

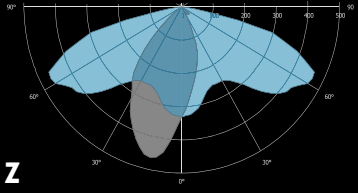
Double Optics

Luminous intensity classes G2



W

Luminous intensity classes G2



Z

Technical specifications

Phileo single optics

**E-L-R-S-B-G*

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
S-PA060PI*G3P	5981	39	153
S-PA070PI*G3P	7159	48	149
S-PA080PI*G3P	7991	55	145
S-PA090PI*G3P	9368	66	142
S-PA100PI*G3P	10162	73	139
S-PA120PI*G3P	12044	88	137
S-PA140PI*G3P	14016	107	131
S-PA080PI*G4P	8204	55	149
S-PA090PI*G4P	8964	60	149
S-PA100PI*G4P	10099	69	146
S-PA120PI*G4P	12037	84	143
S-PA140PI*G4P	13923	98	142
S-PA160PI*G4P	16122	116	139
S-PA180PI*G4P	17931	134	134
S-PA100PI*G5P	10097	67	151
S-PA120PI*G5P	12037	81	149
S-PA140PI*G5P	13975	96	146
S-PA160PI*G5P	16340	115	142
S-PA180PI*G5P	18187	130	140
S-PA200PI*G5P	19995	145	138
S-PA120PI*G6P	12070	81	149
S-PA140PI*G6P	13801	94	147
S-PA160PI*G6P	16066	111	145
S-PA180PI*G6P	17703	124	143
S-PA200PI*G6P	19849	141	141
S-PA225PI*G6P	21930	159	138
S-PA250PI*G6P	24986	185	135

Phileo double optics

**W-Z*

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
S-PA040PI*G4P	4047	27	150
S-PA045PI*G4P	4446	30	148
S-PA050PI*G4P	5051	34	149
S-PA060PI*G4P	6031	41	147
S-PA070PI*G4P	7070	51	139
S-PA080PI*G4P	8030	60	134
S-PA090PI*G4P	9001	69	130
S-PA100PI*G4P	10002	79	127
S-PA060PI*G6P	5981	39	153
S-PA070PI*G6P	7159	48	149
S-PA080PI*G6P	7991	55	145
S-PA090PI*G6P	9095	65	140
S-PA100PI*G6P	9924	72	138
S-PA120PI*G6P	12139	88	138
S-PA140PI*G6P	14016	107	131

Phileo Mini ottiche singole

**E-L-R-S-B-G*

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
S-MA020PI*G1P	2012	14	144
S-MA025PI*G1P	2511	18	140
S-MA030PI*G1P	3016	21	144
S-MA035PI*G1P	3507	25	140
S-MA040PI*G1P	4054	30	135
S-MA045PI*G1P	4492	33	136
S-MA040PI*G2P	4047	27	150
S-MA045PI*G2P	4446	30	148
S-MA050PI*G2P	5051	34	149
S-MA060PI*G2P	6031	41	147
S-MA070PI*G2P	7070	51	139
S-MA080PI*G2P	8030	60	134
S-MA090PI*G2P	9001	69	130
S-MA100PI*G2P	10002	79	127

Phileo Mini ottiche doppie

**W-Z*

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
S-MA020PI*G2P	2012	14	144
S-MA025PI*G2P	2511	18	140
S-MA030PI*G2P	3016	21	144
S-MA035PI*G2P	3507	25	140
S-MA040PI*G2P	4054	30	135
S-MA040PI*G2P	4492	33	136

Configurator

Positions 1,2	**Family prefix**	S-	
Position 3	**Family**	M	Phileo Mini
		P	Phileo
Position 4	**Customization**	A	Arianna
Positions 5, 6, 7	**Flux**	123	12300 lm
Position 8	**Pover supply program**	F	Fixed
		D	DALI
		T	TLC PLC
		P	Standard Night Cycle
		N	Nema-Socket
		R	TLC Radio
		Z	Zhaga
		1	1 – 10 V
Position 9	**CCT + CRI**	H	3000K – CRI 70
		W	3000K – CRI 80
		I	4000K – CRI 70
		L	4000K – CRI 80
		Z	5700K – CRI 70
Position 10	**Optics**	B	Optic B
		E	Optic E
		G	Optic G
		L	Optic L
		R	Optic M
		S	Optic R
		W	Optic S
		Z	Optic W
Position 11	**Colour**	B	Black
		G	Grey
Position 12	**N. modules**	1-6	1-6 modules
Position 13	**Fixing mode/application**	P	Pole
		S	Suspended
		Y	Pole Class I

EXAMPLE: PHILEO pole version 6 modules, grey, 12300 lm – 3000K CRI 80, optic R e DALI

COD.	S	-	P	A	1	2	3	D	W	R	G	6	P
POS.	1	2	3	4	5	6	7	8	9	10	11	12	13

The resulting code is: **S-PA123DWRG6P**

street product

Kit retrofit

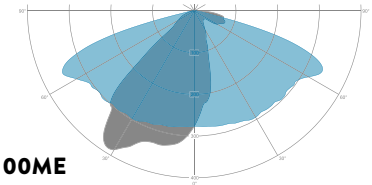
The retrofit kit Arianna completes the **street lighting** offer for road and urban areas.

Thanks to the **new system** being adaptable to all existing structures, Arianna guarantees **maximum energy saving,** preserving the aesthetics of historical lighting products
The luminaire is **designed to last over time** and to accommodate future technological innovations.

A module that can be accommodated within an artistic lighting fixture

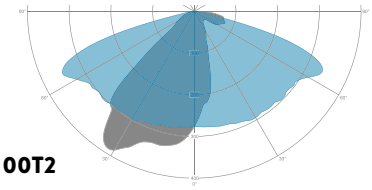
Available Optics

Luminous intensity classes G2



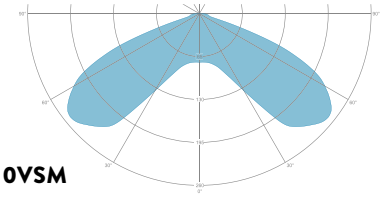
00ME

Luminous intensity classes G2



00T2

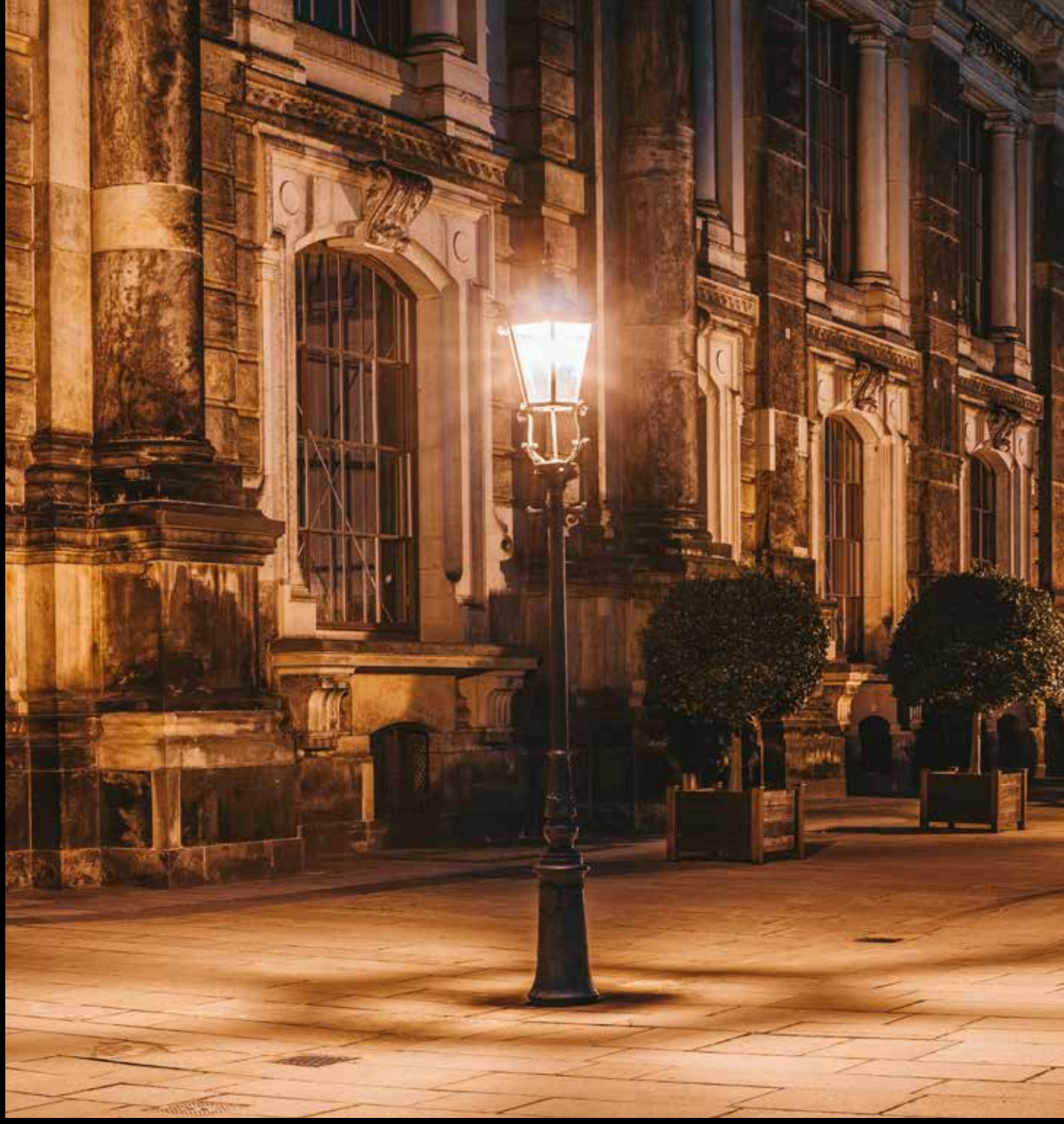
Luminous intensity classes G4



0VSM

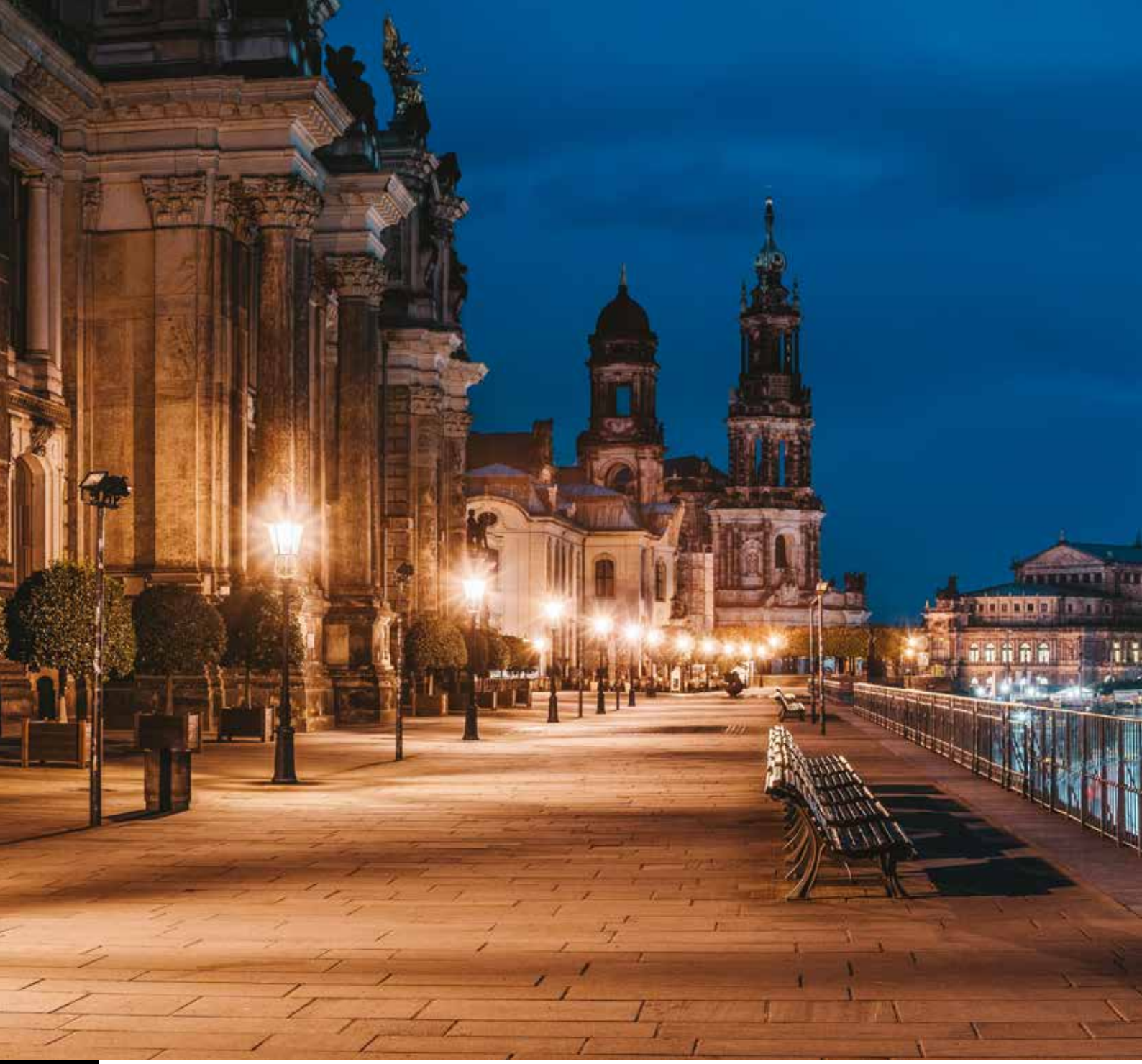
Technical features:

- Flux up to 9,000 lm
- Efficiency up to 145 lm/W
- Asymmetric, symmetric and rotosymmetric optics
- Different options of CCT (2200, 2700, 3000, 4000 K)
- Class I-II
- Surge 10/6 kV
- IP66
- IK08



Technical specifications

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
KIT00A0PI00MEA12	2292	19	119
KIT00B0PI00MEA12	3021	22	138
KIT00B3PI00MEA12	4107	30	139
KIT00B6PI00MEA12	5017	38	132
KIT00C3PI00MEA12	6814	56	121
KIT00C5PI00MEA24	7616	54	142
KIT00D0PI00MEA24	9089	66	137

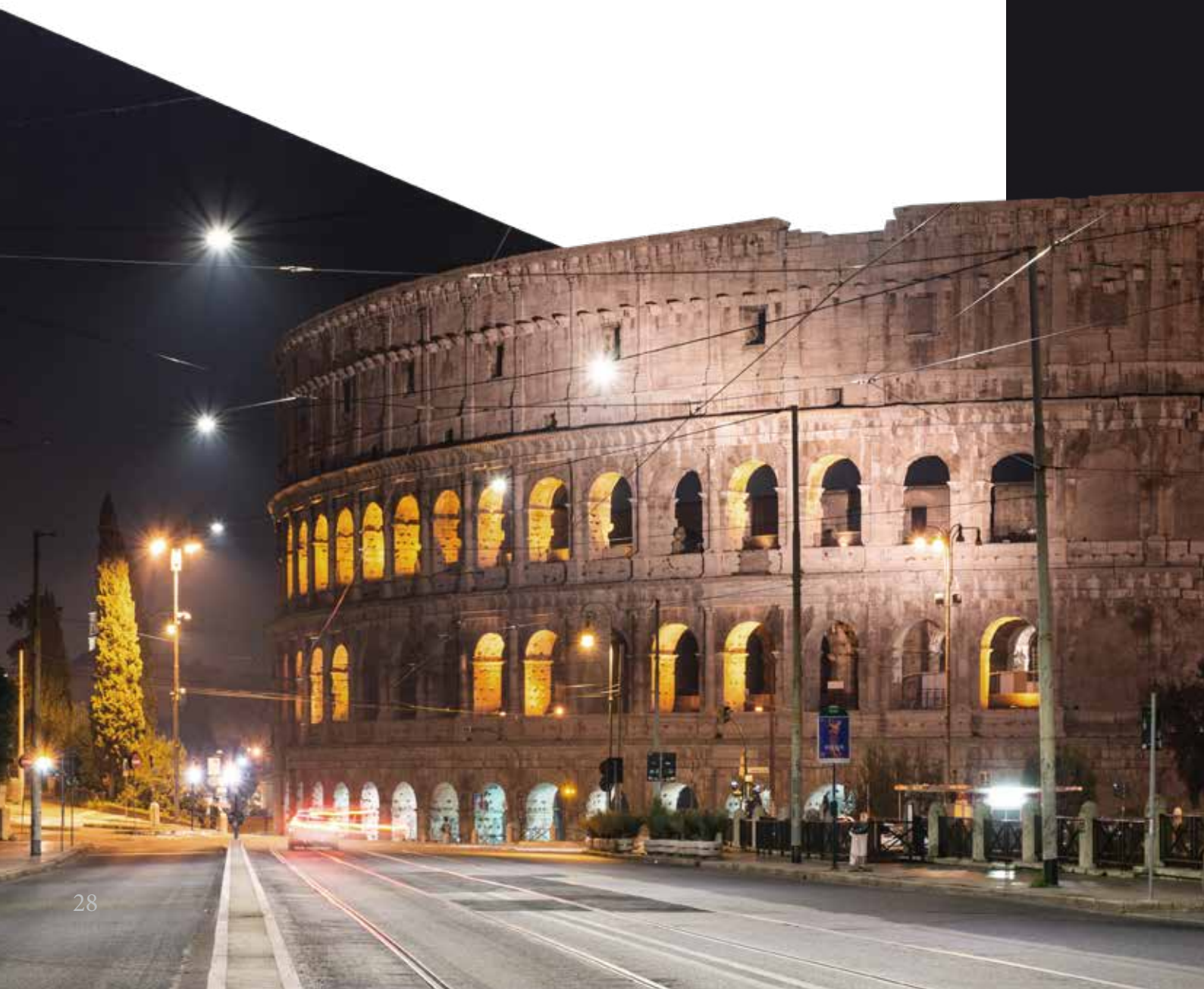


City of Rome

street case

Rome didn't just need a catalogue product, a standard product. Rome needed a product suited to the peculiarities that a city such as the capital has.

Compared to other towns or cities, Rome has on average wider streets and deeper pavements. In order to precisely achieve the lighting requirements, set out in the tender, Arianna studied **special optics**, developing atom optics which were then combined into optics defined as molecule capable of **satisfying the required lighting levels**.



In the historic areas, **Margot**, Arianna's **innovative and modular solution** for integration into the city's artistic bell towers, was installed in the historic areas.
In the centre, in order to be able to illuminate the streets where it was not possible to insert poles, Arianna supplied Snell suspended.
In the inner suburbs for pole installations around the historic centre, **Phileo** was used **in different configurations** according to the varying street requirements.

Technical datasheet !

In Rome, the new lighting has guaranteed in Rome an **energy saving of 60%**, unique visual comfort and significant resizing of the specific urban colours. It has also resulted in a radical reduction in crime and **greater safety** around the historic centre and in the inner suburbs.

70,000 lighting fixtures installed: 5,000 Margot in the artistic areas of the city, 10,000 Snell on festoons and 55,000 Phielo on poles and in tunnels and galleries.

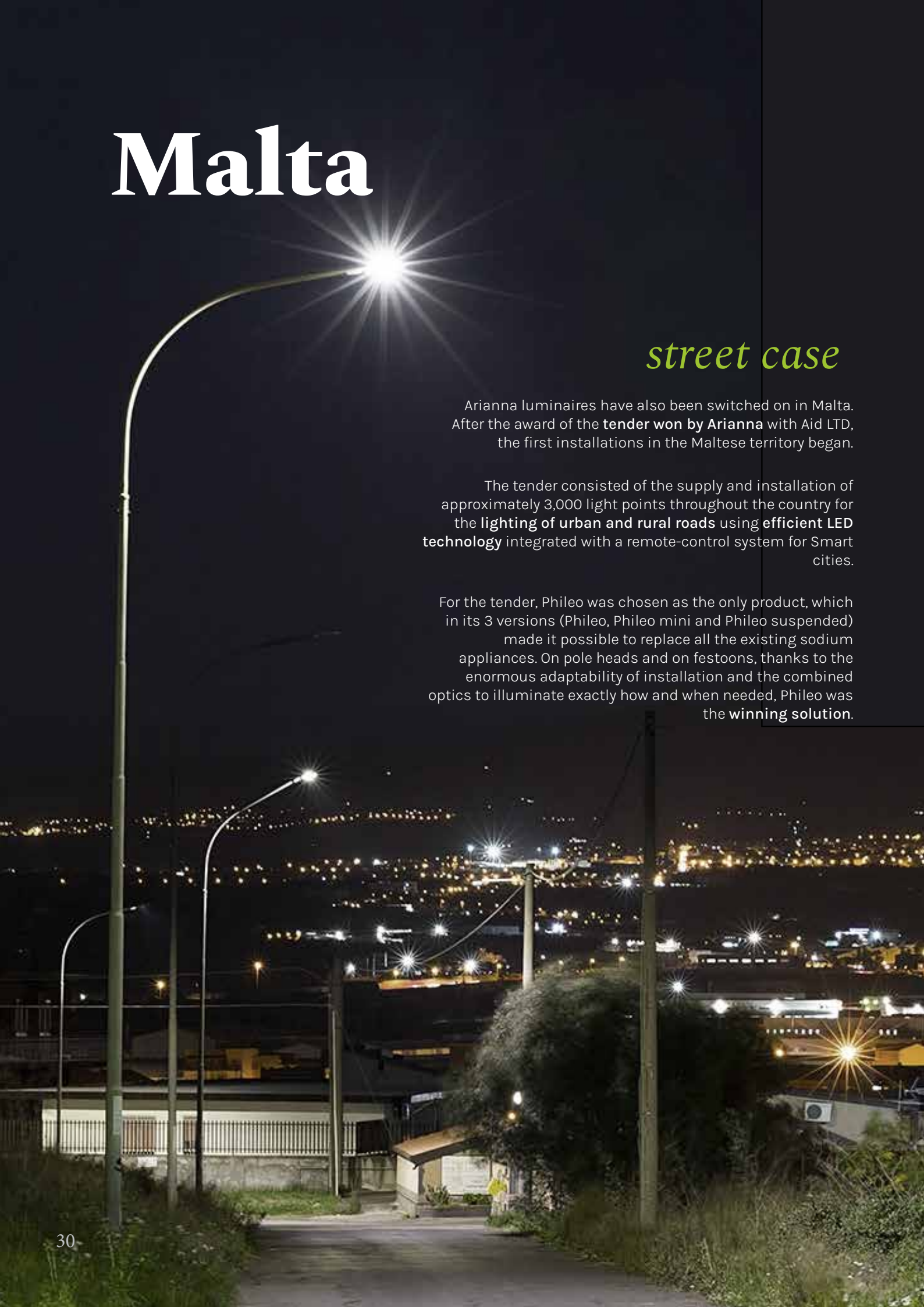
Malta

street case

Arianna luminaires have also been switched on in Malta. After the award of the **tender won by Arianna** with Aid LTD, the first installations in the Maltese territory began.

The tender consisted of the supply and installation of approximately 3,000 light points throughout the country for the **lighting of urban and rural roads** using **efficient LED technology** integrated with a remote-control system for Smart cities.

For the tender, Phileo was chosen as the only product, which in its 3 versions (Phileo, Phileo mini and Phileo suspended) made it possible to replace all the existing sodium appliances. On pole heads and on festoons, thanks to the enormous adaptability of installation and the combined optics to illuminate exactly how and when needed, Phileo was the **winning solution**.



The **total reflection patent** applied to all the reflectors that compose the Phileo optical system and the specific **lighting engineering studies** of the Arianna team have optimised visual comfort and energy efficiency.

Technical datasheet

The result obtained by the Arianna products is in compliance with the lighting standards limit with a **65% reduction in energy costs**.

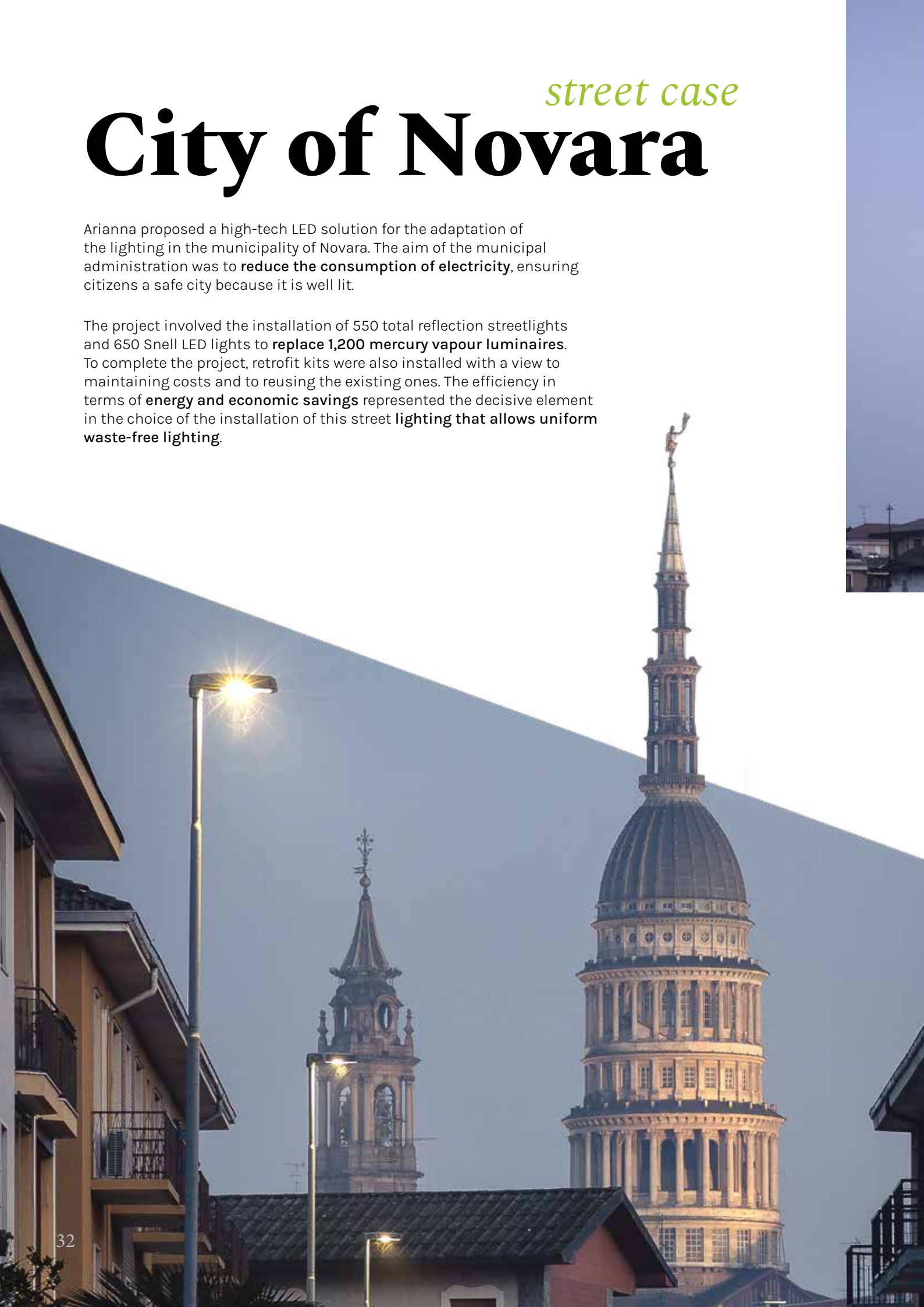
The fixtures are fitted with the Revetec module for the **remote-controlled management of all light points** and to optimise the reduction of consumption. The streetlights supplied were Phileo, Phileo mini and Phileo suspended with different power sizes (from 30 to 90 W) for an efficiency of up to 145 lm/W.

street case

City of Novara

Arianna proposed a high-tech LED solution for the adaptation of the lighting in the municipality of Novara. The aim of the municipal administration was to **reduce the consumption of electricity**, ensuring citizens a safe city because it is well lit.

The project involved the installation of 550 total reflection streetlights and 650 Snell LED lights to **replace 1,200 mercury vapour luminaires**. To complete the project, retrofit kits were also installed with a view to maintaining costs and to reusing the existing ones. The efficiency in terms of **energy and economic savings** represented the decisive element in the choice of the installation of this street **lighting that allows uniform waste-free lighting**.



The advantages from the point of view of light pollution and the safety of citizens are also significant: the avenues, in fact, are **uniformly lit**, guaranteeing the safe flow of traffic. For this reason, the new Novara lighting guarantees high p**erformance and is maintenance-free**.

Technical datasheet

The solution proposed by Arianna accompanies the Municipality of Novara in the **process of transforming it into a Smart City**. The lighting is smart thanks to the **remote-control** function that allows personalised point-to-point management.

LED technology increases energy savings, significantly reducing energy costs: in fact, an **overall saving of 60%** is calculated. Thanks to this new system, the municipality has halved the costs of public lighting and energy consumption.

The use of the **total reflection patent** guarantees uniform lighting and high standards of visual comfort.

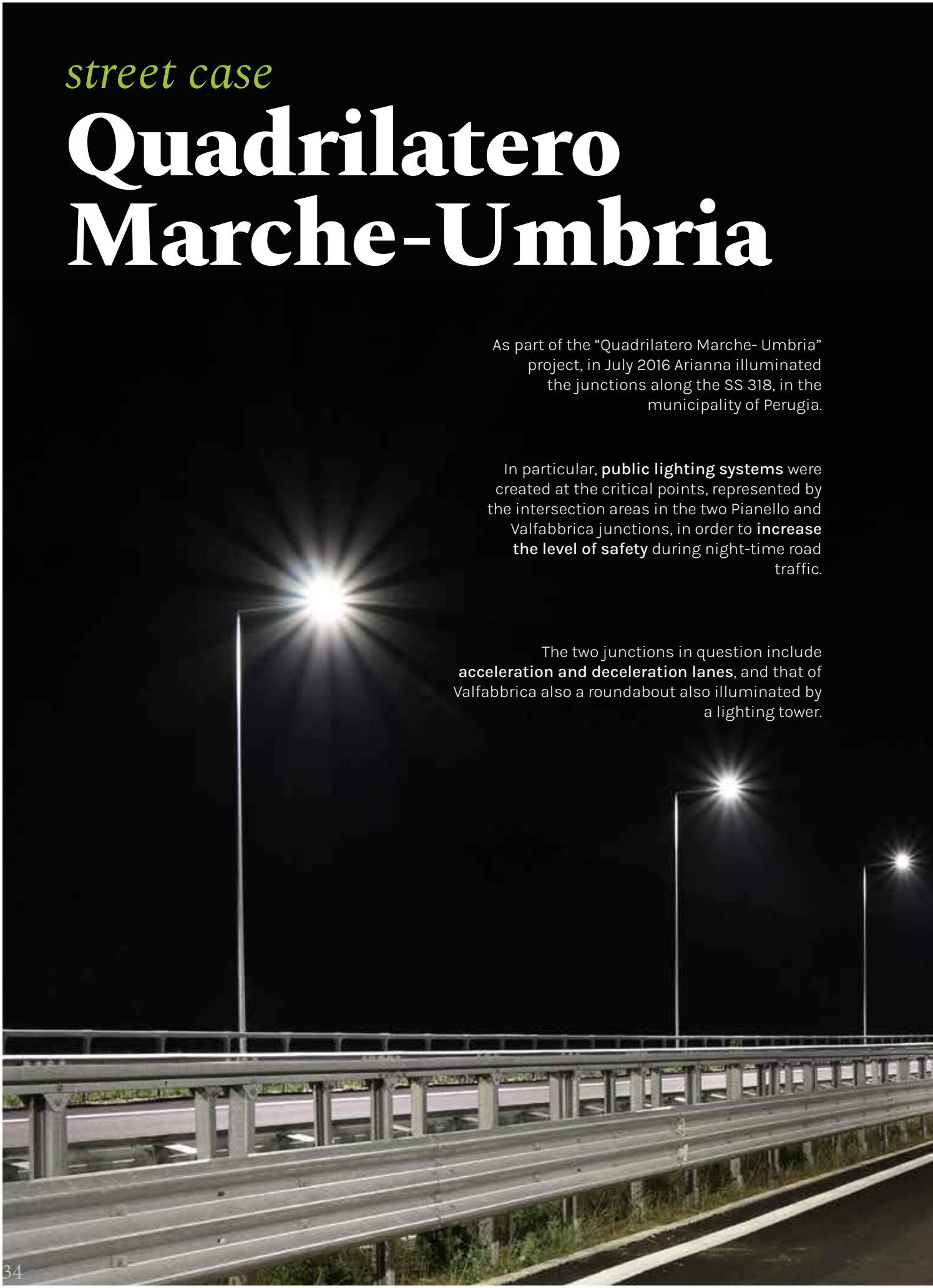
street case

Quadrilatero Marche-Umbria

As part of the "Quadrilatero Marche- Umbria" project, in July 2016 Arianna illuminated the junctions along the SS 318, in the municipality of Perugia.

In particular, **public lighting systems** were created at the critical points, represented by the intersection areas in the two Pianello and Valfabbrica junctions, in order to **increase the level of safety** during night-time road traffic.

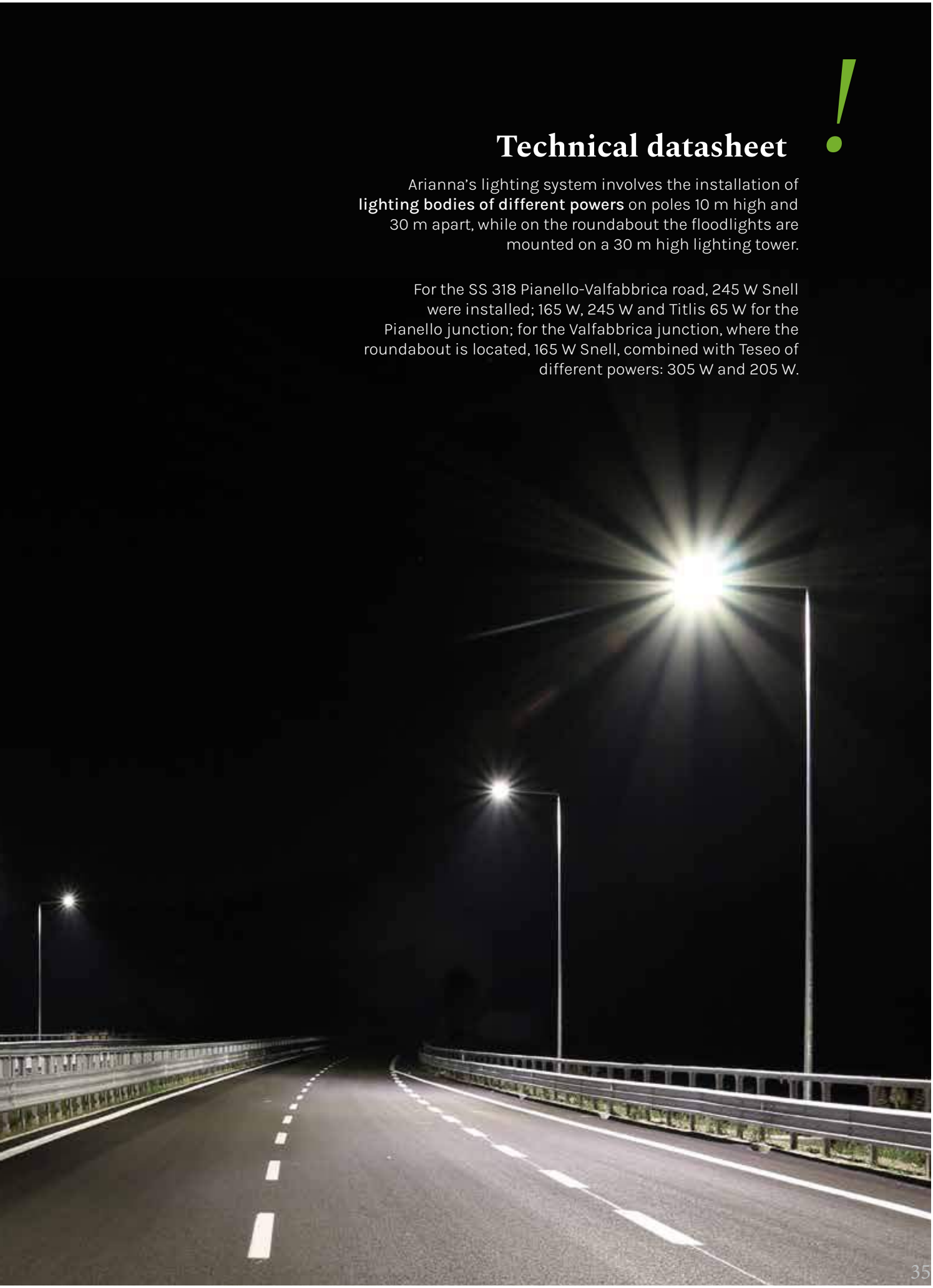
The two junctions in question include **acceleration and deceleration lanes**, and that of Valfabbrica also a roundabout also illuminated by a lighting tower.



Technical datasheet

Arianna's lighting system involves the installation of **lighting bodies of different powers** on poles 10 m high and 30 m apart, while on the roundabout the floodlights are mounted on a 30 m high lighting tower.

For the SS 318 Pianello-Valfabbrica road, 245 W Snell were installed; 165 W, 245 W and Titlis 65 W for the Pianello junction; for the Valfabbrica junction, where the roundabout is located, 165 W Snell, combined with Teseo of different powers: 305 W and 205 W.



Smart City

Safety, services, energy saving, sustainability. **Effective and efficient lighting**, aimed at responding to the needs of city dwellers.

Luminaires are infrastructures that extend throughout the territory and which become of enormous interest for the **new SMART CITY models**. The lamppost is no longer just the object designed to light streets, cities, tunnels, cycle paths... In the new vision of a **smart city**, the lamppost becomes a point connected to the information collection system and is used to manage responses to needs (IoT).

What do you expect from your city?

Maximum Safety

A smart connected system is able to **adjust the brightness of the luminaire based** on the visibility conditions to make the driving experience as comfortable as possible.

Containment of energy consumption

Light arrives where and when it is needed, **optimising consumption and avoiding unnecessary waste**, dynamically adjusting the luminous flux, responding to the needs of the moment in a present that is increasingly projected towards the future.

Avant-garde

Preparation of the luminaires for **connection to the network** makes them the perfect infrastructure to enable future monitoring services and information gathering for municipalities.

Constantly monitored systems

Management of the lighting system is monitored remotely. Faults or losses of efficiency are recognised to ensure **immediate interventions and to maximise the safety of citizens**. Constant observation of the actual consumption of the public lighting system.

How do streetlights become ***smart****?*

Arianna supplies products with ZHAGA/D4i or NEMA interface which makes them **compatible with all current and future external control technologies**. Technologies enclosed in nodes applicable to the luminaire that create a communication network covering the entire area, collect information and convey it into Gateways that send it to the central software and vice-versa. The information or commands from the central software arrive at the nodes to cover the entire territory.

Sport

Sports lighting at all levels must comply with specific regulations. **Lighting and lighting design** are the key elements in improving the event experience for athletes and spectators alike.

Arianna offers **high-efficiency solutions** for every type of facility, from the smallest to the most complex, capable of **satisfying the needs** of users and the surrounding environment.

Sports fields, swimming pools, sports halls and gyms: **uniformity of light and visual comfort** are fundamental in sports events for efficient athletic performances.

LED lights and specific configurations with minimum dispersion allow Arianna's systems to achieve maximum energy savings, low maintenance and zero glare.

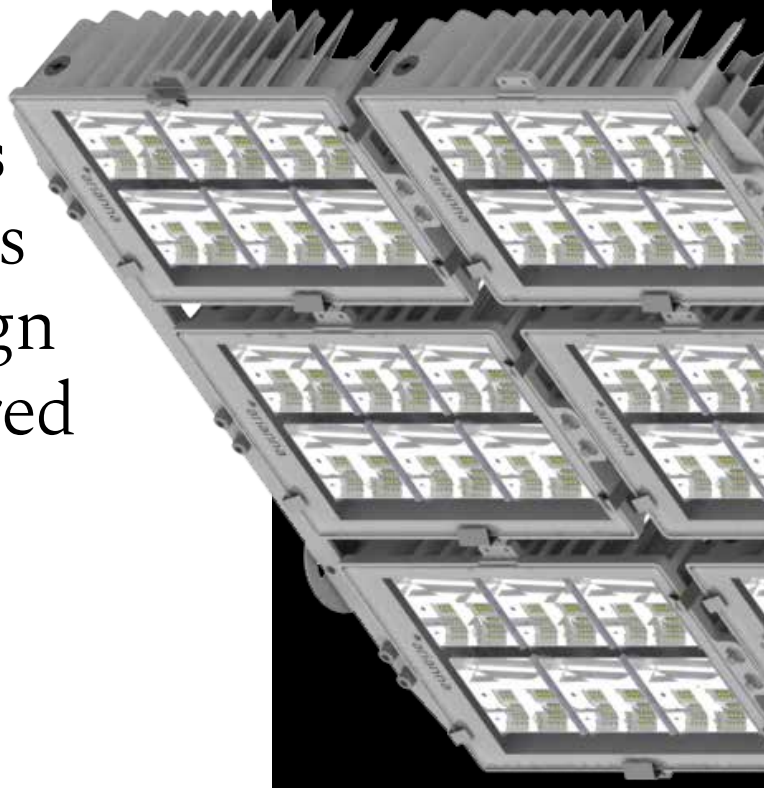
Careful design plus high-performance and quality floodlights guarantee a rapid **financial payback**.

Efficiency, **economic savings**, and the **environment** are the building blocks of Arianna's solutions for illuminating sports grounds.

sport product

Petrarca 2.0

Petrarca: the LED solution that **multiplies energy savings** in sports installations, from design through to the configured lighting system.

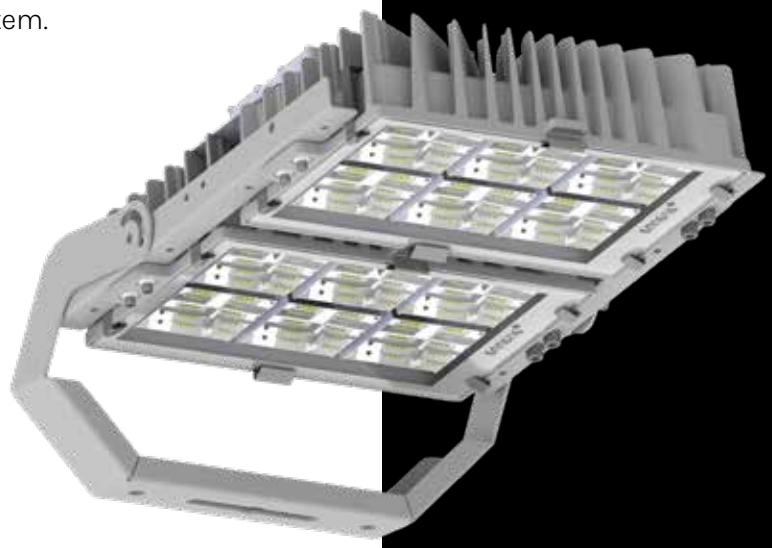


For sports lighting, Arianna has designed a **single product**, a solution for every type of lighting requirements. Petrarca is a modular spotlight that, with five different configurations and luminous flux from 10,000 to 181,000 lumens, ensures the **right lighting for every space** and every situation.

The compact and modular shape facilitates installation, while the use of **high-quality materials** means maintenance is reduced to a minimum, ensuring long life for the entire system.

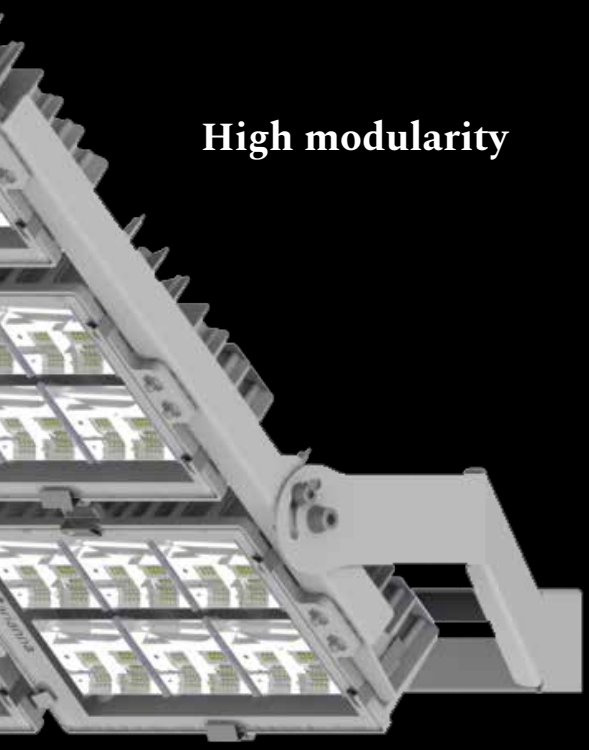
Petrarca lighting solutions maximise **energy savings** thanks to the total reflection system.

The system uses the exact amount of energy needed: for training, competitions or even for partial use of the pitch or court. The thermal study reduces the heat emissions and guarantees a long-lasting system with little maintenance.



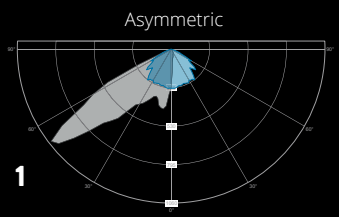
Total reflection optics

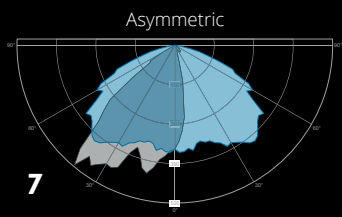
Available Optics

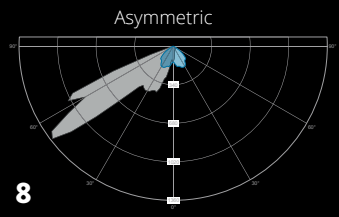


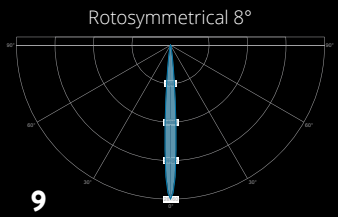
High modularity

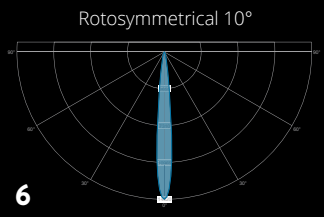
Petrarca 2.0 is the modular projector that can be adapted to a variety of lighting needs. The total reflection applied to the optics of Petrarca 2.0 ensures uniform illumination with **zero glare**. For small and large systems: **super energy saving, super visual comfort, low maintenance**.

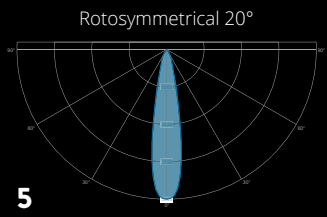


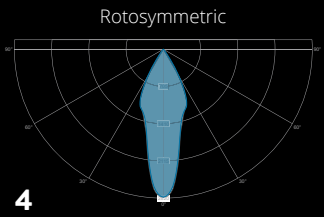


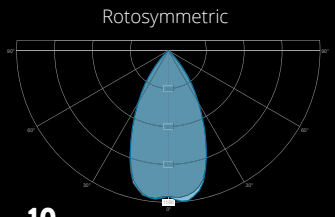


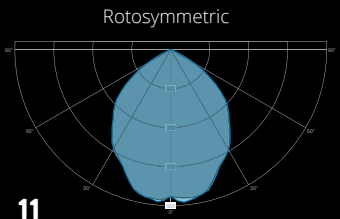


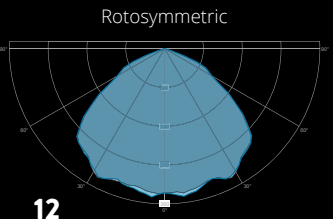












Technical features:

- Modules from ½ to 6
- Flux up to 181,000 lm

Dedicated to the **lighting of large areas and sports fields**. Petrarca is able to adapt to all lighting needs for small and large installations thanks to its modularity.

Technical specifications

Petrarca 2.0 standard

CODE	N. MODULES	OPTICS	CCT-CRI	FLUX (lm)	POWER (W)	EFF. (lm/W)
PET0098FY0001G00FE	1/2	01-07-08	4000K-CRI70	10200	72	142
PET0134FY0001G00FE	1/2	01-07-08	4000K-CRI70	13900	97	143
PET0107FV0004G00FE	1/2	04-10-11-12	4000K-CRI80	10700	72	148
PET0141FV0004G00FE	1/2	04-10-11-12	4000K-CRI80	14100	96	147
PET0088FY0005G00FE	1/2	05-06-09	4000K-CRI70	10100	74	136
PET0126FY0005G00FE	1/2	05-06-09	4000K-CRI70	14400	115	125
PET0207FY0001G01FE	1	01-07-08	4000K-CRI70	20100	139	144
PET0256FY0001G01FE	1	01-07-08	4000K-CRI70	29600	207	142
PET0196FV0004G01FE	1	04-10-11-12	4000K-CRI80	21300	144	148
PET0242FV0004G01FE	1	04-10-11-12	4000K-CRI80	29000	196	148
PET0186FY0005G01FE	1	05-06-09	4000K-CRI70	21200	155	136
PET0260FY0005G01FE	1	05-06-09	4000K-CRI70	29600	237	125
PET0415FY0001G02FE	2	01-07-08	4000K-CRI70	43200	301	143
PET0513FY0001G02FE	2	01-07-08	4000K-CRI70	57400	403	142
PET0393FV0004G02FE	2	04-10-11-12	4000K-CRI80	44900	303	148
PET0485FV0004G02FE	2	04-10-11-12	4000K-CRI80	59500	404	147
PET0390FY0005G02FE	2	05-06	4000K-CRI70	44400	355	125
PET0521FY0005G02FE	2	05-06-09	4000K-CRI70	59200	473	125
PET0623FY0001G03FE	3	01-07-08	4000K-CRI70	72300	505	143
PET0770FY0001G03FE	3	01-07-08	4000K-CRI70	92100	654	141
PET0589FY0004G03FE	3	04-05-06-09	4000K-CRI70	73900	585	126
PET0727FY0004G03FE	3	04-05-06-09	4000K-CRI70	88700	703	126
PET0831FY0001G04FE	4	01-07-08	4000K-CRI70	109200	771	142
PET1027FY0001G04FE	4	01-07-08	4000K-CRI70	125000	882	142
PET0785FY0004G04FE	4	04-05-06-09	4000K-CRI70	103400	811	127
PET0970FY0004G04FE	4	04-05-06-09	4000K-CRI70	118300	926	128
PET1246FY0001G06FE	6	01-07-08	4000K-CRI70	144600	999	145
PET1540FY0001G06FE	6	01-07-08	4000K-CRI70	186500	1313	142
PET1178FY0004G06FE	6	04-05-06-09	4000K-CRI70	147800	1159	128
PET1455FY0004G06FE	6	04-05-06-09	4000K-CRI70	177500	1390	128

Petrarca 2.0 version DALI2

CODE	N. MODULES	OPTICS	CCT-CRI	FLUX (lm)	POWER (W)	EFF. (lm/W)
PET0098DY0001G00FE	1/2	01-07-08	4000K-CRI70	10200	72	142
PET0134DY0001G00FE	1/2	01-07-08	4000K-CRI70	13900	97	143
PET0107DV0004G00FE	1/2	04-10-11-12	4000K-CRI80	10700	72	148
PET0141DV0004G00FE	1/2	04-10-11-12	4000K-CRI80	14100	96	147
PET0088DY0005G00FE	1/2	05-06-09	4000K-CRI70	10100	74	136
PET0126DY0005G00FE	1/2	05-06-09	4000K-CRI70	14400	115	125
PET0207DY0001G01FE	1	01-07-08	4000K-CRI70	20100	139	144
PET0256DY0001G01FE	1	01-07-08	4000K-CRI70	29600	207	142
PET0196DV0004G01FE	1	04-10-11-12	4000K-CRI80	21300	144	148
PET0242DV0004G01FE	1	04-10-11-12	4000K-CRI80	29000	196	148
PET0186DY0005G01FE	1	05-06-09	4000K-CRI70	21200	155	136
PET0260DY0005G01FE	1	05-06-09	4000K-CRI70	29600	237	125
PET0415DY0001G02FE	2	01-07-08	4000K-CRI70	43200	301	143
PET0513DY0001G02FE	2	01-07-08	4000K-CRI70	57400	403	142
PET0393DV0004G02FE	2	04-10-11-12	4000K-CRI80	44900	303	148
PET0485DV0004G02FE	2	04-10-11-12	4000K-CRI80	59500	404	147
PET0390DY0005G02FE	2	05-06	4000K-CRI70	44400	355	125

Petrarca 2.0 version DALI2

CODE	N. MODULES	OPTICS	CCT-CRI	FLUX (lm)	POWER (W)	EFF. (lm/W)
PET0521DY0005G02FE	2	05-06-09	4000K-CRI70	59200	473	125
PET0623DY0001G03FE	3	01-07-08	4000K-CRI70	72300	505	143
PET0770DY0001G03FE	3	01-07-08	4000K-CRI70	92100	654	141
PET0589DY0004G03FE	3	04-05-06-09	4000K-CRI70	73900	585	126
PET0727DY0004G03FE	3	04-05-06-09	4000K-CRI70	88700	703	126
PET0831DY0001G04FE	4	01-07-08	4000K-CRI70	109200	771	142
PET1027DY0001G04FE	4	01-07-08	4000K-CRI70	125000	882	142
PET0785DY0004G04FE	4	04-05-06-09	4000K-CRI70	103400	811	127
PET0970DY0004G04FE	4	04-05-06-09	4000K-CRI70	118300	926	128
PET1246DY0001G06FE	6	01-07-08	4000K-CRI70	144600	999	145
PET1540DY0001G06FE	6	01-07-08	4000K-CRI70	186500	1313	142
PET1178DY0004G06FE	6	04-05-06-09	4000K-CRI70	147800	1159	128
PET1455DY0004G06FE	6	04-05-06-09	4000K-CRI70	177500	1390	128

Configurator

Positions 1, 2, 3	**Family**	P E T	Petrarca
Positions 4, 5, 6, 7	**Flux (*)**	1 2 3 4	123 400 lm
Position 8	**Pover supply program**	F	Fixed con 1-10 V (standard)
		P	Standard night Cycle
		D	DALI 2
		X	DMX
Position 9	**CCT + CRI**	X	3000K - CRI 70
		W	3000K - CRI 80
		Y	4000K - CRI 70
		V	4000K - CRI 80
		Z	5700K - CRI 70
		T	5700K - CRI 80
		N	5700K - CRI 90
Positions 10, 11	**Electrical safety class and voltag**	00	Class I - 220 V ac
		02	Class II - 220 V ac (only for Petrarca up to 2 modules)
		03	Class I - 380 V ac (only for Petrarca 4 and 6 modules)
Positions 12,13	**Optic**	01	Asymmetric Sport
		04	Rotosymmetric 30°
		05	Rotosymmetric 20°
		06	Rotosymmetric 10°
		07	Asymmetric Street
		08	Asymmetric Sport +
		09	Rotosymmetric 8°
		10	Rotosymmetric 50°
		11	Rotosymmetric 90°
		12	Rotosymmetric 110°
Position 14	**Colour**	G	Grey
Positions 15,16	**N. modules**	06	6 modules
Position 17	**Fixing mode/application**	F	Floodlight
Position 18	**Position driver**	E	External, on board
		Y	Pole base IP66 (only for Petrarca 4 and 6 modules)

EXAMPLE: Petrarca 6 modules, grey, 145,500 lm - 4000K CRI 70, optic Roto 30° external driver

COD.	P	E	T	1	4	5	5	D	Y	0	0	0	4	G	0	6	F	E
POS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

The resulting code is: **PET1455DY0004G06FE**

sport case

Circolo Canottieri *Padova*

At the Padova Challenge Open, women's tennis internationals, the collaboration between Arianna SPA and Canottieri di Padova has led to **technological innovation** in the world of sports lighting.

Thanks to Arianna's **modular and configurable technology**, a major result has been achieved. Lighting for tennis courts without areas of shadow and able to comply with the regulations that govern this type of competition. Lighting that guarantees optimal visibility for players and for the public.

The study carried out by the Arianna technicians supported by the Canottieri team allowed the players to determine the **correct depth of field**. A more direct and less dispersive light, which illuminates only where it is needed without waste, resulting in a sensation of **light that is as natural as possible** on the court.

After the **tennis courts, the Padel**: installation that confirms the success of indoor and outdoor tennis courts.

The Padel Arena Canottieri in Padua, which has only recently opened, is illuminated by Arianna's Petrarca floodlights: 9 LED floodlights with 2 modules of 306 W for a **match of maximum intensity and comfort in every area** of the arena.

Technical datasheet !

For the Canottieri tennis courts where the Women's Tennis Internationals are to be held, **500 lux** over the entire field and high uniformity **were required**.
To meet the requirements, 2 Petrarca floodlights were installed for each pole.
The uniformity thus obtained exceeds 0.75.

The Petrarca installed were designed to replace 1000 W sodium floodlights, thus guaranteeing an **energy saving of 60%** for the structure.

sport case

Circolo della Stampa

Torino

The Circolo della Stampa Sporting is one of the most complete sports, play, recreational and cultural facilities in Italy. Its undisputed beauty and attractiveness reside in the variety and **quality of the services and facilities**, in the location in which it is immersed but also in its history that defines it as a historic monument, fully qualifying it as an Architectural Heritage asset.

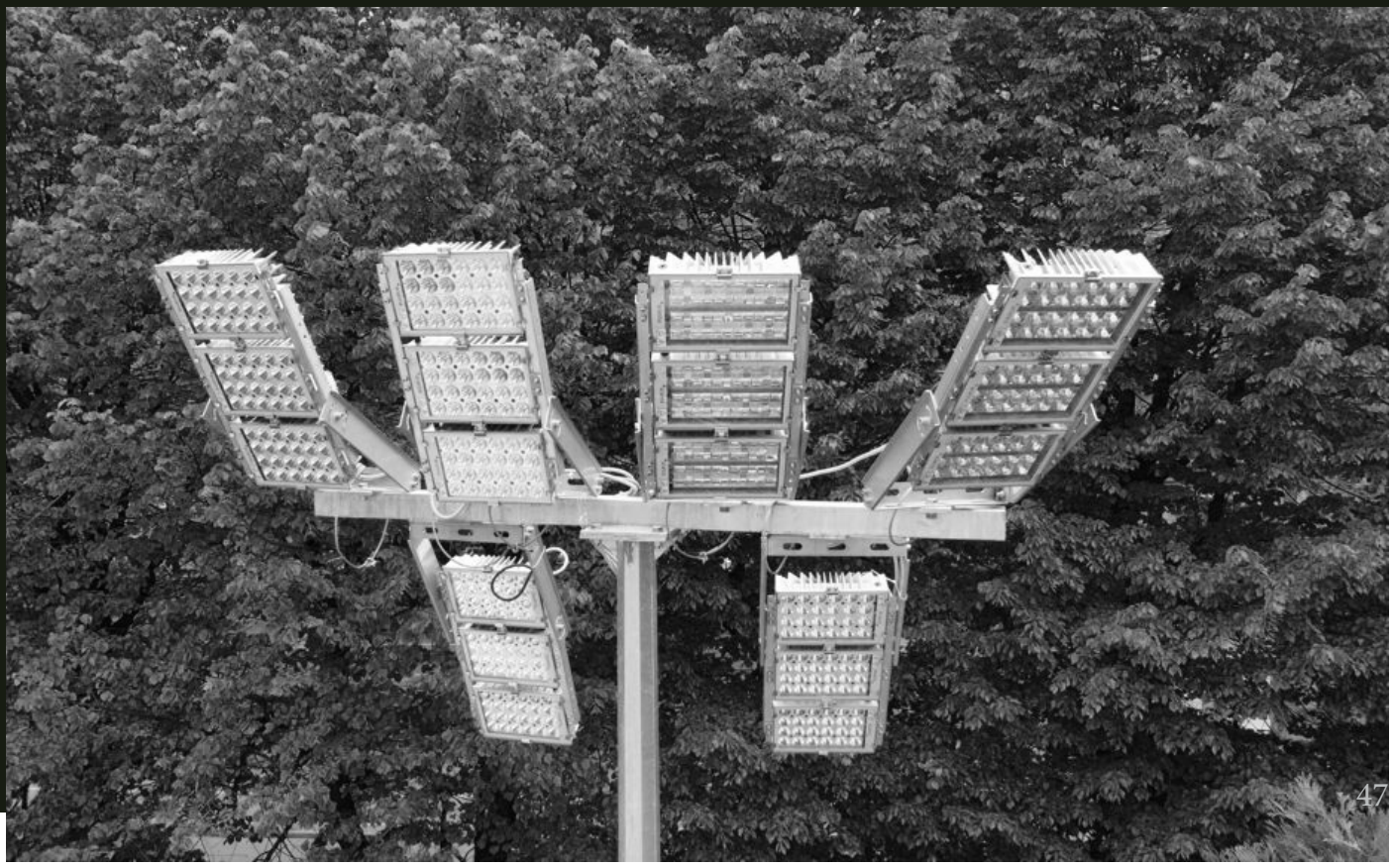
The ATP Nitto Finals took place here. For this reason, the club has been completely modernised, following a **restoration project** that aims to enhance the history of the facilities that date back to the early 1900s.

The **new lighting of the Campo Stadio**, where cultural, artistic, and sporting events are held was created by Arianna, with a project designed to make the system **more modern and efficient** while preserving the vision of its genesis.

Technical datasheet

The court was not equipped with lighting towers and was only used during the day. Arianna designed **excellent lighting for flicker-free television shooting** with horizontal illuminance of 1000 lux and vertical illuminance of 700 lux. Four 15 m lighting towers were installed around the structure seeking to **respect the harmony of the location as much as possible**.

For each pole, 6 3-module Petrarca luminaires with 600 W concentrating and roto-symmetrical optics were installed. Despite the particular nature of the installation and the stringent requirements, it was possible to achieve **very high levels of illumination** (1000 lux horizontal and 700 lux vertical) and uniformity greater than 0.50.



sport case

Netball Tauranga
New Zealand

Arianna's sports lighting fixtures were chosen for the Netball court in Tauranga in New Zealand. Petrarca, in the sport version, made it possible to create **uniform and glare-free lighting**.

Advanced lighting technologies is Arianna's New Zealand partner, who decided to share the new sports lighting project. A project conceived from **research** and **development**, from a unique patented system and the ability to offer maximum energy savings.

The measurements taken after installation evaluated the quantity and quality of light, colour rendering, **uniformity**, and **glare control**. The project shared between Arianna's technicians and the New Zealand designers led to an exceptional result that far exceeds expectations.

The 10 Netball courts of the Tauranga sports facility have 14.7 m high poles. The project involved the installation of 2 Petrarca sport 6 modules per pole at 154,000 lm and 4000K. **Arianna has designed a single product for sports lighting**, one solution for all the different lighting requirements.

Technical datasheet

Petrarca is the efficient **modular floodlight**, with 5 different configurations and luminous fluxes ranging from 10,000 to 181,000 lm, to ensure the **correct lighting** for every space and every situation.

Petrarca's optics are designed to ensure **maximum performance and reliability**: silver-coated aluminium reflectors with maximum reflectivity (97%). By applying the total reflection patent to the reflectors, the floodlight is able to guarantee a **very high, glare-free efficiency** (module efficiency up to 170 lm/W).

sport case

Rugby Memo Geremia

Padova

Thanks to Arianna's **modular and configurable technology**, a satisfying result was achieved. Lighting for training pitches without areas of shadow and with zero glare. Lighting that **guarantees optimal visibility** for players at every point on the pitch.

The Arianna designers studied an optical combination capable of providing more direct and less dispersive lighting that illuminates only where it is needed, **without waste and successfully giving a sense of natural lighting** on the pitch, resulting in correct perception of the depth of the playing area.

Sports halls, swimming pools, gyms, and tensile structures, in the winter season, are **the most popular environments for young and adult athletes**. We at Arianna take care of them, to let sport thrive, in maximum comfort and to make the experience unique. The ethical commitment of the Paduan Rugby facilities continues, also in the **gyms for a totally GREEN facility**.

Thanks to Snell's extremely high-performance optics, **high illuminance was obtained on the playing field** not only by reducing the number of light points (from 35 to 21) but also by significantly reducing the unitary power of the individual floodlights. This results in a total saving of 7kW installed which is equivalent to 75% less consumption.

Technical datasheet !

Lighting class III was required for the training fields, and with the new installation an average of 100 lux was obtained over the entire **field and a uniformity greater than 0.50**. Despite the difficulty of lighting field 3 due to the arrangement of the lighting towers on a single side, with the Arianna floodlights, thanks to the effectiveness of the optics, with which it is possible to direct all the flow only into the necessary area without waste, the regulatory requirements for illuminance (≥75lux), uniformity (≥0.50) and glare (GR≤ 50) were amply respected.

The Petrarca installed were designed to replace 2000 W sodium floodlights, thus **guaranteeing 60% energy savings for the facility.**

sport case

Football and eight-a-side pitch

Luino

We are in Luino in the province of Varese at a sports facility that includes **two football pitches**, one for 11 players per side and a smaller one for 8 players per side.

The lighting systems included 24 2000 W projectors on 4 30 m lighting towers on the football pitch and 18 400 W loodlights on the 6 poles surrounding the 8-a-side pitch. Giving a **total required power of 60 kW.**

Technical datasheet

We at Arianna brought the system to a consumption of 13.8 kW with **75% energy savings**. 12 Petrarca 4-module lights with 807 W asymmetrical optics were installed on the football pitch and 10 Petrarca 2-module lights with 412 W asymmetrical optics on the 8-a-side pitch.

In both pitches we obtained horizontal illuminance > 100 lux, as required, and uniformity ranging from 0.60 to 0.65. In addition to the energy savings, the structure will benefit from **savings in terms of maintenance** because the Arianna floodlights are made with selected **materials and subjected to stringent resistance tests**.

Lighting management

Lighting with maximum savings

The choice of LED lighting on sports fields **reduces consumption by approximately 60%**, but Arianna wants to give its customers the opportunity to maximise savings, thanks to control systems integrated into the luminaire and managed remotely.

Control of the luminous flux

The ability to use **maximum power** only when necessary, during competitions, or specific training, and to reduce it when all the available flow is not essential.
It is possible to **control the luminous flux of the individual floodlight** to contain expense and to return the investment as quickly as possible, but also to illuminate only where it is needed and to make an event spectacular.

Pre-set scenarios

With the controlled management of the floodlights, it is possible to create pre-set scenarios for the various functions of the structure, training, competition, partial use of the field, relaxation phase, shows ... and change them quickly through a remote app or the management panel. **The light experience can be lived to the fullest for athletes**, spectators and for those who control it.

Maintaining the system

The remote-control of the individual floodlight means being able to have an overview of the facility that is always up-to-date, to **guarantee the brightness** required by the national directives in each competition. Significant **reduction of maintenance costs**.

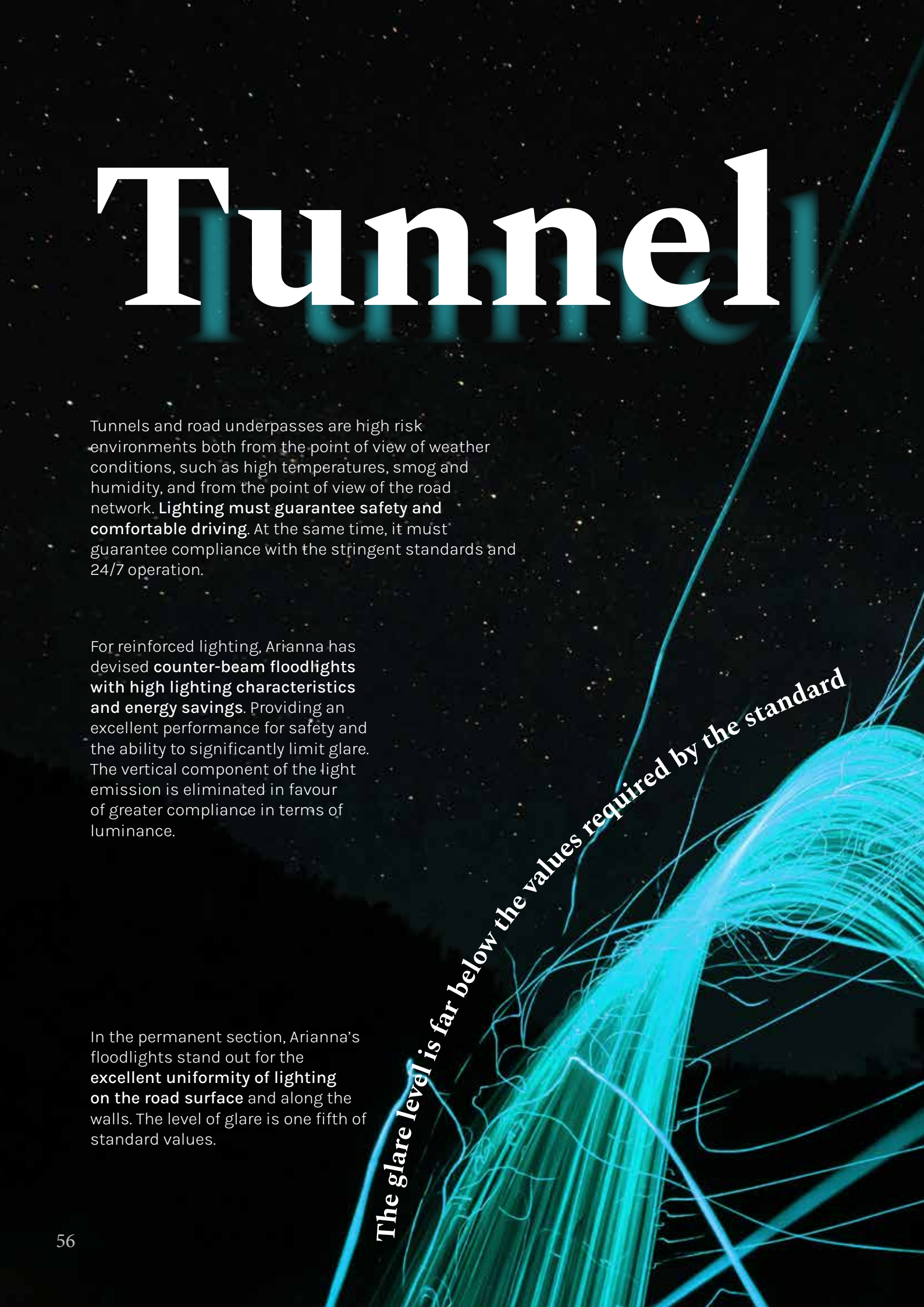
Tunnel

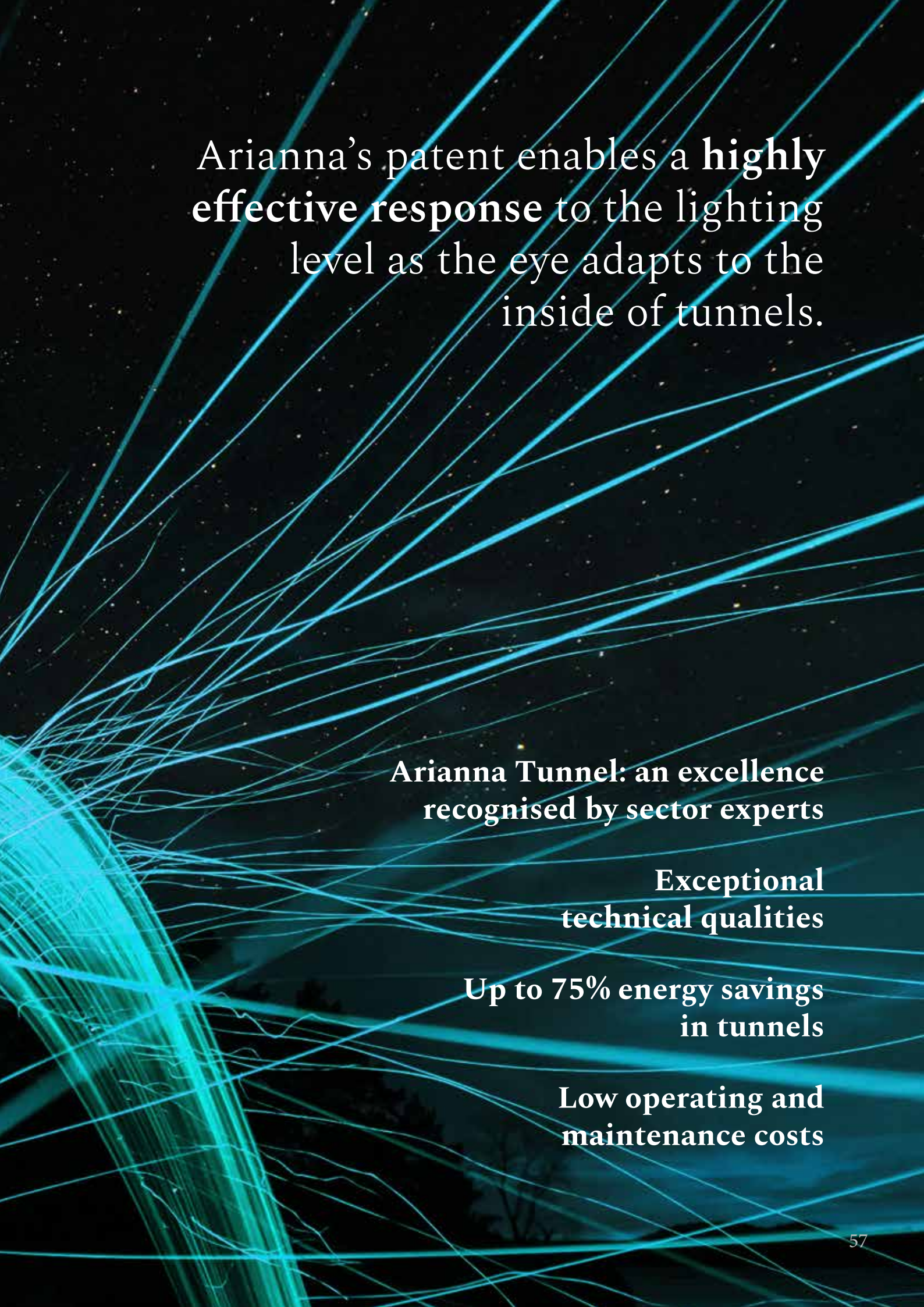
Tunnels and road underpasses are high risk environments both from the point of view of weather conditions, such as high temperatures, smog and humidity, and from the point of view of the road network. **Lighting must guarantee safety and comfortable driving**. At the same time, it must guarantee compliance with the stringent standards and 24/7 operation.

For reinforced lighting, Arianna has devised **counter-beam floodlights with high lighting characteristics and energy savings**. Providing an excellent performance for safety and the ability to significantly limit glare. The vertical component of the light emission is eliminated in favour of greater compliance in terms of luminance.

In the permanent section, Arianna's floodlights stand out for the **excellent uniformity of lighting on the road surface** and along the walls. The level of glare is one fifth of standard values.

The glare level is far below the values required by the standard





Arianna's patent enables a **highly effective response** to the lighting level as the eye adapts to the inside of tunnels.

Arianna Tunnel: an excellence recognised by sector experts

Exceptional technical qualities

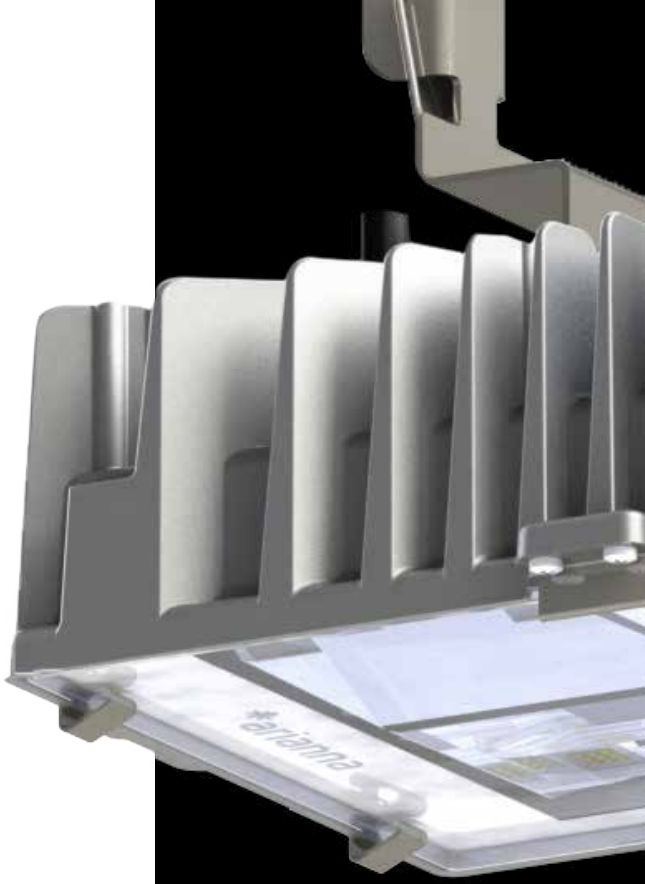
Up to 75% energy savings in tunnels

Low operating and maintenance costs

tunnel product

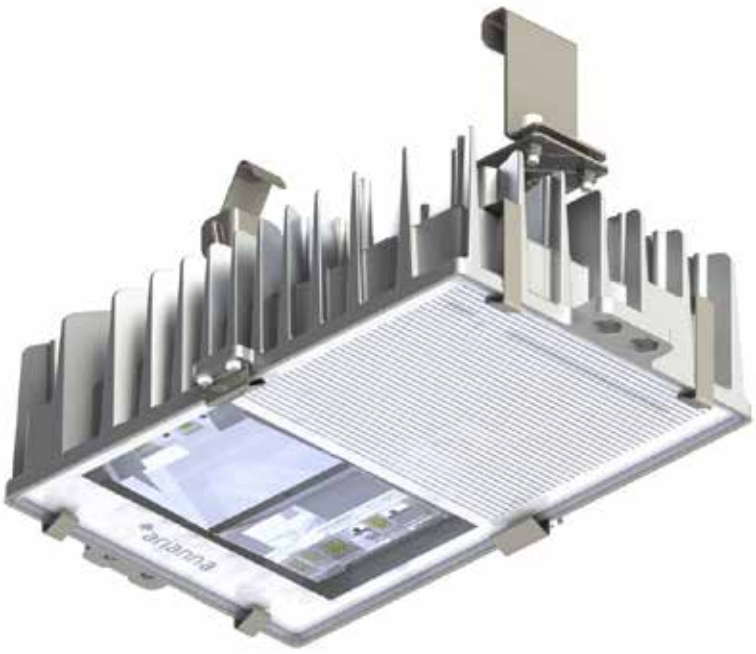
Petrarca tunnel

The small, modular spotlight for tunnels



Petrarca lighting solutions **maximise energy savings** thanks to the total reflection system. In the Tunnel version, Petrarca guarantees the correct lighting in different types of motorway and road tunnels.

The **modularity of the Petrarca tunnel system** makes it possible to comply with all design requirements, both at the entrance and along the entire length of the tunnel.



Small and modular to **guarantee easy installation** and maintenance with a design engineered to optimise heat dissipation thanks to the finned radiator.

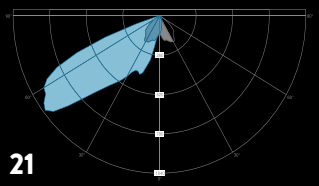
Technical features:

- Flux from 2,500 to 56,000 lm
- Surge 8/6 kV
- Class II (I optional)

Total reflection optical system to **maximise energy savings**, without dazzle in all of the tunnel's sections.

Symmetrical reflection optics ensure, in the permanent section, **visual comfort** along the entire length of the tunnel; in the entrance zone, the counter-beam optics, with total reflection, guarantee **glare control** and avoid dispersion, ensuring a **low TCO**.

Available Optics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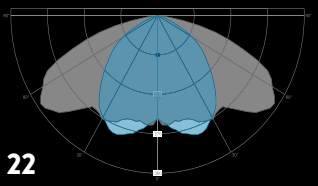
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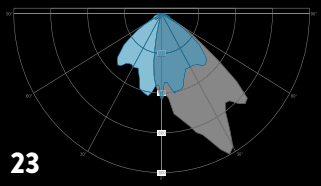
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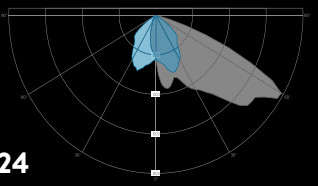
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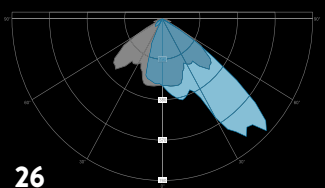
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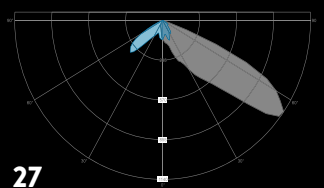
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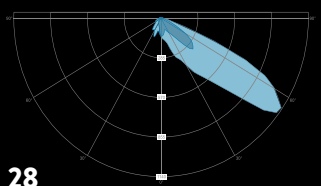
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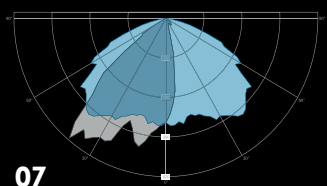

07

Technical specifications

*Standard version with asymmetrical optics **21 - 24 - 27 - 28*

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
PET0027RR00**G01yx	2588	19	137
PET0033RR00**G01yx	3595	25	143
PET0045RR00**G01yx	5063	36	140
PET0067RR00**G02yx	7107	48	147
PET0091RR00**G02yx	9395	66	142
PET0136RR00**G03yx	14664	105	140
PET0182RR00**G04yx	19785	139	143
PET0227RR00**G05yx	23518	165	143
PET0272RR00**G06yx	28054	196	143
PET0318RR00**G07yx	33122	234	141
PET0363RR00**G08yx	37629	267	141
PET0409RR00**G09yx	42080	299	141
PET0454RR00**G10yx	46476	325	143
PET0510RR00**G11yx	50816	356	143
PET0557RR00**G12yx	55733	388	143

Standard version with symmetrical optic 22

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
PET0027RR0022G02yx	2651	19	140
PET0033RR0022G02yx	3622	25	147
PET0045RR0022G02yx	5091	36	140
PET0067RR0022G02yx	7087	48	149
PET0091RR0022G02yx	9362	67	140
PET0136RR0022G02yx	13451	96	140

*Linear version with optics ** 23 - 26 - 07*

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
PET0027RR00**G01yx	2588	19	137
PET0033RR00**G01yx	3595	25	143
PET0045RR00**G01yx	5063	36	140
PET0067RR00**G02yx	7107	48	147
PET0091RR00**G02yx	9395	66	142
PET0136RR00**G03yx	14664	105	140
PET0182RR00**G04yx	19785	139	143
PET0227RR00**G05yx	23518	165	143
PET0272RR00**G06yx	28054	196	143
PET0318RR00**G07yx	33122	234	141
PET0363RR00**G08yx	37629	267	141
PET0409RR00**G09yx	42080	299	141
PET0454RR00**G10yx	46476	325	143
PET0510RR00**G11yx	50816	356	143
PET0557RR00**G12yx	55733	388	143

Configurator

Positions 1, 2, 3	**Family**	PET	Petrarca
Positions 4, 5, 6, 7	**Flux**	0557	55700 lm
		F	Fisso
Position 8	**Power supply program**	D	DALI
		T	TLC Conveyed frequency
		R	TLC Radio
Position 9	**CCT + CRI**	R	4000K – CRI 70
		O	4000K – CRI 80
		S	5700K – CRI 70
Positions 10, 11, 12, 13	**Optic**	0021	Counterbeam Optic
		0022	Symmetric Optic
		0023	Asymmetric Optic
		0024	Counterbeam Optic
		0026	Asymmetric Optic
		0027	Counterbeam Optic
		0028	Counterbeam Optic
		0007	Asymmetric Optic
Position 14	**Colour**	G	Grey
Positions 15, 16	**N. Optic**	1 - 12	1 ÷ 12 Optic
Position 17	**Installation**	T	Ceiling mounting
		L	Wall mounting
Position 18	**Bracket dimension**		

EXAMPLE: Linear Petrarca Tunnel 4 optics, grey, 18,200 lm – 4000K CRI 70, optic 26 e TLC PLC																	
COD.	P	E	T	0	1	8	2	T	R	0	0	2	6	G	0	4	L
POS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

The resulting code is: **PET0182TR0026G04L**

tunnel product

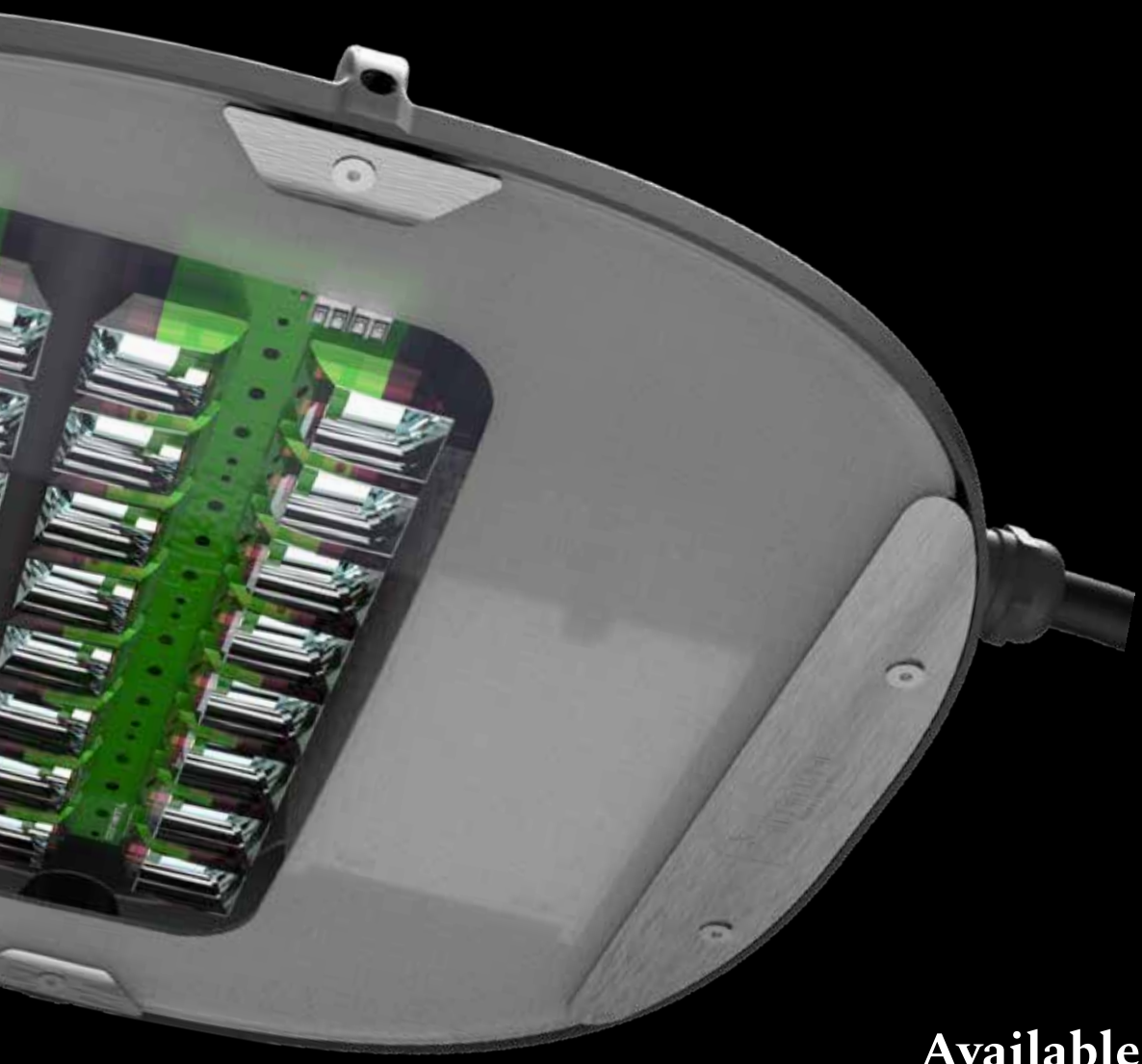
Giotto

The **compact** floodlight for the permanent section of all tunnels

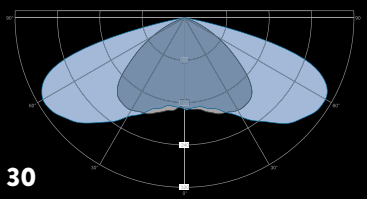
Giotto was created to respond to the **need to find a compact, lightweight and easy to install luminaire** that encompasses all the technical **excellence** of Arianna tunnel products.

A **floodlight that can be adapted** to all pre-existing structures in the tunnel for uniform and comfortable lighting. Years of studies and experience in the field are brought together in a small, low-cost floodlight, weighing less than 3 kg at very high efficiency levels, of up to 145 lm/W.

Giotto in its innovative form guarantees **extreme simplicity of installation** and excellent thermal dissipation. The materials chosen ensure long product life and the containment of maintenance costs.



Available Optics



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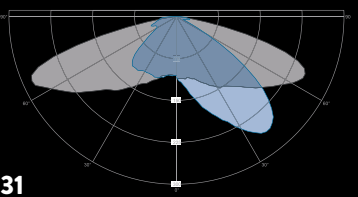

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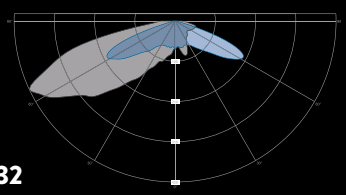


32

Technical features:

- Flux from 2,500 to 12,000 lm
- Surge 8/6 kV
- Class II

Giotto, like all Arianna products, has optics capable of **maximising the efficiency of the light source** and directing the flow only where it is needed, minimising waste in off-road use.

Technical specifications

Optics
***30, 31, 32*

CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
GIO0025ZR00**G02yx	2580	18	144
GIO0036ZR00**G04yx	3633	26	139
GIO0050ZR00**G04yx	5050	37	136
GIO0063ZR00**G04yx	6317	48	131
GIO0081ZR00**G08yx	8126	60	135
GIO0097ZR00**G08yx	9734	70	139
GIO0118ZR00**G08yx	11876	90	131

Configurator

Positions 1, 2, 3	Family	GIO	Giotto
Positions 4, 5, 6, 7	Flux	0118	11800 lm
Position 8	Power supply program	Z	Zhaga
Position 9	CCT + CRI	R	4000K – CRI 70
		O	4000K – CRI 80
		S	5700K – CRI 70
Positions 10, 11, 12, 13	Optic	0030	Symmetric Optic
		0031	Asymmetric Optic
		0032	Asymmetric Optic
Position 14	Colour	G	Grey
Positions 15, 16	N. Optic	02	2 ÷ 8 Optic
Position 17	Fixing mode/Application	T	Ceiling mounting
		L	Wall mounting
Position 18	Bracket dimension		

EXAMPLE: Tunnel Giotto 8 optic, grey, 11800 lm – 4000K CRI 70, optic 30 and TLC PLC

COD.	G	I	O	0	1	1	8	Z	R	0	0	3	0	G	0	8	L
POS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

The resulting code is: **GIO0118ZR0030G08L**

tunnel product

Minox

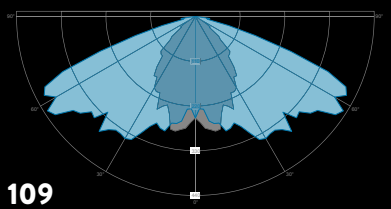
Minox the FULL INOX modular floodlight for tunnels

To make the new stainless-steel floodlight for tunnels unique, the research and development department devised a **completely seamless mechanism** which, by not using other materials in the external structure, **maximises resistance** to aggressive environments.

Minox is the family of stainless-steel floodlights with LED technology for tough and corrosive environments like tunnels.
A **unique technological solution** to illuminate all sections of the tunnel, from the first to the last metre.

Available Optics

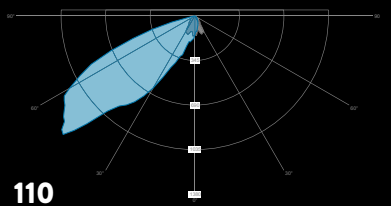
Minox guarantees the right lighting in different types of motorway and road tunnels. The modular nature of the system means it can comply with all the project requirements both at the entrance and along the entire length of the tunnel.



109

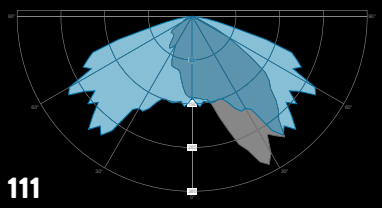
Technical features:

- Flux from 3,500 to 52,000 lm
- Surge 10/6 kV
- Class II (I opzionale)



110

The efficiency is amplified by a series of technological choices and **structural innovations that increase savings**, resulting in increased **energy performance**. With **98% reflective optics**; extra clear glass to maximise light transmittance and corrosion-resistant **high-power LEDs**.



111

Technical specifications

*** Optics 109-110-111*

DESCRIPTION	COD.	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
MINOX MINI	MIX00B0RR01***G02Tx	3629	25	143
	MIX00C0RR01***G02Tx	5179	38	137
	MIX00D0RR01***G02Tx	6667	49	135
MINOX MAXI	MIX00E0RR01***G04Tx	10358	74	139
	MIX00F0RR01***G04Tx	13171	96	137
MINOX MAXI 2 MODULES	MIX00G0RR01***G06Tx	19771	147	135
	MIX00H0RR01***G08Tx	26040	193	135
MINOX MAXI 3 MODULES	MIX00I0RR01***G10Tx	32953	244	135
	MIX00J0RR01***G12Tx	38753	289	134
MINOX MAXI 4 MODULES	MIX00K0RR01***G14Tx	46134	341	135
	MIX00L0RR01***G16Tx	52081	385	135

Configurator

Positions 1, 2, 3	Family	M I X	Minox
Positions 4, 5, 6, 7	Flux	00B0	3600 lm
		00C0	5200 lm
		00D0	6700 lm
		00E0	10400 lm
		00F0	13200 lm
		00G0	19800 lm
		00H0	26000 lm
		00I0	33000 lm
		00J0	38800 lm
		00K0	46100 lm
		00L0	52100 lm
Position 8	Power supply program	F	Fisso
		D	DALI
		T	TLC conveyed frequency
		R	TLC Radio
Position 9	CCT + CRI	R	4000K – CRI 70
		O	4000K – CRI 80
		S	5700K – CRI 70
Positions 10, 11, 12, 13	Optic	0109	Symmetric Optic
		0110	Counterbeam Optic
		0111	Asymmetric Optic
Position 14	Colour	G	Grey
Positions 15, 16	N. Optic	1 - 16	1 ÷ 16 Optic
Position 17	Fixing mode/Application	T	Tunnel

EXAMPLE: Minox 2 optic, grey, 3629 lm– 4000K CRI 70, optic 109 and TLC PLC

COD.	M	I	X	0	0	B	0	T	R	0	1	0	9	G	0	2	T
POS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

The resulting code is: **MIX00B0TR0109G02T**

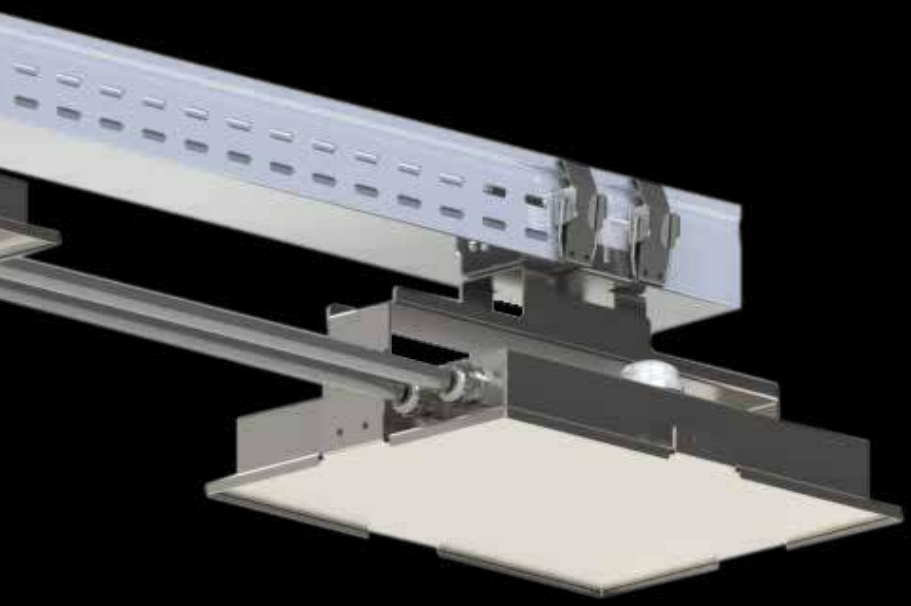
tunnel product

Steelox

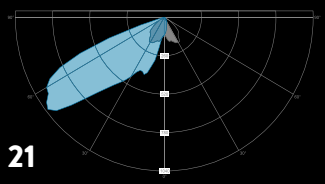
Steelox **FULL INOX** modular floodlight for harsh environments with **maximum resistance**

Steelox is the family of full stainless-steel floodlights with **LED technology designed to meet the complex technical requirements** of the harsh and corrosive environments of tunnels.

Arianna has devised a **unique technological solution to illuminate all sections of the tunnel**, from the first to the last metre. Steelox is the family of modular floodlights capable of adapting to different types of tunnels, roads, and motorways, successfully meeting all the design requirements.



Available Optics



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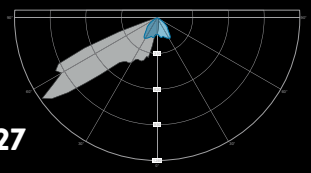

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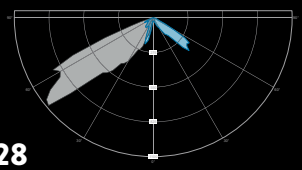

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Technical features:

- Flux from 10,000 to 80,000 lm
- Surge 8/6 kV
- Class II

The careful mechanical study and laboratory tests confirm that it is the **ideal product for the entrance area of tunnels**, where high powers are required to reach fluxes required by regulations.

Technical specifications

Optics
***21, 27, 28*

DESCRIPTION	CODE	FLUX (lm)	POWER (W)	EFFICIENCY (lm/W)
STEELOX 65	STE0065ZS00**G02T	10525	65	161
STEELOX 100	STE0150ZS00**G04T	20437	138	148
STEELOX 200	STE0200ZS00**G04T	27869	194	144
STEELOX 400	STE0400ZS00**G08T	56393	390	145
STEELOX 600	STE0600ZS00**G12T	82714	581	142

tunnel case

Costa Incoronata Tunnel

The Costa Incoronata Tunnel is part of the **#GreenLight** project launched by ANAS in 2016. Arianna. In 2018, thanks to the collaboration with the best technological installers in Italy, Arianna successfully won 4 different tenders, for an expected total of approximately 50,000 tunnel floodlights in the three-year period 2018-2020.

The Costa Incoronata tunnel is located on the A2 motorway, **one of the most important roads in Southern Italy** which is part of the E45 European Road. It is made up of two unidirectional tunnel structures consisting of two driving lanes and one emergency lane.

The **Anas #GreenLight** Project (three-year Framework Agreement) provides for the **replacement of lighting fixtures with latest generation LEDs**, aimed both at reducing consumption, but also at raising safety levels within tunnels thanks to better visual comfort on the road surface.

The Costa Incoronata Gallery was the first of Anas “#GreenLight” to be switched on and become operational. An excellent result, synonymous with **precision and dynamism**.

Technical datasheet !

The installation of Phileo tunnel floodlights, in the entrance area, and Snell tunnel, for the lighting of the entire tunnel in the permanent system (active 24 hours a day), led to **energy savings greater than 65%** compared to the old lighting system.

All the floodlights installed for reinforcement are designed with **patented total reflection optics** that minimise glare thereby ensuring **greater safety for motorists**.

tunnel case

Kofl Tunnel

The Kofl Gallery was conceived from a project that seeks to reduce the danger of the stretch of road in the municipality of San Pancrazio on the provincial road SP 9, the only road in Val d'Ultimo. **Safety** has always been the main focus of the entire project and the lighting was expected to be in line with this concept.

Bouygues E&S InTec Italia, which won the redevelopment tender, chose **Arianna SPA as its lighting partner** for its well-known attention to design and the modularity of the products.

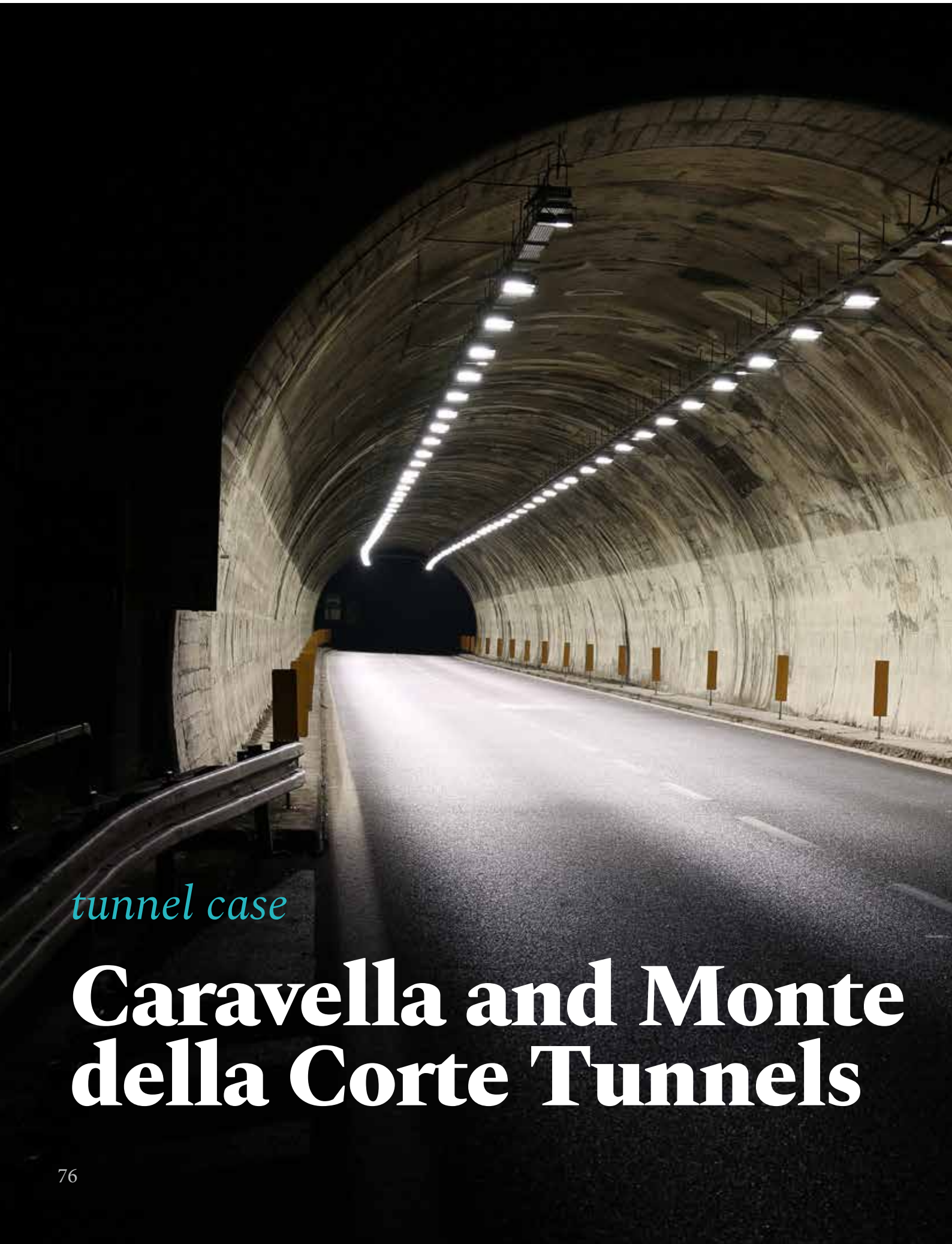
Phileo tunnel is the product chosen for the lighting of the entire Kolf tunnel thanks to its modularity and the constitutive features that make it a fundamental product where the focus is on road safety.

The entrance stretch, during the day, requires very high luminance levels, which is why it **is essential to contain glare** and Phileo's patented optics ensure levels that are well below the required limit. In the permanent area, for the entire length of the tunnel, by installing products with **lower power and low consumption**, an exceptional uniformity is guaranteed, which allows perfect visibility for anyone travelling along the stretch of state road in the tunnel.

Technology and design

A truly exceptional tunnel that combines cutting-edge technology and high design. Arianna has managed with its **lighting to guarantee total uniformity** without areas of shadow and with energy savings superior to all competitors.

The beauty of the gallery's architecture was enhanced by the **careful studies of Arianna's design team**. This type of work approach underlines the meticulous effort put into every single calculation. The tunnel is a challenging project where the Arianna excellence is shown off.



tunnel case

Caravella and Monte della Corte Tunnels

The Caravella and Monte della Corte Tunnels form part of the Autostrada dei Fiori (A10) in the province of Imperia. They are both motorway tunnels involving one-way traffic. The longest, Monte della Corte, measures 180 m while the shortest, Caravella, 150 m. Both tunnels **were illuminated with Petrarca tunnel in different versions**. For the permanent area, along the entire length of the tunnel, we used Petrarca 1, a module with low fluxes, while for the reinforcement area, where high power floodlights are required to reach very high fluxes, Petrarca tunnel with 2 or 3 modules was used.

The new lighting of Petrarca tunnel guarantees **exceptional energy savings**, as well as **enhanced lighting** along the entire length, successfully eliminating any areas of shadow. Arianna combines maximum energy savings with maximum **glare reduction** for a safer and more comfortable tunnel for the customer.

Technical datasheet

In the two tunnels 378 pcs of Petrarca tunnels were installed in the various configurations: 1, 2, 3 modules with counter-flow optics, for the luminaires used for reinforcement, and symmetrical types for those of the permanent lighting.

In the Caravella Tunnel, the **power was reduced by 40%** and the number of luminaires by 30% compared to the first LED project presented in 2016.

In the Monte della Corte Tunnel, the same excellent result was obtained compared to the 2016 LED project: A **40% reduction in power** and a reduction in the number of luminaires.

All the data mentioned were confirmed after the **post installation technical lighting** inspections were performed by professional engineers specialising in tunnel lighting.

tunnel case

Capo d'Orlando Tunnel

Arianna returns to Sicily, in the province of Messina to illuminate the Capo d'Orlando tunnel located along the A20 Messina-Palermo motorway.

The tunnel redevelopment project consists of a permanent and reinforcing **LED lighting circuit**. The first guarantees a high uniformity of illumination and a very low level of glare. The reinforcement lighting, on the other hand, thanks to the innovative characteristics of the Arianna lighting bodies, combines **high performance with significant savings**.

The objective of the municipality of Capo d'Orlando, through the redevelopment of the tunnels that run through the area, is to contain expense by means of **high energy savings**, but above all to make the **road much safer** and more comfortable not only the local population, but also for the many tourists who travel through it every year.

Technical datasheet

The Capo d'Orlando tunnel is 1980 metres long and divided into two one-way lanes.

For the permanent lighting, **131 Snell 90 W LED luminaires** were installed, the ideal product to illuminate 24 hours a day, guaranteeing **uniform lighting** without disturbing the visibility of drivers.

For the reinforcement lighting, 46 Snell and 92 Teseo were installed, both with different powers ranging from 305 to 90 W, thus guaranteeing a **luminance value of 140 cd/m2**.

Patented universal bracket

The Arianna tunnel floodlights are supplied with **Arianna's patented universal bracket**, a solution that solves the static shape of the brackets currently available on the market.

It is a bracket for universal cable trays with variable geometry, consisting of **three moving parts**: two sliding side plates that give lateral stability and a central plate with variable height that is able to manage different heights of cable tray.

It eliminates the reading times, the expense and the errors due to the partitioning of the traffic necessary for mechanical surveys

It allows anyone who manages multiple tunnels to have a **single supply of brackets for maintenance**, which will be usable on different cable trays

The **variable geometry of the bracket** makes it adaptable to variations in the geometric parameters of the cable tray, not detectable by **precise measuring** of the dimensions

It eliminates the planning and production times of custom-made brackets.

.note

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arianna

light looking forward

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