

# TORREDO 2.0

disano   
illuminazione  
www.disano.it



M A D E I N I T A L Y

**Torpedo 2.0** is a next-generation urban luminaire, an evolution of a Disano top seller, now upgraded with state-of-the-art LED technology. Thanks to its high energy efficiency and extended lifespan, Torpedo is perfectly suited for any urban environment.

Its design has been studied to maximise light efficiency while seamlessly blending into the surrounding urban landscape. Featuring a versatile LED configuration, **Torpedo 2.0** is available in multiple versions, ensuring optimal light distribution tailored to the specific needs of each setting.

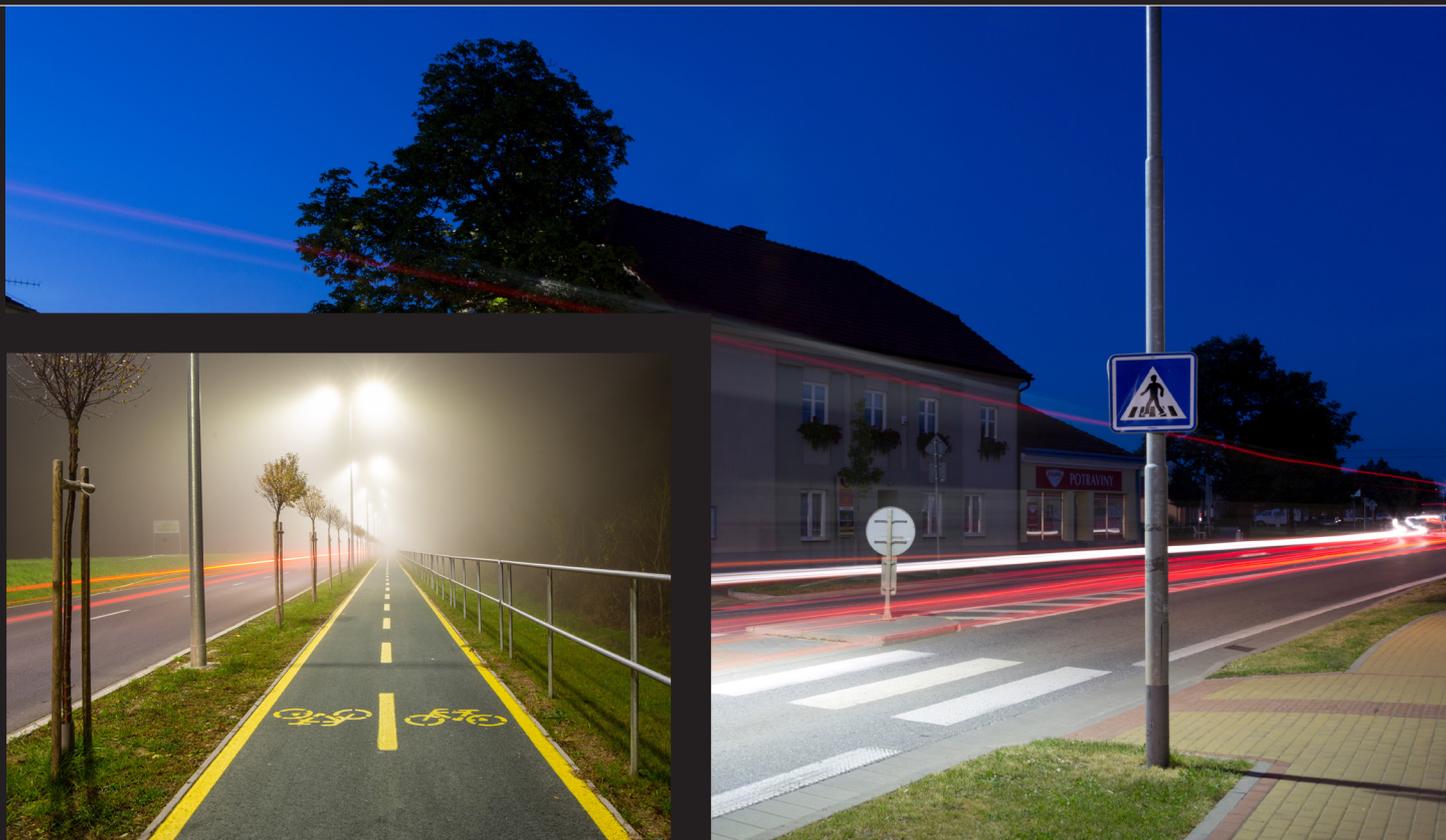


In summary, **Torpedo 2.0** offers an advanced urban lighting solution that combines cutting-edge technology, design and exceptional adaptability.

It is the ideal choice for those seeking durable, energy-efficient lighting that can meet the demands of diverse urban environments.







Research has shown that different types of lighting can significantly impact nocturnal insects, birds and other creatures that play a vital role in local ecosystems. Environmental organisations are increasingly calling for this aspect to be properly considered in the design of new lighting systems.

*Modern LEDs, with a reduced blue light component, provide an opportunity to create less disruptive lighting in streets or parking areas near green spaces, while offering better protection for local wildlife.*

**Torpedo 2.0** is available as **standard** with a **3000K** and **4000K** colour temperature. It is ideal for urban spaces such as public parks, squares, and historic town centres that require an illumination that enhances architectural features while ensuring pedestrian safety, visual comfort, and minimising light pollution.



**3000K**  
**4000K** **3000K - 4000K:** lamps with white light, instead, is the best choice for lighting up urban areas, streets, residential centres and generally all areas where this type of light guarantees greater safety and visual comfort.

**Torpedo 2.0** is available as **upon request** with a **2200K** colour temperature to reproduce a cosy ambient light associated with sunset. In this way, the artificial light becomes a less invasive element in the environment, **respecting the needs of the surrounding flora and fauna.**



**2200K** **2200K:** warm light reduces the risks of excessive exposure to blue light emitted by LED sources and provides a much softer glow in residential areas and, especially, in historic town centres. The latter are particularly sensitive to excessively cold colour temperatures, which diminish the warm tones of ancient walls, historic buildings, and ruins, so cherished by both locals and tourists. Cold lighting distorts the appearance of the architecture, creating a harsh contrast between bright white and totally dark areas. Instead of enhancing the true character of historic centres, cold lighting makes them look dull and lifeless.



You can make your lighting system **SMART** by integrating sensors into the fixture so that it can detect the movement of people within a given detection area and automatically adjust light intensity according to previously established light levels and delay times.

You will also achieve high **energy savings** without affecting the safety and visual comfort of pedestrians.

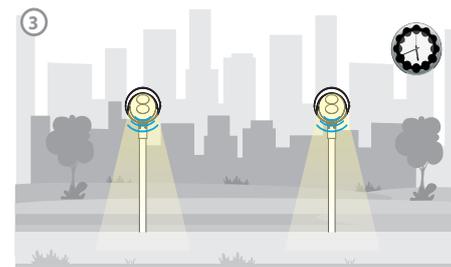
The lighting fixtures **complete with motion sensors** are a functional lighting solution for public spaces. The ability to control the light flux without people moving in a space will let you **optimize operating costs**, while achieving notable **economic savings**. This lighting solution is best suited for public or private streets, cycle lanes, private roads, parks and, in general, for any installation where smart lighting control is required.

There are many ways to adjust lighting:

- Luminous flux **setting**
- **CLO** (Constant Light Output)
- **1-10V** dimming
- **Power line carrier** remote control
- **Nema** or **Zhaga sockets** integrated into the product

And last but not least, the **Virtual Midnight** feature, offering custom solutions for guaranteed energy savings.

Choose the ideal system that ensures  
**eco-friendly energy consumption!**



**EXAMPLE OF OPERATION:**

a lighting fixture equipped with a radar-type motion sensor may be affected by wind. Therefore, for particularly windy areas, PIR presence sensors are available upon request. The lighting fixtures with **sub-code -1219** complete with motion sensors will adjust the light flux in the presence of moving people by varying the brightness value according to pre-determined levels based on certain times:

- 1) when there is no motion, the fixtures will keep a certain level of light intensity for a specific period of time
- 2) when motion is detected in the monitoring area, the luminous flux will dim to 100% of light level
- 3) if no motion is detected after a certain period of time, the sensor will reset the light level to the pre-set value

**Motion sensor STAND-ALONE**

**Torpedo 2.0 with sub-code -1219:**

lighting fixture complete with stand-alone motion sensor with 0/10V control.

**TECHNICAL SPECIFICATIONS**

Frequency	5.8GHz±75MHz
Stand-by power	≤1W
Setting	telecomando
Hold time*	s: 5 - 30 - min: 1 - 3 - 5 - 10 - 20 - 30
Ambient light*	lux: 2 - 10 - 30 - 50 - OFF
Stand-by time*	s: 0 - 10 - 30 - min: 1 - 5 - 10 - 30 + ∞
Stand-by dimming level*	20% - 30% - 50%
Detection area	50%-75% - 100%
Detection angle	30° - 150°
Technology	Microwave

\* adjustable



Remote control cod. **81418618** (to be purchased separately) that allows changing the parameters even after installation is complete and without the need to directly access the fixture.



Sensor integrated inside the fixture

**The fixtures is supplied as standard with the following parameters**

Detection area	100%
Hold time	5s
Ambient light	OFF
Stand-by time	0s
Stand-by dimming level	10%

**NOTE:** when placing your order, it is possible upon request a customized configuration that you need to set.

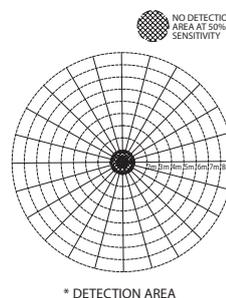
**Detection area:** the sensor will turn the lights on when it detects motion in this area; with a 100% detection area the sensitivity level is high.

**Hold time:** the period of time during which lights stay on at full brightness after a person or object has left the detection area.

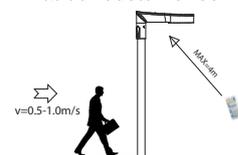
**Ambient light:** when the level of light inside a room is below a pre-determined threshold, the sensor will trigger the lights on; when set to 'disable', the sensor will operate whenever it detects movement regardless of the amount of light in the room.

**Stand-by time:** refers to the time the sensor keeps the lights at a dim level after the hold time.

**Stand-by dimming level:** is the lights' dimming level during the stand-by time.



\* specifications for each detection area (varies depending on the available versions) can be requested at our customer service.



TYPICAL DETECTION AREA AT INSTALLATION HEIGHT 4-6m



## PROG (CLD PROG) available functions

### LIGHTING POINT MANAGEMENT OPTIONS ON REQUEST

possibility to choose different lighting point management systems according to the system's needs:

<b>Luminous flux</b> setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
<b>CLO</b> (Constant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
<b>1-10V dimming</b> ordered with <b>sub-code -12</b>	Adjustment range from 10%-100% with 1-10V
<b>PLC remote control</b> ordered with <b>sub-code -0078</b>	Point-to-point and system management and diagnosis system

### Luminaire designed for installation on Nema or Zhaga socket:

to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT.

Today the market offers two solutions: **NEMA** and **ZHAGA**.

Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

<b>Nema Socket</b> order with <b>subcode -40</b> (sealing cap to be ordered separately)	Mounted directly on the fixture's body, ideal for remote lighting management applications.
<b>Zhaga Socket</b> order with <b>subcode -0054</b> (complete with sealing cap)	

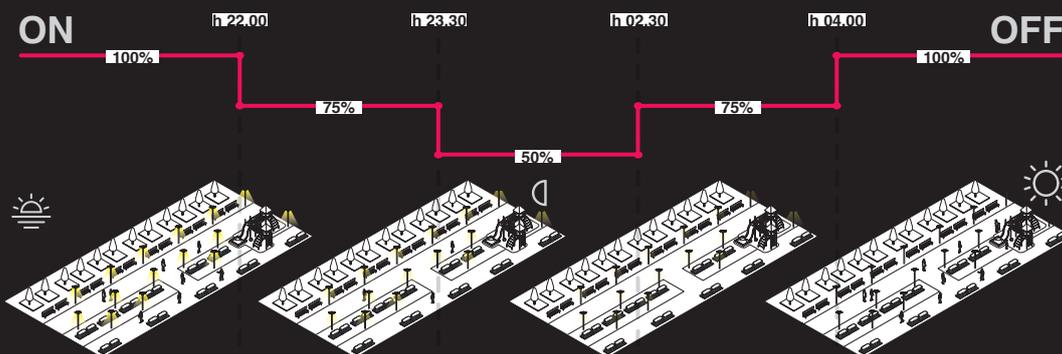


Exemple with Zhaga Socket (subcode -0054)

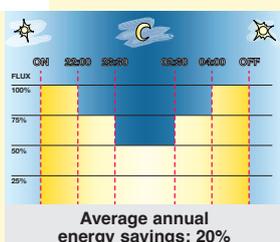
To **increase energy savings** at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical “virtual midnight”. This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The “virtual midnight” is the reference point for dimming lights according to the desired profile.

The device is integrated in the LED driver and therefore does not require any modification to the system.

*In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



For example, in the central hours of the night, in areas where car and pedestrian traffic decreases significantly, a **reduction in luminous flux keeps the light within safety standards, while avoiding waste**. If we multiply this reduction by tens or hundreds of lamps, we get **significant savings**.

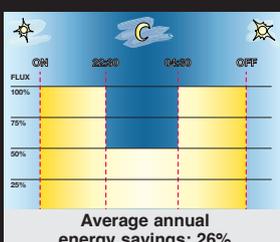


Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

**Virtual Midnight subcode -30:** fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

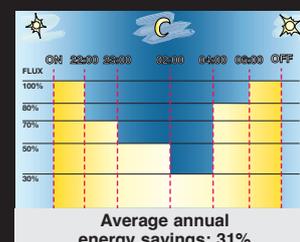
**ATTENTION:** original settings and time slots for the “virtual midnight” value can be customized in up to 5 steps upon request.

Virtual midnight in 2 steps subcode -35



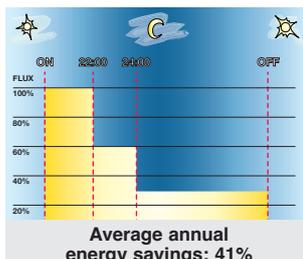
Settings upon request	
Time	Flux
on ÷ 22:30	100%
22:30 ÷ 04:30	50%
04:30 ÷ off	100%

Virtual midnight in 5 steps subcode -32



Settings upon request	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:00	70%
23:00 ÷ 02:00	50%
02:00 ÷ 04:00	30%
04:00 ÷ 06:00	80%
06:00 ÷ off	100%

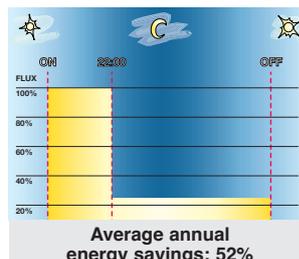
### Virtual midnight GREEN AREAS subcode -0001



Settings upon request	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 24:00	60%
24:00 ÷ off	30%

Ideal for green areas and parks, which are closed to the public at specific hours.

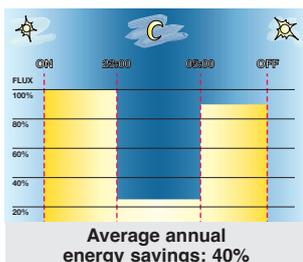
### Virtual midnight SAFETY (PRIVATE PROPERTY) subcode -0002



Settings upon request	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ off	25%

Ideal to maintain safety lights at workplaces, in which people/vehicles are not circulating after work hours.

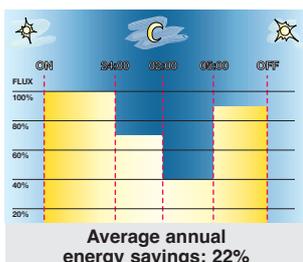
### Virtual midnight PRIVATE PROPERTY AND COMMERCIAL subcode -0003



Settings upon request	
Time	Flux
on ÷ 23:00	100%
23:00 ÷ 05:00	25%
05:00 ÷ off	90%

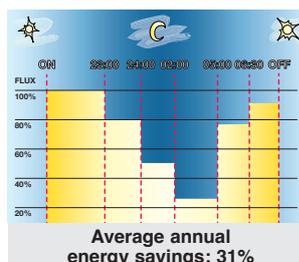
Ideal for private property and commercial areas after work hours.

### Virtual midnight METROPOLI (500.000 population) subcode -0005



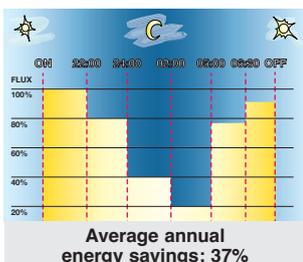
Settings upon request	
Time	Flux
on ÷ 24:00	100%
24:00 ÷ 02:00	70%
02:00 ÷ 05:00	40%
05:00 ÷ off	90%

### Virtual midnight BIG CITY (200.000 population) subcode -0006



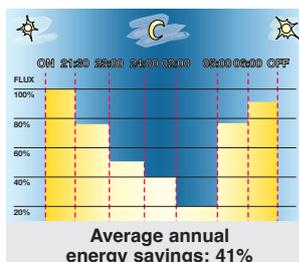
Settings upon request	
Time	Flux
on ÷ 23:00	100%
23:00 ÷ 24:00	80%
24:00 ÷ 02:00	50%
02:00 ÷ 05:00	30%
05:00 ÷ 06:30	75%
06:30 ÷ off	90%

### Virtual midnight CITY (50.000 population) subcode -0007



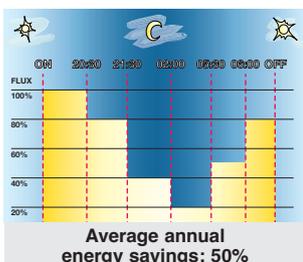
Settings upon request	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 24:00	80%
24:00 ÷ 02:00	40%
02:00 ÷ 05:00	20%
05:00 ÷ 06:30	75%
06:30 ÷ off	90%

### Virtual midnight TOWN (5.000 population) subcode -0008



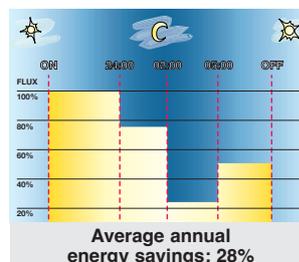
Settings upon request	
Time	Flux
on ÷ 21:30	100%
21:30 ÷ 23:00	75%
23:00 ÷ 24:00	50%
24:00 ÷ 02:00	40%
02:00 ÷ 05:00	20%
05:00 ÷ 06:00	75%
06:00 ÷ off	90%

### Virtual midnight VILLAGE (2.000 population) subcode -0009



Settings upon request	
Time	Flux
on ÷ 20:30	100%
20:30 ÷ 21:30	80%
21:30 ÷ 02:00	40%
02:00 ÷ 05:00	20%
05:00 ÷ 06:00	50%
06:00 ÷ off	80%

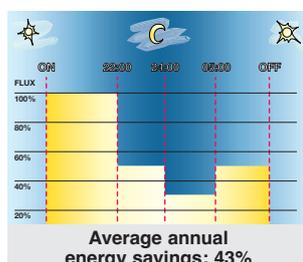
### Virtual midnight HIGH SEASONS subcode -0010



Settings upon request	
Time	Flux
on ÷ 24:00	100%
24:00 ÷ 02:00	75%
02:00 ÷ 05:00	25%
05:00 ÷ off	50%

Ideal for tourist resorts during peak season periods (sea-summer; mountain-winter).

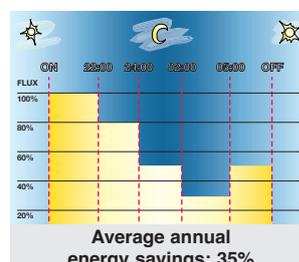
### Virtual midnight LOW SEASONS subcode -0011



Settings upon request	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 24:00	50%
24:00 ÷ 05:00	30%
05:00 ÷ off	50%

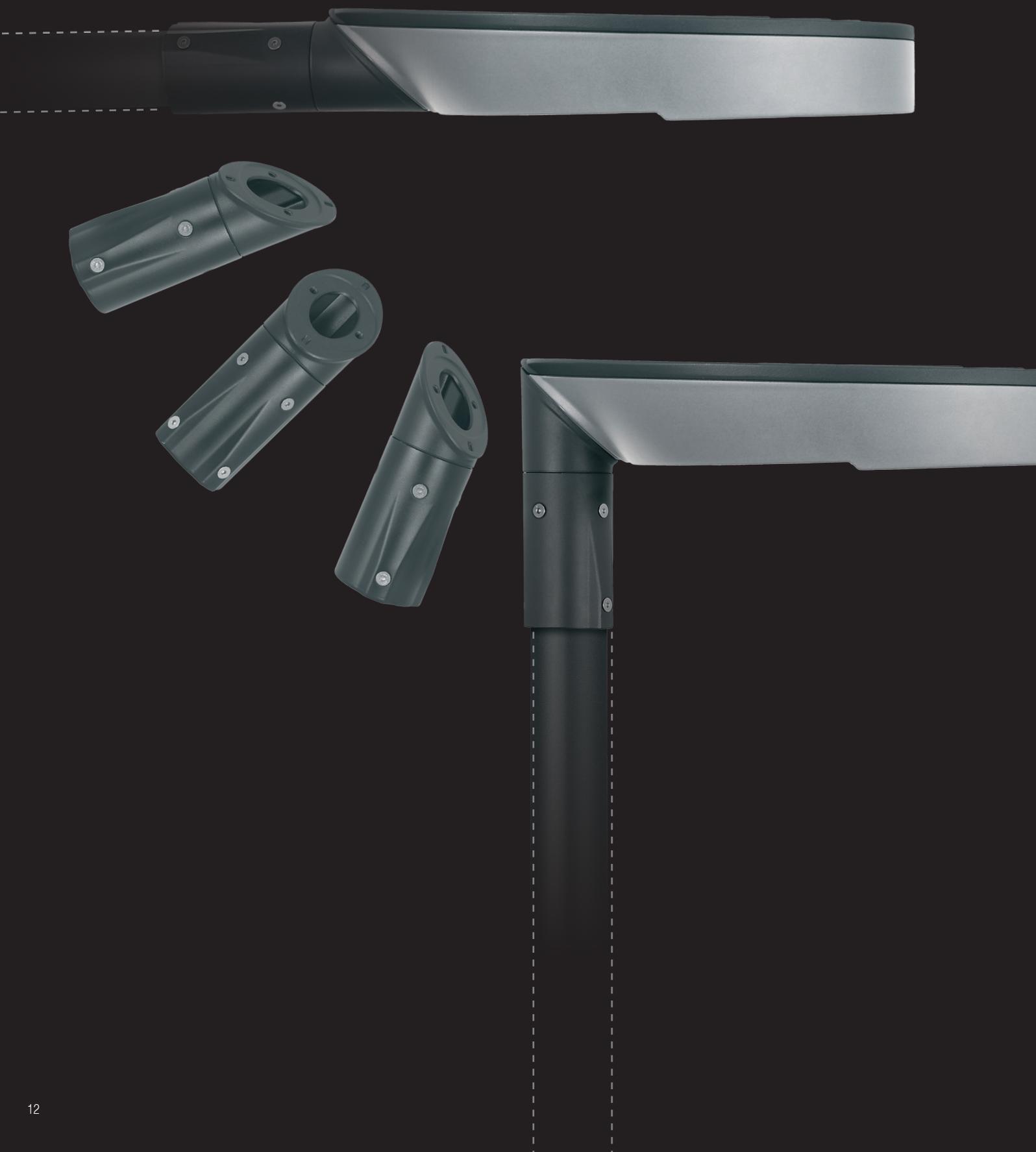
Ideal for tourist resorts during low season periods.

### Virtual midnight FOUR SEASONS subcode -0012

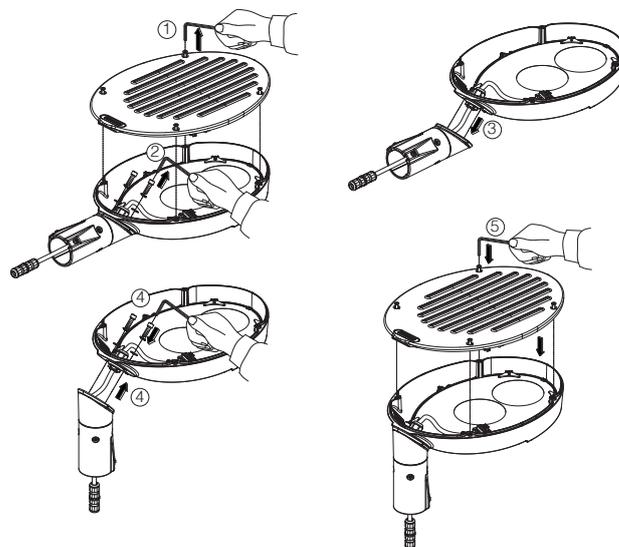


Settings upon request	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 24:00	80%
24:00 ÷ 02:00	50%
02:00 ÷ 05:00	30%
05:00 ÷ off	50%

Ideal for tourist resorts that do not need to reschedule their lighting times (compromise between high and low season).

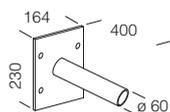


Installation sequence for side-mount/top mount pole connection applications.



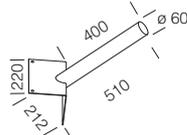
As standard, all **Torpedo 2.0** lamps are equipped with a waterproof connector to ensure quick and safe connection to the power line.

## Accessories for wall mounting



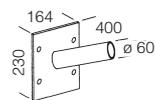
### 248 wall bracket

RAL 9006	Ø60	997708-00
In steel. For wall mounting.		



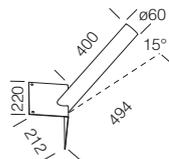
### 249 corner bracket

RAL 9006	Ø60	997803-00
In steel. For wall corner mounting.		



### acc. 48 wall bracket

RAL 9006	Ø60	997706-00
In steel. Used for wall mounting. Angle 15°.		



### acc. 49 corner bracket

RAL 9006	Ø60	997802-00
In steel. For wall corner mounting. Angle 15°.		

## Upon request:

versions available in different colours and surface finishes to coordinate with any architectural design.



GREEN  
RAL 6024



WHITE  
RAL 9003



BLUE  
RAL 5005



YELLOW  
RAL 1021



RED  
RAL 3001

## GENERAL CHARACTERISTICS



**Housing and cover:** in die-cast aluminium and designed with a very small surface exposed to wind. Cooling fins are integrated into the cover.

**Pole connection:** in die-cast aluminium; suited for poles with a diameter Ø60mm.

**Diffuser:** extra-clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts (UNI-EN12150-1: 2001).

**Coating:** the fully automated powder-coating cycle involves a polyester-based, salt-spray corrosion-resistant and UV-stabilised paint.

**Upon request:** protective coating recommended for marine environments within 5 km of the sea.

## OTHER CHARACTERISTICS



**Standard supply:** automatic temperature control inside the device with automatic resetting; dedicated electronic device to protect the LED module; Complete with waterproof connector for quick installation and anti-condensation valve for air recirculation.

Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

**Torpedo:** 6/10 kW.

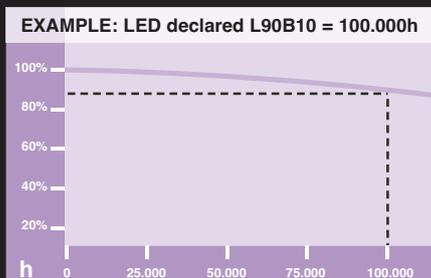
## PHOTOBIOLOGICAL SAFETY



We often read about photobiological safety in lighting design. This very important factor is determined by the amount of radiations emitted by all the sources with a wave length ranging between 200 nm and 3000 nm. Excessive radiation exposure can be harmful for human health. The EN62471 standard classifies light sources into risk groups.

**Risk Group 0 (RGO Ethr):** luminaires are exempt from photobiological risks in compliance with standard EN 62471. If necessary, contact our customer service for the observation distance.

## LIFE EXPECTANCY



The decrease of LED flux is defined by the working life and is represented by the L90 mark (see chart), which means that the flux is kept up to 90%. The "B" letter followed by a number ranging between 10 and 50 indicates the quality of the fixture and defines the LED percentage that keeps the declared characteristics when it reaches 100,000 working hours.

**LED:** power factor:  $\geq 0,9$ .

**Torpedo COB:**

luminous flux maintenance:

80%: **90.000h (L80B10)**

70%: **100.000h (L70B50)**

**Torpedo with lenses:**

luminous flux maintenance:

90%: **100.000h (L90B10)**

ENEC is a European Mark that demonstrates that Ischia fixture is compliant with applicable European safety standards and was manufactured by a company that applies a Quality System according to ISO 9000.

= pending approval.

## CERTIFICATIONS



The IK code indicates the fixture's degree of protection against mechanical impact and determines the degree of protection provided by the electrical equipment's enclosures against these impacts (EN 50102 - NF 20-015).

## IK LEVEL OF PROTECTION



The design registrations for our products are certified by the International Bureau of the World Intellectual Property Organization (WIPO) in the International Registry of Industrial Designs.

Registered Design  
DM/100271

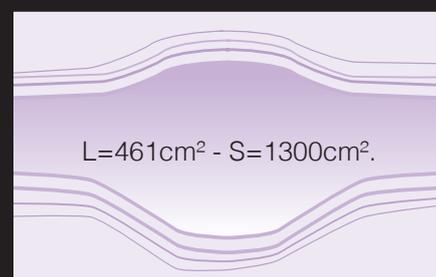
Flicker is a common issue with LED lamps. It can occur at frequencies below 60 Hz and depends on several factors, such as the ripple emitted by drivers. Product with a very low flicker; uniform light for greater eye protection.

## LOW FLICKER



The fixture's design is configured to minimise wind exposure surfaces.

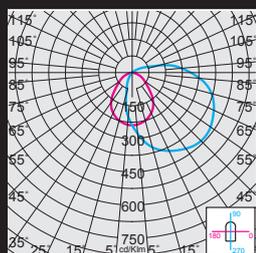
## SURFACE EXPOSED TO WIND



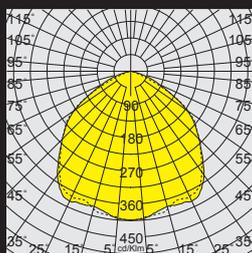
Optic: in pressed 99.95 aluminium  
with PVD treatment,  
anodically oxidized and polished.



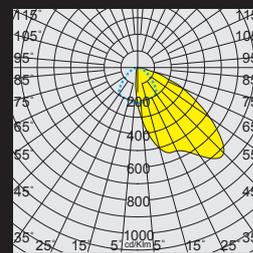
Torpedo 2.0 - COB



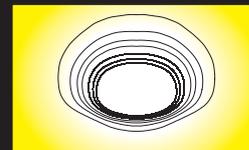
**WIDE BEAM - 45°**



**WIDE BEAM**

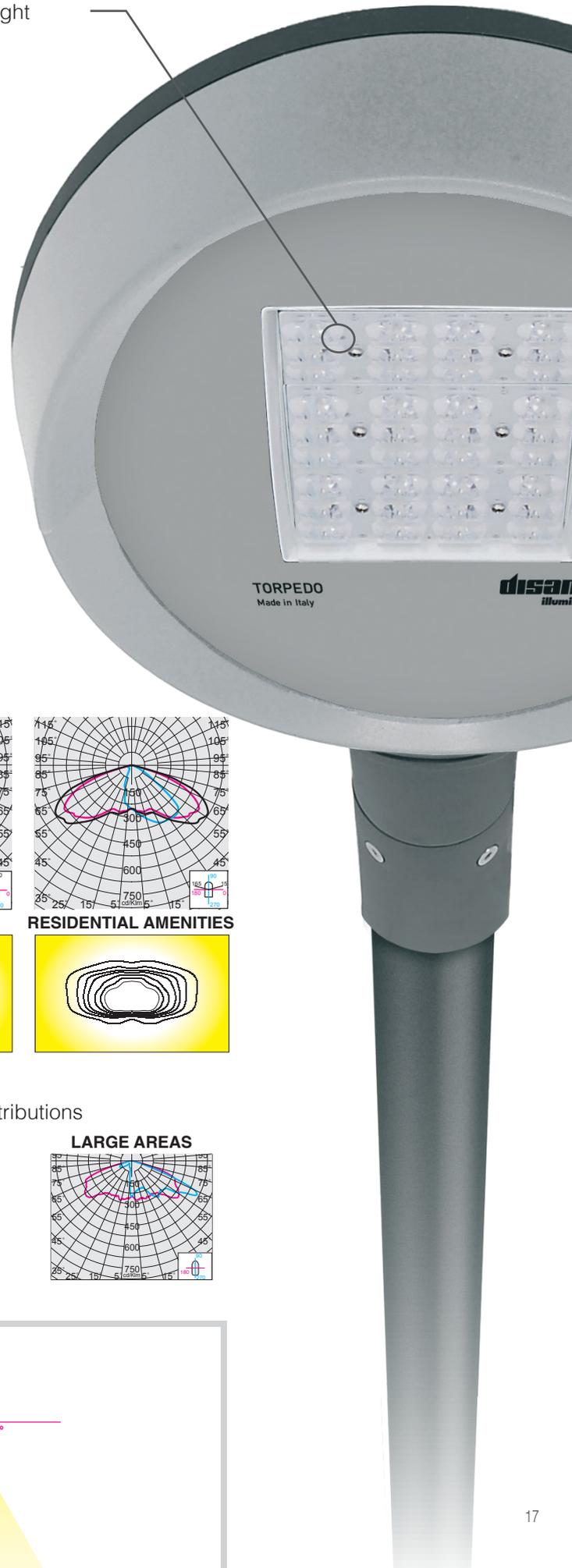


**ASYMMETRIC**

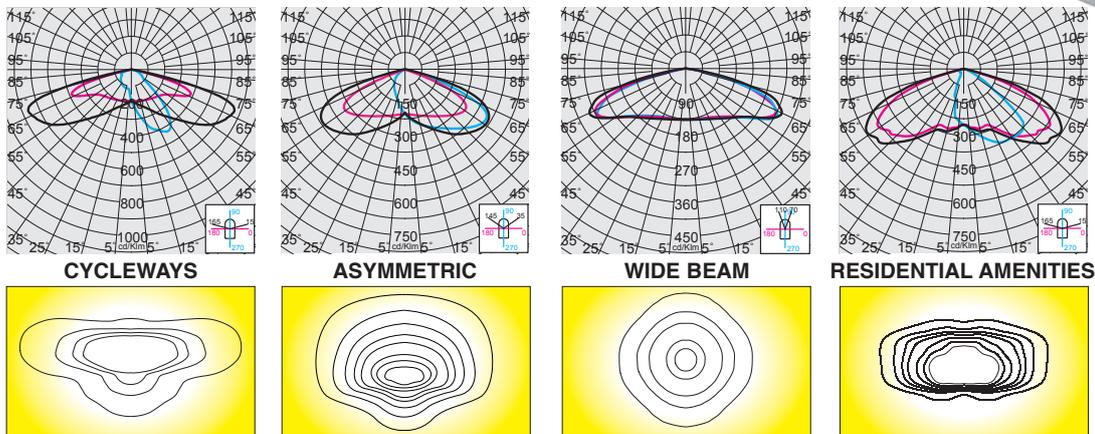


Precision optics allowing great design flexibility and high-quality light distribution.

In PMMA, highly resistant to temperature and UV radiation.

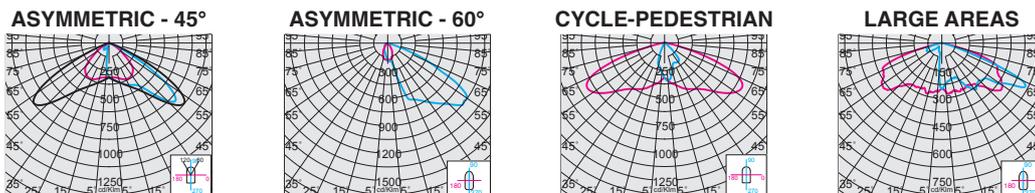


## Torpedo 2.0 with lenses



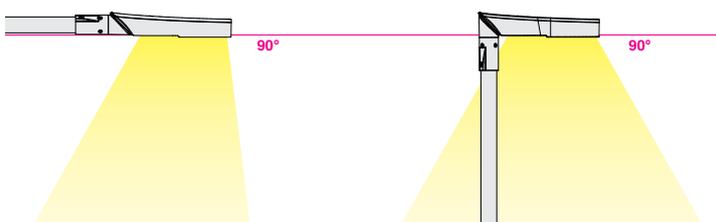
**Upon request:**

available **Torpedo 2.0** with other photometric distributions



**NO LIGHTING POLLUTION**

*luminous intensity  $\leq 0.49$  cd/klm at  $Y \geq 90^\circ$*

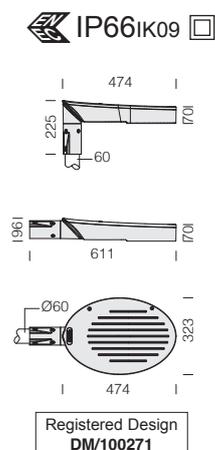






## 1240 Torpedo 2.0 - 45° top-mount with matt glass - wide beam

LED	colour	weight	CLD		LUMEN OUTPUT (tq= 25 °C)	
			code	W tot	K - ølm - CRI	
COB	grey + RAL 7021	5.40	427810-00	25	4000K - 3182lm - CRI≥80	
			427810-39		3000K - 3022lm - CRI≥80	
			427811-00	51	4000K - 6364lm - CRI≥80	
			427811-39		3000K - 6046lm - CRI≥80	



## 1241 Torpedo 2.0 - wide beam

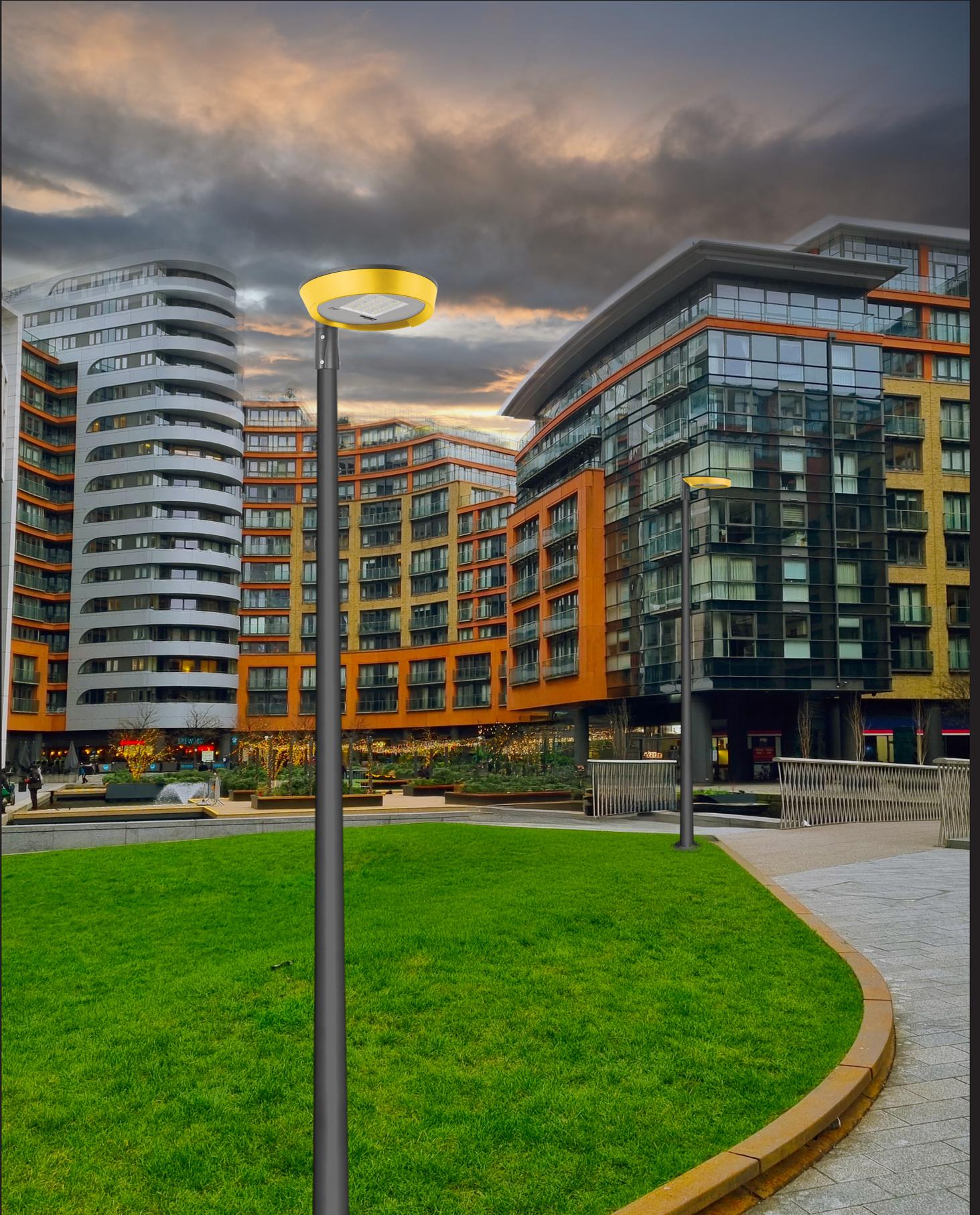
LED	colour	weight	CLD		LUMEN OUTPUT (tq= 25 °C)	
			code	W tot	K - ølm - CRI	
COB	grey + RAL 7021	5.40	427820-00	25	4000K - 3990lm - CRI≥80	
			427820-39		3000K - 3790lm - CRI≥80	
			427821-00	51	4000K - 7979lm - CRI≥80	
			427821-39		3000K - 7580lm - CRI≥80	



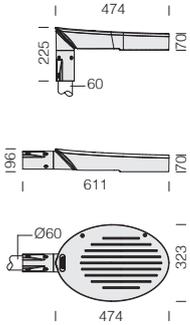
## 1242 Torpedo 2.0 - asymmetric

LED	colour	weight	CLD		LUMEN OUTPUT (tq= 25 °C)	
			code	W tot	K - ølm - CRI	
COB	grey + RAL 7021	5.40	427830-00	25	4000K - 3723lm - CRI≥80	
			427830-39		3000K - 3537lm - CRI≥80	
			427831-00	51	4000K - 7445lm - CRI≥80	
			427831-39		3000K - 7073lm - CRI≥80	





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## 1243 Torpedo 2.0 - cycleways

LED	colour	CLD PROG			LUMEN OUTPUT (tq= 25 °C)	
		weight	code	W tot	K - ølm - CRI	
LED	grey + RAL 7021	5.40	427840-00	12	4000K - 1903lm - CRI≥70	
			427840-39		3000K - 1808lm - CRI≥70	
			427841-00	22	4000K - 3438lm - CRI≥70	
			427841-39		3000K - 3266lm - CRI≥70	
			427842-00	32	4000K - 5077lm - CRI≥70	
			427842-39		3000K - 4823lm - CRI≥70	



## 1244 Torpedo 2.0 - asymmetric

LED	colour	CLD PROG			LUMEN OUTPUT (tq= 25 °C)	
		weight	code	W tot	K - ølm - CRI	
LED	grey + RAL 7021	5.40	427850-00	12	4000K - 1987lm - CRI≥70	
			427850-39		3000K - 1887lm - CRI≥70	
			427851-00	22	4000K - 3811lm - CRI≥70	
			427851-39		3000K - 3620lm - CRI≥70	
			427852-00	32	4000K - 5530lm - CRI≥70	
			427852-39		3000K - 5253lm - CRI≥70	
			427853-00	45	4000K - 7666lm - CRI≥70	
			427853-39		3000K - 7283lm - CRI≥70	



## 1245 Torpedo 2.0 - wide beam

LED	colour	CLD PROG			LUMEN OUTPUT (tq= 25 °C)	
		weight	code	W tot	K - ølm - CRI	
LED	grey + RAL 7021	5.40	427870-00	12	4000K - 1874lm - CRI≥70	
			427870-39		3000K - 1780lm - CRI≥70	
			427871-00	22	4000K - 3420lm - CRI≥70	
			427871-39		3000K - 3250lm - CRI≥70	
			427872-00	32	4000K - 4985lm - CRI≥70	
			427872-39		3000K - 4736lm - CRI≥70	
			427873-00	45	4000K - 6505lm - CRI≥70	
			427873-39		3000K - 6180lm - CRI≥70	



## 1246 Torpedo 2.0 - residential amenities

LED	colour	CLD PROG			LUMEN OUTPUT (tq= 25 °C)	
		weight	code	W tot	K - ølm - CRI	
LED	grey + RAL 7021	5.40	427867-00	17	4000K - 2793lm - CRI≥70	
			427867-39		3000K - 2653lm - CRI≥70	
			427868-00	34	4000K - 5586lm - CRI≥70	
			427868-39		3000K - 5307lm - CRI≥70	

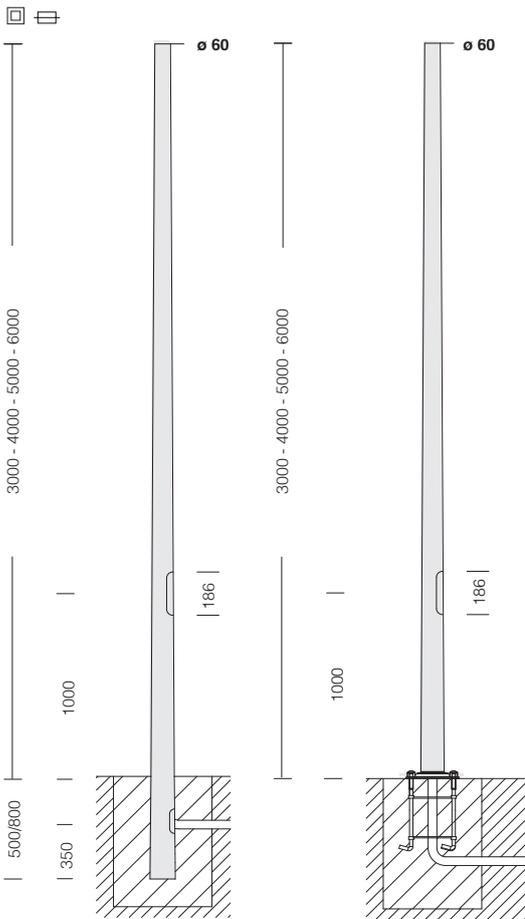




Steel cone-shaped pole



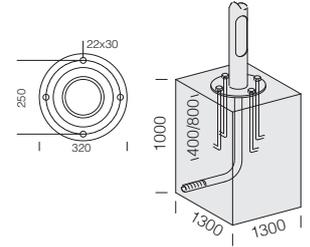
Virgola pole



**ON REQUEST**

Possibility of supplying poles with the following colour paint finishes:  
 pearl, blue, RAL 3003, 5011, 7026, 9011, 8015, 5002, 7024, 7016, 7037, 6004, 8019, 6011, 7022, 1015, 9010.

Concrete base dimensions (subject to soil variations).



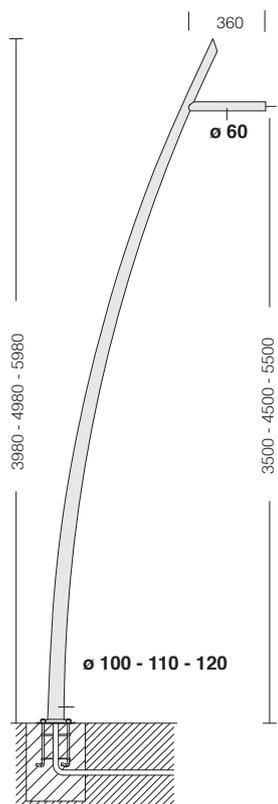
**acc. 1481 - steel cone-shaped to be buried**

colour	code								
RAL 9006	425150-00	3500	3000	500	1000	186	45	Ø 60	Ø 89
RAL 9006	425151-00	4500	4000	500					Ø 89
RAL 9006	425152-00	5500	5000	500					Ø 102
RAL 9006	425153-00	6800	6000	800					Ø 127
RAL 7021	425160-00	3500	3000	500					Ø 89
RAL 7021	425161-00	4500	4000	500					Ø 89
RAL 7021	425162-00	5500	5000	500	Ø 102				
RAL 7021	425163-00	6800	6000	800	Ø 127				

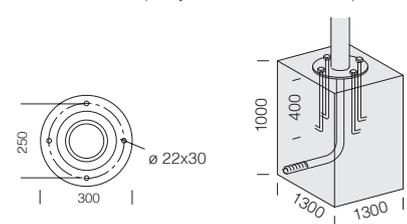
**acc. 1480 - steel cone-shaped with base**

colour	codice							
RAL 9006	425050-00	3000	1000	186	45	Ø 60	Ø 320 foro Ø 22x30	Ø 89
RAL 9006	425051-00	4000						Ø 89
RAL 9006	425052-00	5000						Ø 102
RAL 9006	425053-00	6000						Ø 127
RAL 7021	425086-00	3000						Ø 89
RAL 7021	425087-00	4000						Ø 89
RAL 7021	425088-00	5000	Ø 102					
RAL 7021	425089-00	6000	Ø 127					

Log bolts are to be bought separately acc. 299. RAL 9006= grey.



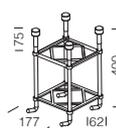
Concrete base dimensions (subject to soil variations).



**acc. 1490 "Virgola" pole**

colour	code					
RAL 9006	425080-00	3980	3500	Ø 100	Ø 60	Ø 300 foro Ø 22x30
RAL 9006	425081-00	4980	4500	Ø 110		
RAL 9006	425082-00	5980	5500	Ø 120		

Log bolts are to be bought separately acc. 299. On request pole to be buried. RAL 9006= grey.



**acc. 299 log bolts**

991396-00

Log bolts are to be always used with the pole 1480 - 1490.

# TORPEDO 2.0



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