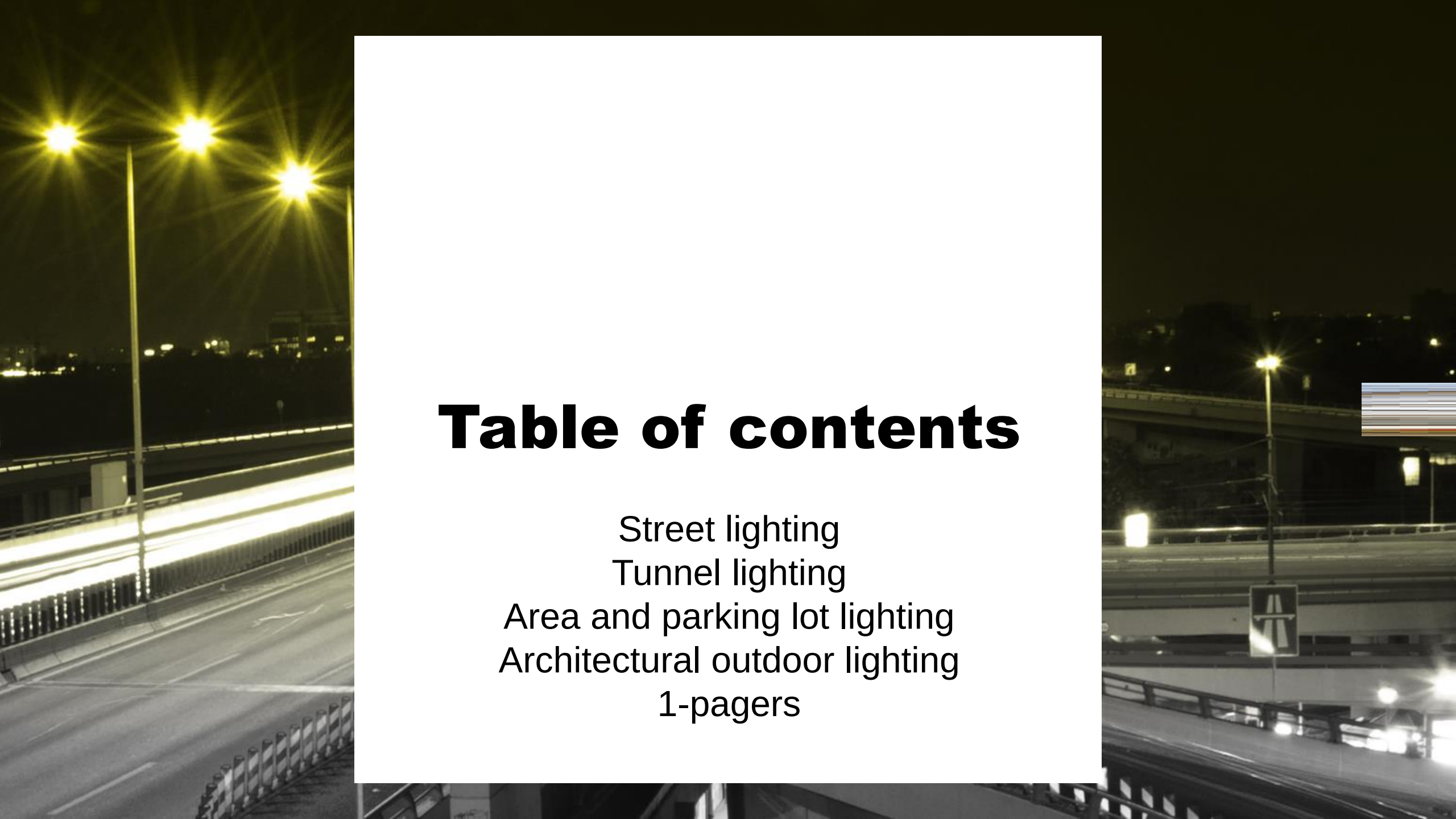

LEDiL®
Light that is right
Outdoor lighting



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Street lighting

- A growing number of over 300 million street lights in the world
- Diversity of road types, regulations and street light pole arrangements
- The main principles are the same - high quality illumination that ensures clear visibility and road safety
- Two biggest costs - maintenance and energy consumption; both can be addressed with the combination of good LEDs and optics
- Optics play a key role in fulfilling requirements for efficacy, uniformity, glare and light pollution

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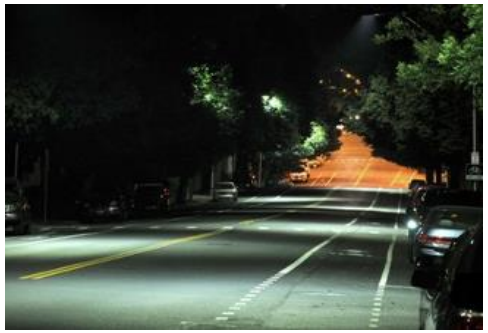
Street lighting in nutshell

What is optically important in Street lighting?

1. Light output efficiency & in-use efficacy

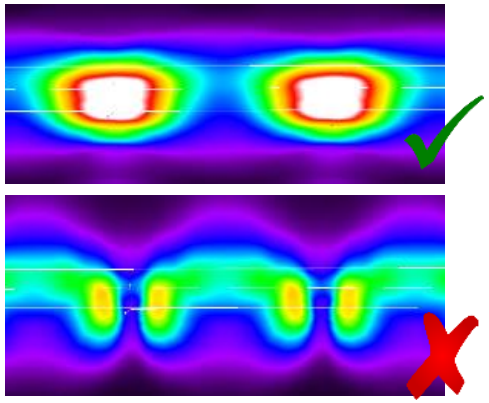
2. Uniformity



3. Glare

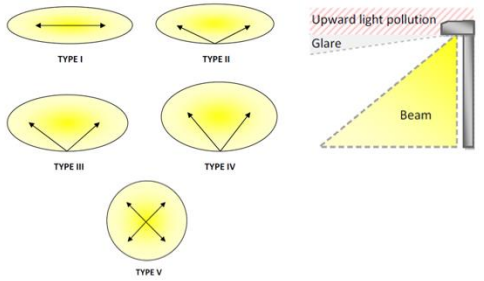
4. Light pollution

5. Visual factors



6. Flexibility

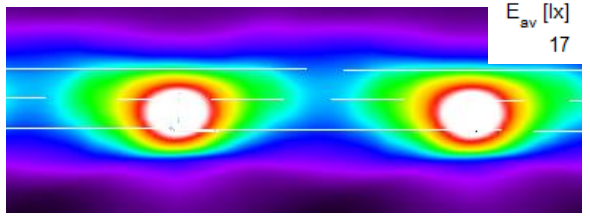
7. Standards

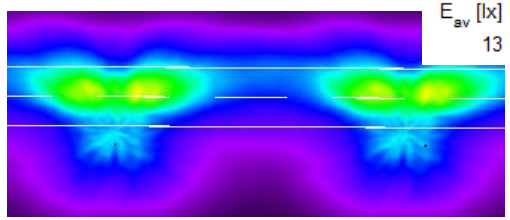


8. Materials

1. Light output efficiency & in-use efficacy

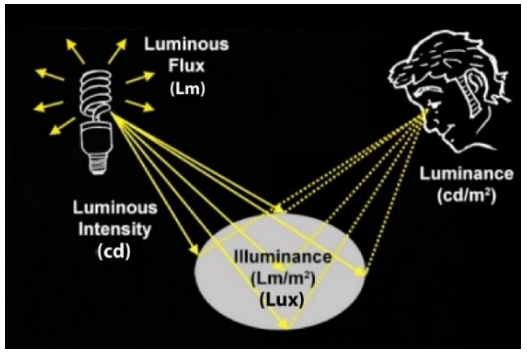
- LEDiL lenses have typically >92 % light output efficiency
- Optics provide control with ability to direct light where it is needed
- Suitable and well designed beams allow more efficient and well performing installations that win more tenders





2. Uniformity

- Road has to be uniformly illuminated to ensure easy perception of road hazards
  (minimum requirements set by standards)



- Road surface affects how uniformly the road is seen (luminance) despite uniform illuminance. (wet surface is less diffusive)

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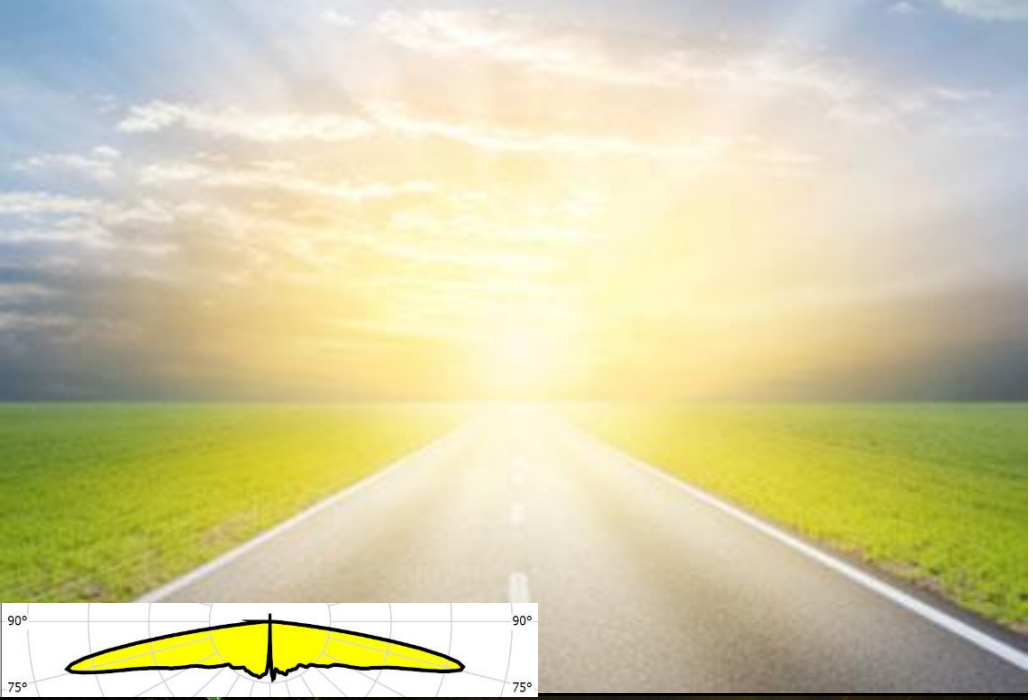
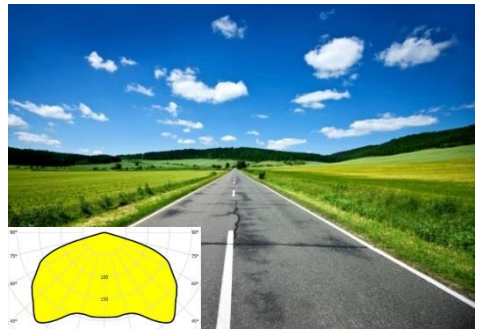


3. Glare



- Disability glare in road lighting is mainly caused by too much light in the widest angles of the beam (>70 deg)
- High intensity at wide angle -> higher brightness at the drivers sight (looking forward)
- Low glare installations require typically shorter pole distances or higher poles
- Shielding helps but optical performance is interfered

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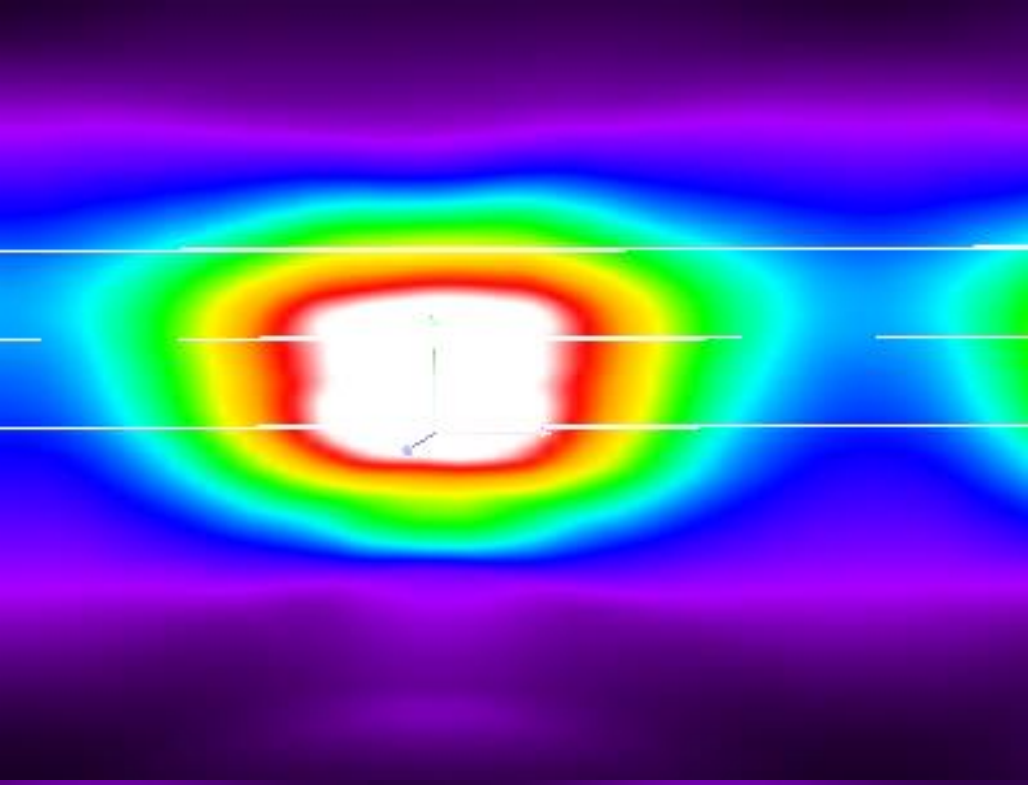
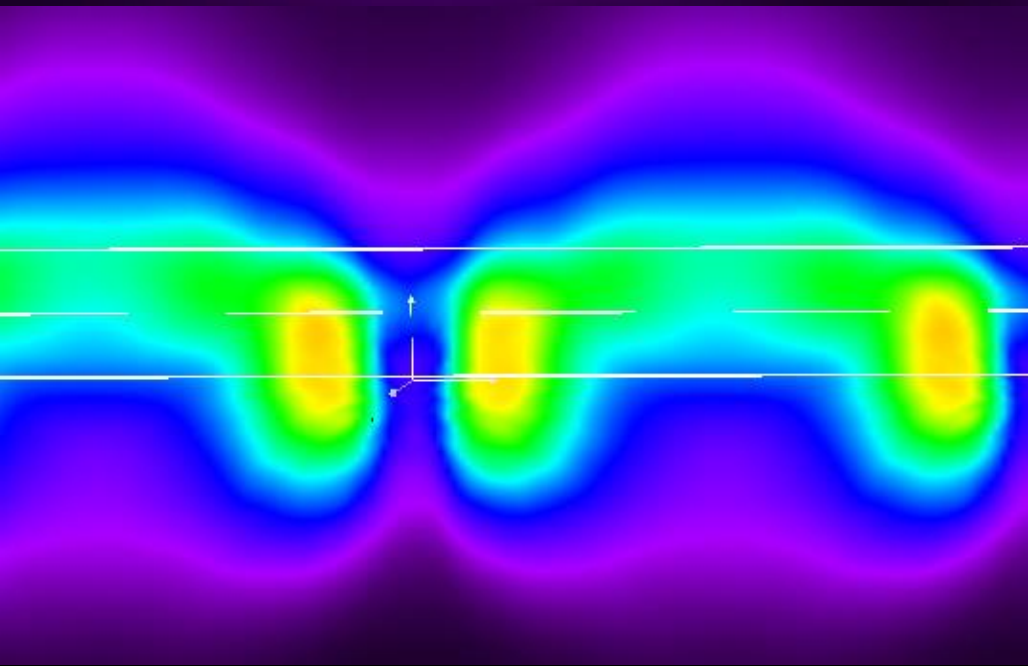
4. Light pollution

- Light pollution is wasted light and energy
    - **Glare** causes discomfort and reduces visibility
    - **Uplight** makes the sky glow and stars disappear
    - **Light trespass** can disturb your sleep and ruin your garden lighting





5. Visual factors

- Shape of the beam
  - Rectangular or round -> more efficient in installation
- Uniformity
  - Consistency in beam
- Spill light
  - Light in the main beam only, no back light
- Color uniformity -> not very critical normally

6. Flexibility

- Wide range of beams ensures you can find close to optimal results for virtually any common street light arrangement

- We consider different installations while we optimize the result for application
  - Road width, pole distance, setback distance are flexible

- Mechanically modular
  - Widest range of optical versions
  - Future proof -> LEDs, more beams
  - Extremely fast time to market
  - Lens mixing within luminaire possible

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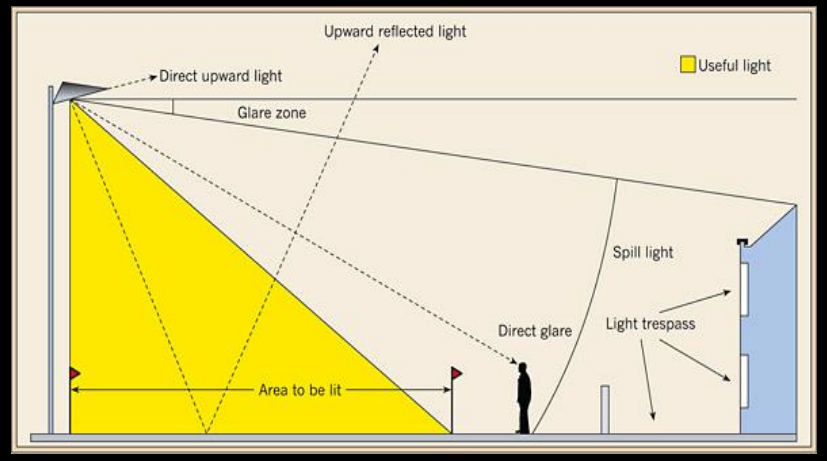
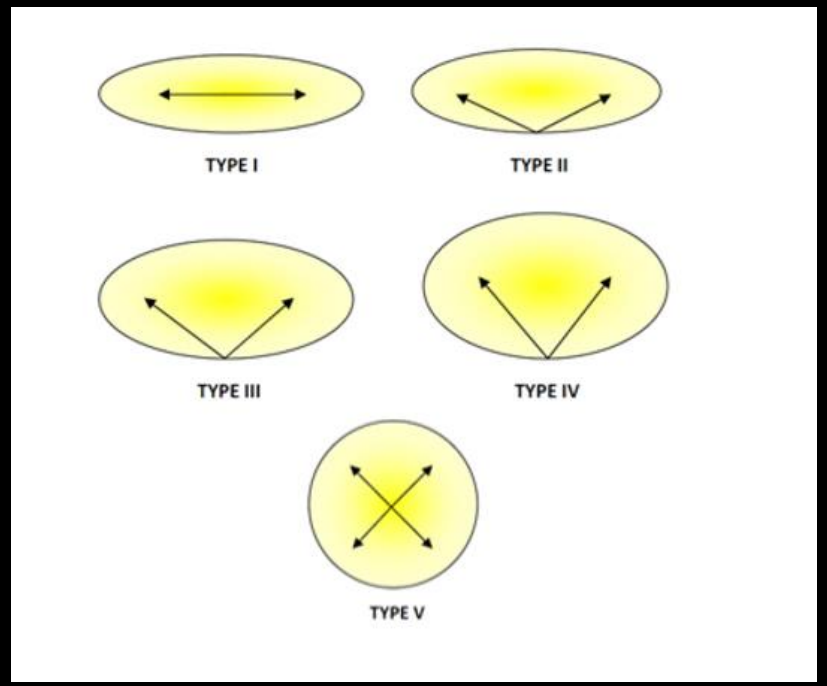




7. Standards

- Light has to fulfill different requirements in the most common street light configuration setups or highly optimized to one specific task
- Different beams optimized for local standards, such as EN13201 in Europe and RP-8 in the US.
- On top of this there are market requirements and trends that need to be followed to give the customers a competetive edge
  (IK, Cutoff, Lm/w etc.)

8. Materials

- **PMMA** (polymethylmethacrylate = acrylic)
  - High resistance for outdoor UV aging
  - High transmittance 93 %
- **PC** (polycarbonate)
  - Better impact but lower UV resistance than with PMMA
  - Suitable for special requirements e.g. Fire rating and glow wire
- **Optical silicone**
  - Great UV and thermal resistance; sealable designs
  - Higher material cost but can reduce system cost as well as prolong a lifetime of a luminaire

	PMMA	PC	SILICONE
Max recomm. Temp. *	80 °C	110 °C	150 °C
UL RTI	90 °C	115 °C or higher	150 °C
Transmittance (Typ.)	93 %	88 %	94 %
UV resistance	++	-	+++
IK resistance	-	++ (up to IK10)	+++

*LEDiL max recommended temperature taking light absorbtion and other environmental circumstancies into account

LEDiL®

Good optical design means good lighting with

- **LESS** watts **MORE** luxes
- **LESS** lumens **MORE** lighting
- **LESS** luminaires **MORE** light
- **LESS** cost **MORE** savings
- **LESS** waste **MORE** eco-friendly

With LEDiL optics you can achieve
LIGHT THAT IS RIGHT

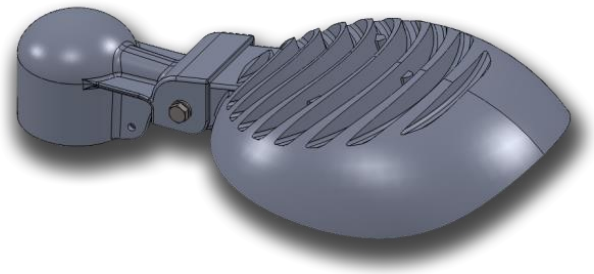
System cost

Design example glass vs silicone

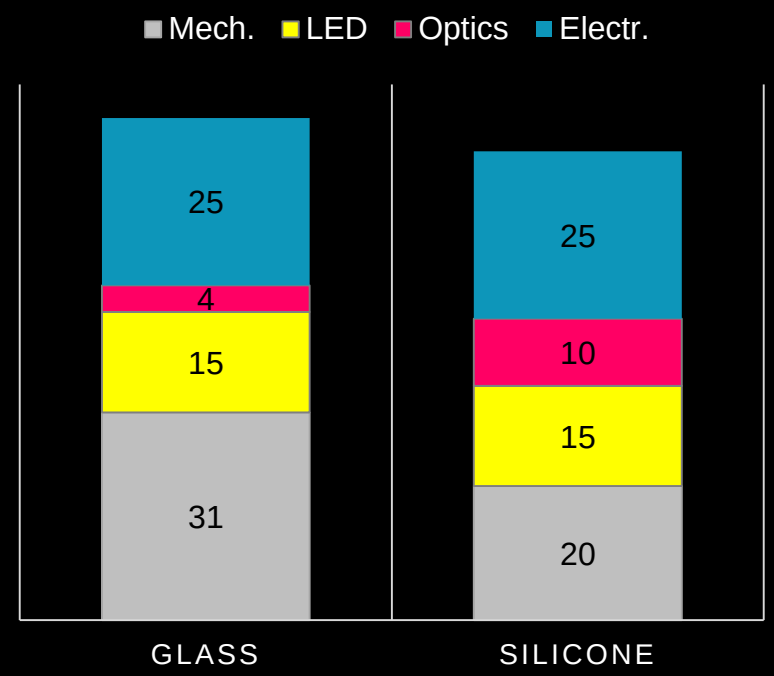
Glass

30 W Street light IP65 (glass)
- 3 die-cast alloy parts
- Several sheet metal parts
- 18 screws
- Assembly time 10 minutes
- 3.5x tooling costs
- Limited optimization of beam types

Silicone



30 W Street light IP65 (silicone)
- 2 (1) die-cast alloy parts
- 6 screws
- Assembly time 3 minutes
- 1x tooling cost
- Freeform optics allow precise and controlled light distributions



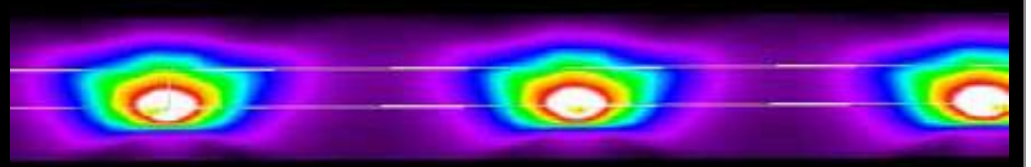
- Secondary optics can offer substantial manufacturing cost savings
  - Mechanical design
  - Structural parts
  - Ease of assembly
  - Logistics
- Cheapest optical solution doesn't necessarily achieve lowest BOM cost!
  - Higher power needed
  - More complicated design
  - Quality problems
  - More complicated manufacturing

Not all optics are equal

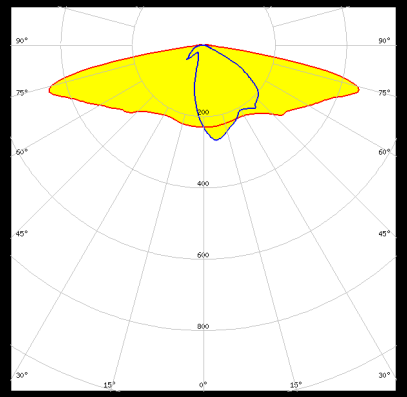
LEDiL optics have better light control resulting in less luminaires needed

STRADA-IP-2X6-SCL

- Better light control
- No disturbing backlight
- Lower power consumption
- Less light poles & luminaires needed



Residential road S4 Class (EN 1320-1) simulation

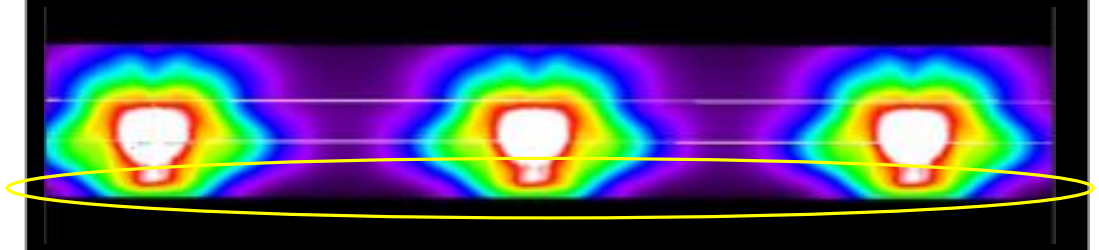


Luminous flux	3 500lm
Pole height	6 m
Pole spacing	48 m
Road width	5 m
Overhang	-0.5 m
Boom angle	0°
u0	0.196

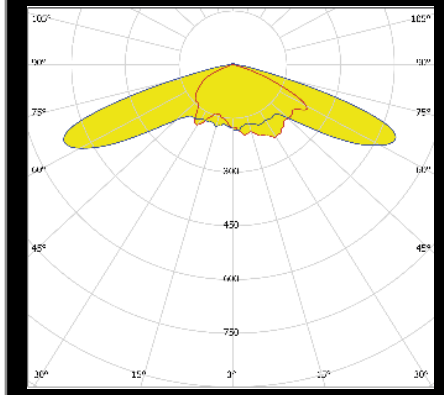
E_{av} [lx]	E_{min} [lx]
5.14	1.01
≥5.00	≥1.00
✓	✓

COMPETITOR

- Worse light control
- A lot of backlight
- Bigger power consumption
- More light poles & luminaires needed



Residential road S4 Class (EN 1320-1) simulation



Luminous flux	5 300lm
Pole height	6 m
Pole spacing	42 m
Road width	5 m
Overhang	-0.5 m
Boom angle	0°
u0	0.146

E_{av} [lx]	E_{min} [lx]
6.94	1.01
≥5.00	≥1.00
✓	✓

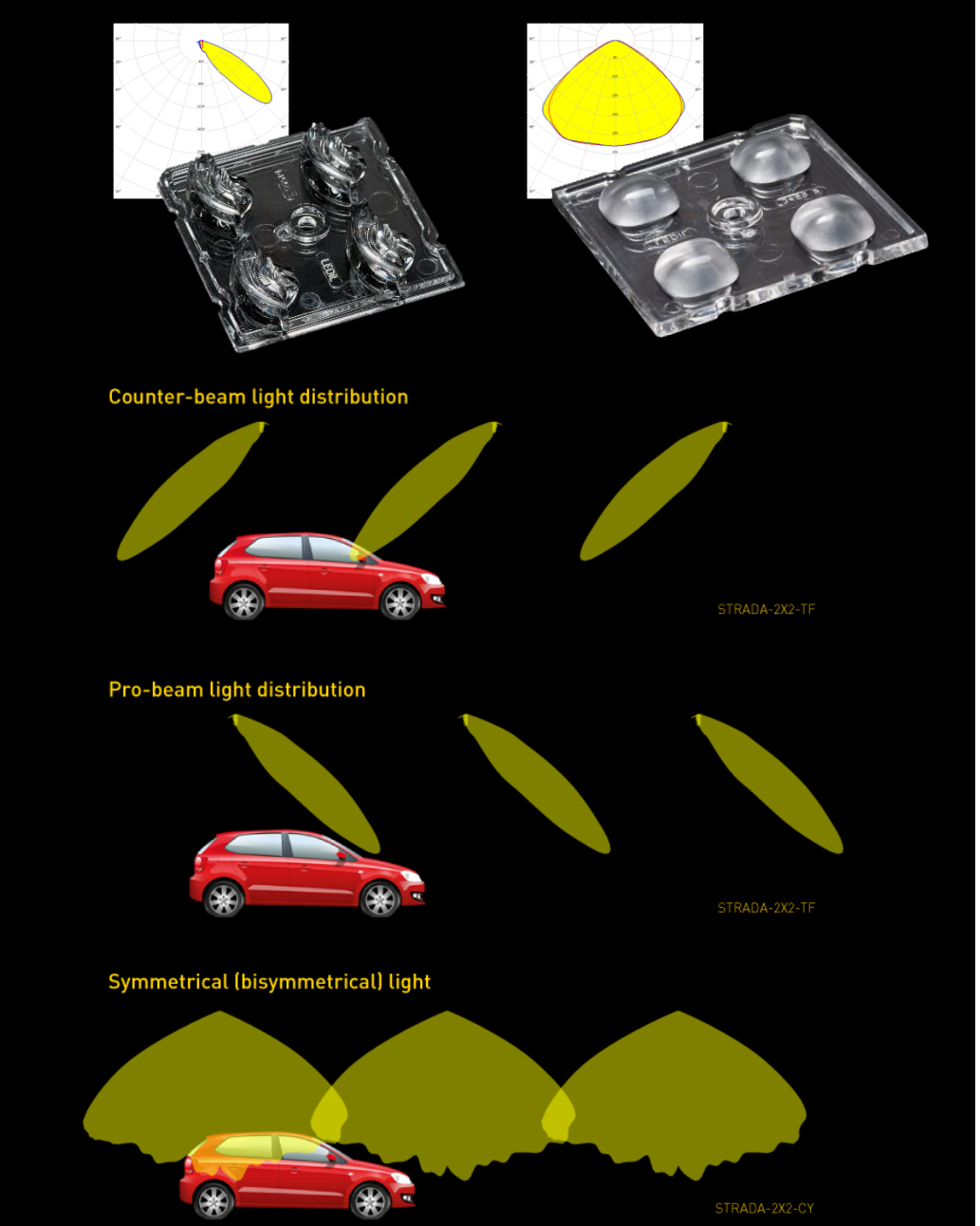
Profitability calculation example per km

With LEDiL optics ~2x less energy cost and ~2x less LEDs needed

	LEDIL STRADA-IP-2X6	COMPETITOR 2X6	COMPETITOR 2X2
Luminaire efficiency (lm/W)	120 lm/W	120 lm/W	120 lm/W
Luminous flux (lm)	3500 lm	5300 lm	5500 lm
Power/luminaire (W)	30 W	45 W	45 W
Pole distance (m)	48 m	42 m	45 m
Poles/1km (pcs)	21 pcs	24 pcs	22 pcs
W/km	630 W = 0.63 kWh	1080 W = 1,08 kWh	1000 W = 1 kWh
Avg eur electricity price (€/kWh)	0.14 €/kWh	0.14 €/kWh	0.14 €/kWh
Lights are on/year (h)	365 d*12 h=4380 h	365 d*12 h=4380 h	365 d*12 h=4380 h
Energy cost/km/year (€)	**387 €**	**662 €**	**613 €**
Amount of LEDs needed per luminaire with 3535 HP (300lm)	**12**	**24 (17.7)**	**20 (19)**
Amount of LEDs needed per km (pcs)	**252**	**576**	**440**

Tunnel lighting

- Lack of natural light needing effective lighting solutions
-
- Sufficient illuminance levels must be achieved day and night
- Sudden variations in lighting levels when entering or exiting a tunnel are not allowed
- At night the lighting levels must be dimmer, while during the day they need to be multiplied and concentrated more at the tunnel entrance
- Luminance and illuminance levels, glare and light uniformity all play a big role when designing the luminaires
- LEDiL offers a wide range of optics designed for tunnel lighting covering symmetrical beams, as well as asymmetrical beams supporting counter- and pro-beams installations



Ways to light tunnels

- Optics using **the counter-beam principle** direct light towards the driver and then reflect back from the road at just the right angle to prevent glare. In this way bigger luminance levels can be achieved with around 150 % more efficiency compared to symmetrical solutions

- **The pro-beam principle** involves turning the optics around to direct light away from the driver. This achieves the same lux levels with almost zero glare, but the luminance levels will be approximately 70 % of what a symmetrical solution would produce. Can be used at **entrance and exit zones**

- **Symmetrical beams** are more suited in tunnels with **two-way traffic** to uniformly illuminate both lanes without glare

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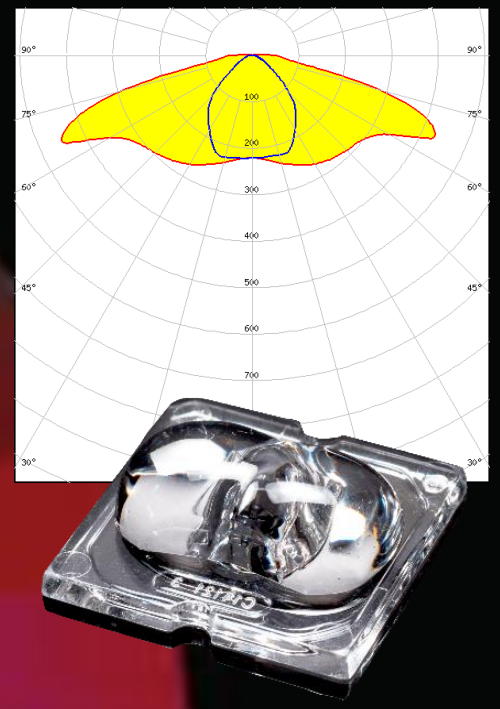
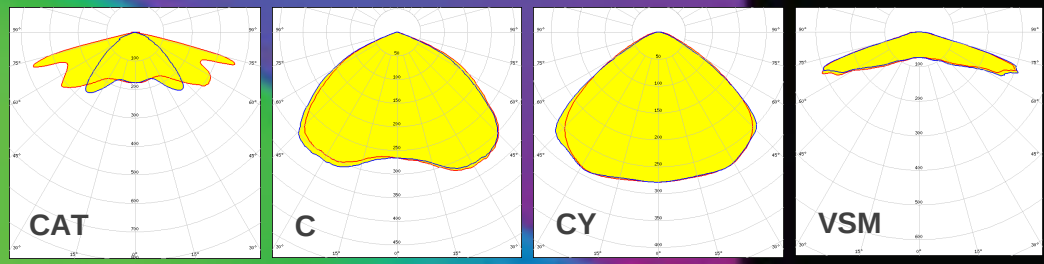
SIMULATION

Tunnel lighting
Symmetrical



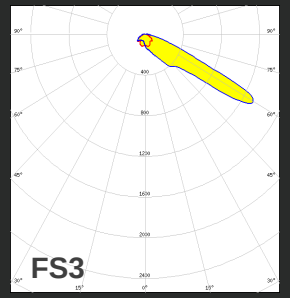
STRADA-SQ-FS2



SIMULATION

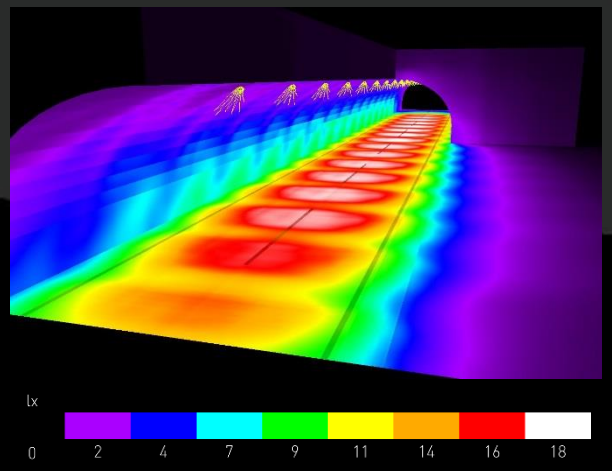
Tunnel lighting with asymmetrical counter-beam

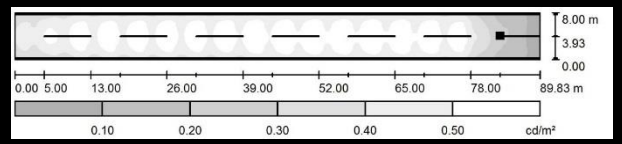
Optic:	STRADA-2X2-FS3
LED:	CREE XP-G3
Efficiency:	93 %
Luminous flux:	930 lm (luminaire)
Road width:	8 m
Number of lanes:	2
Spacing:	8 m
Mounting height:	5.4 m
Maintenance factor:	1.0

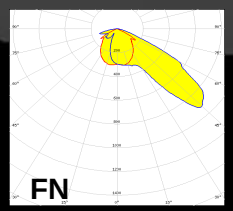


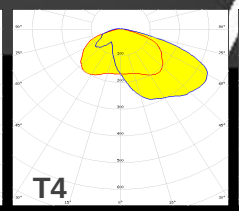
RESULTS

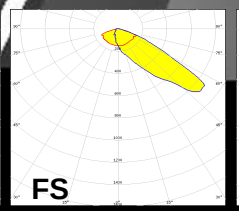
Average: 0.45 cd/m2
Min: 0.07 cd/m2
Max: 0.59 cd/m2

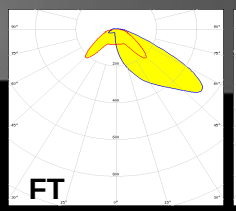


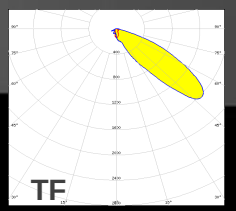












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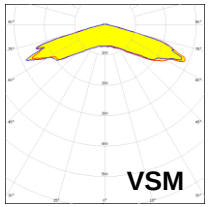
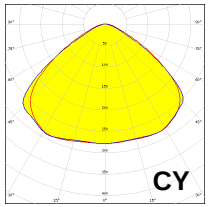
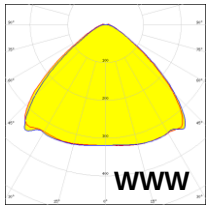
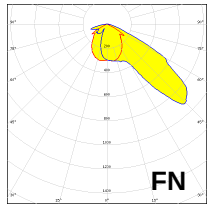
Area and parking lot lighting

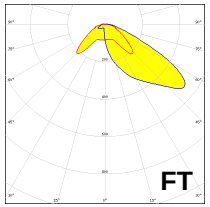
- Include large open air spaces that require broad, uniform illumination:
  - **Parks & parking lots**: good illuminance for visibility and safety, with minimized light trespass
  - **Harbours and airports:** very high poles - 30 meters and higher - that have to illuminate wide areas efficiently and without glare
  - **Sports fields:** standardized areas as well as unique stadium designs with specific lighting requirements
  - **Petrol stations, drive-through and other outdoor canopy lighting applications** need to have efficient area lighting without wasting light and energy

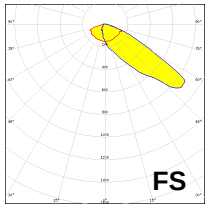






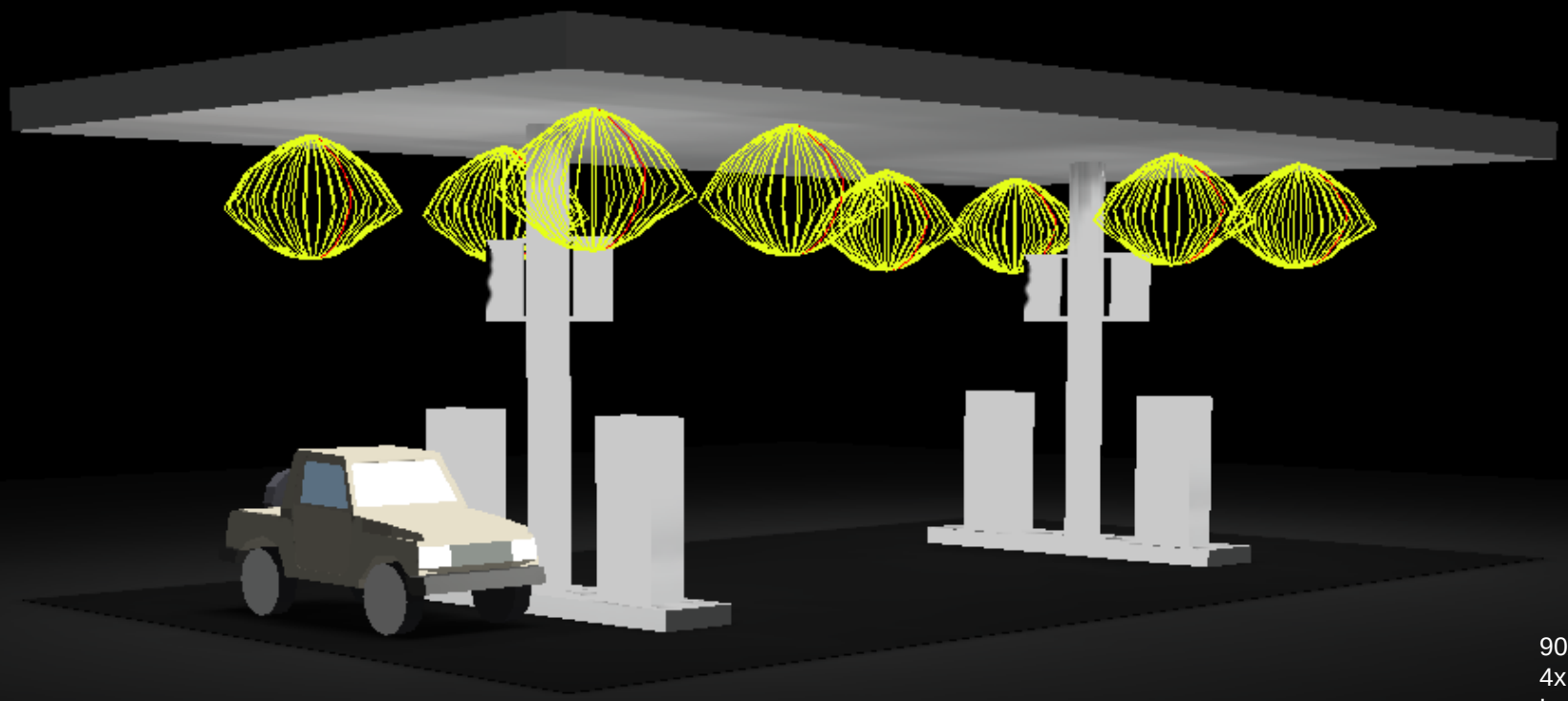


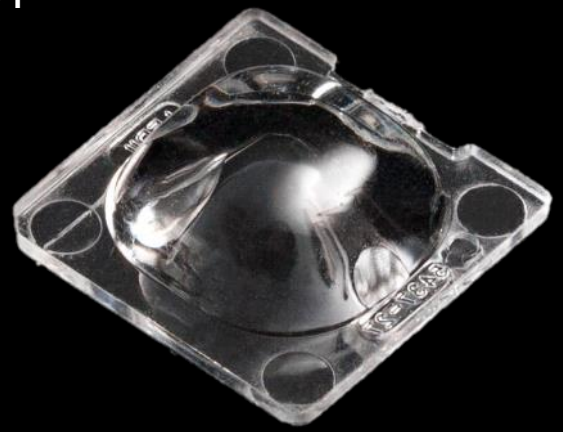




SIMULATION

Gas station lighting with STRADELLA-CY



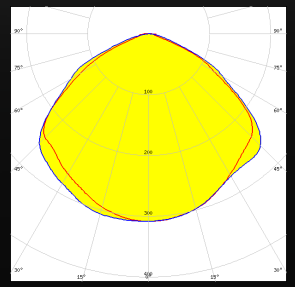


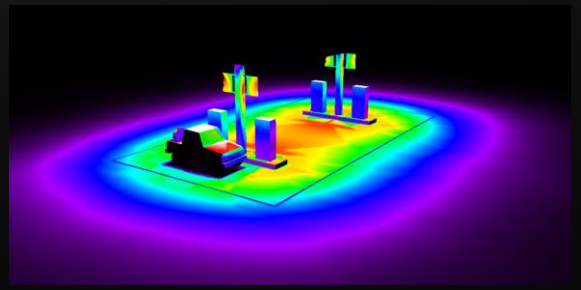
RESULTS
Pumps outer side

Area	**5 x 2.5 m**
Average:	**98 lx**
Min:	**60 lx**
Max:	**161 lx**
u0:	**0.61**

RESULTS
Pumps middle side

Area	**5 x 2.5 m**
Average:	**123 lx**
Min:	**103 lx**
Max:	**157 lx**
u0:	**0.84**





90x STRADELLA-CY in one luminaire
4x luminaires in the middle

Luminous flux (luminaire):	13 830 lm
Installation height:	5.5 m

4x luminaires on sides

Luminous flux (luminaire):	16 793 lm
Installation height:	5.5 m

Results at ground:

Average:	23 lx

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REFERENCE

Gas station lighting
Ledvizor, Luminaire: LV-PRO x24
HB-IP-2X6-WWW

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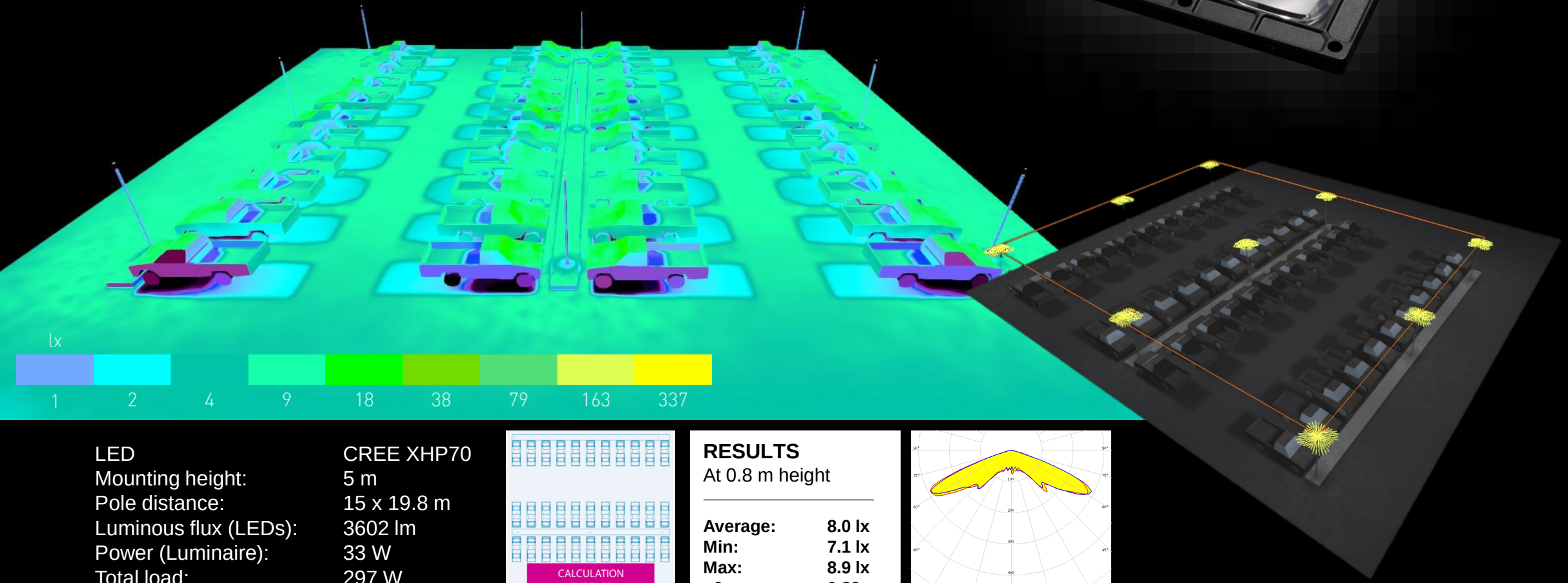
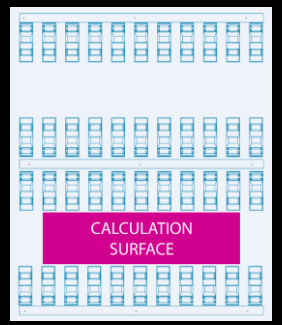
SIMULATION

Parking lot lighting
STRADA-2X2MXS-VSM

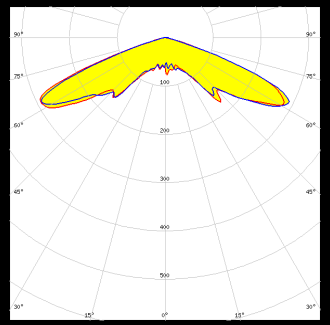


LED	CREE XHP70
Mounting height:	5 m
Pole distance:	15 x 19.8 m
Luminous flux (LEDs):	3602 lm
Power (Luminaire):	33 W
Total load:	297 W

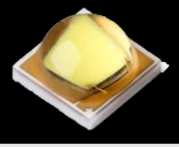
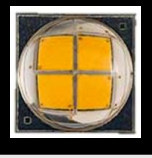


RESULTS
At 0.8 m height

Average:	**8.0 lx**
Min:	**7.1 lx**
Max:	**8.9 lx**
u0:	**0.89**



Different families are optimized for different LEDs

LED Categories	Low/Mid power 	Chip Scale Package (CSP) 	3535 	5050 	7070 	COB 
Package/LES size	5630, 6030, 7030, 3014, 4014, 3030, 3535 ...	1-2 mm2	3535	5050	7070	LES 6-30 mm
Nominal power	<1 W	<1 W or >1 W	>1 W	>4 W	>8 W	3 W-250 W
Lumens	20-140 (up to 180)	20-300 (up to 700)	150-300 (up to 700)	300-600 (up to 1200)	600-1500 (up to 4000)	300-35 000 (up to 65 000)
LED Power categories	Mid Power	Mid Power or High Power	High Power	High Power or Super High Power	Ultra High Power	COB

Typical LED compatibility

LEDiL outdoor product families vs LEDs

Mech OK
OK
Recommended
Mech NOK

MP = Mid Power LEDs
HP = High Power LEDs
CSP = Chip Scale Package LEDs

Single lenses	CSP small	CSP big	3535 MP	3535 HP	5050 HP	7070 HP	COB small <=10 mm	COB big >10 mm
STRADELLA								
STRADA-SQ								
SITARA								
STELLA								
Modules								
STRADA-2X2(S)								
STRADA-2X2CSP								
STRADELLA-8			2chip					
STRADELLA-9								
STRADELLA-16			1chip					
IP Modules								
STRADA-IP-2X6								
STRADA-2X2MX								
STRADA-2X2MXS								
STRADELLA-IP-16								
STRADELLA-IP-28								
SITARA-2X2								

LEDiL®

Modularity

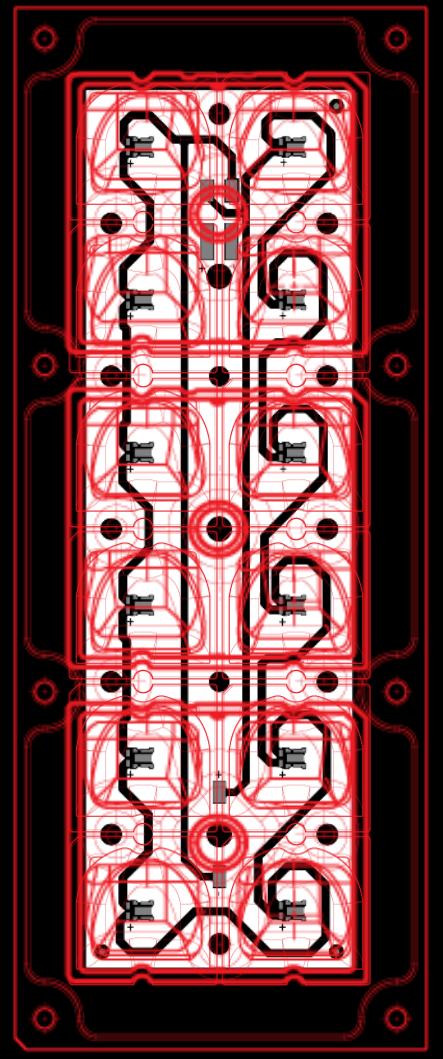
Wide compatibility & easy modification

- LEDiL offers a variety of standardized products with modular structure resulting in lower manufacturing costs and faster time to market

- Same light engine can be used with

  - **12x STRADA-SQ** (up to 7070 LED packages) - for higher lumens
  - **3x STRADA-2X2** (up to 5050 LED packages) – the biggest family
  - **1x STRADA-IP-2X6** (up to 5050 LED packages) - up to IP67

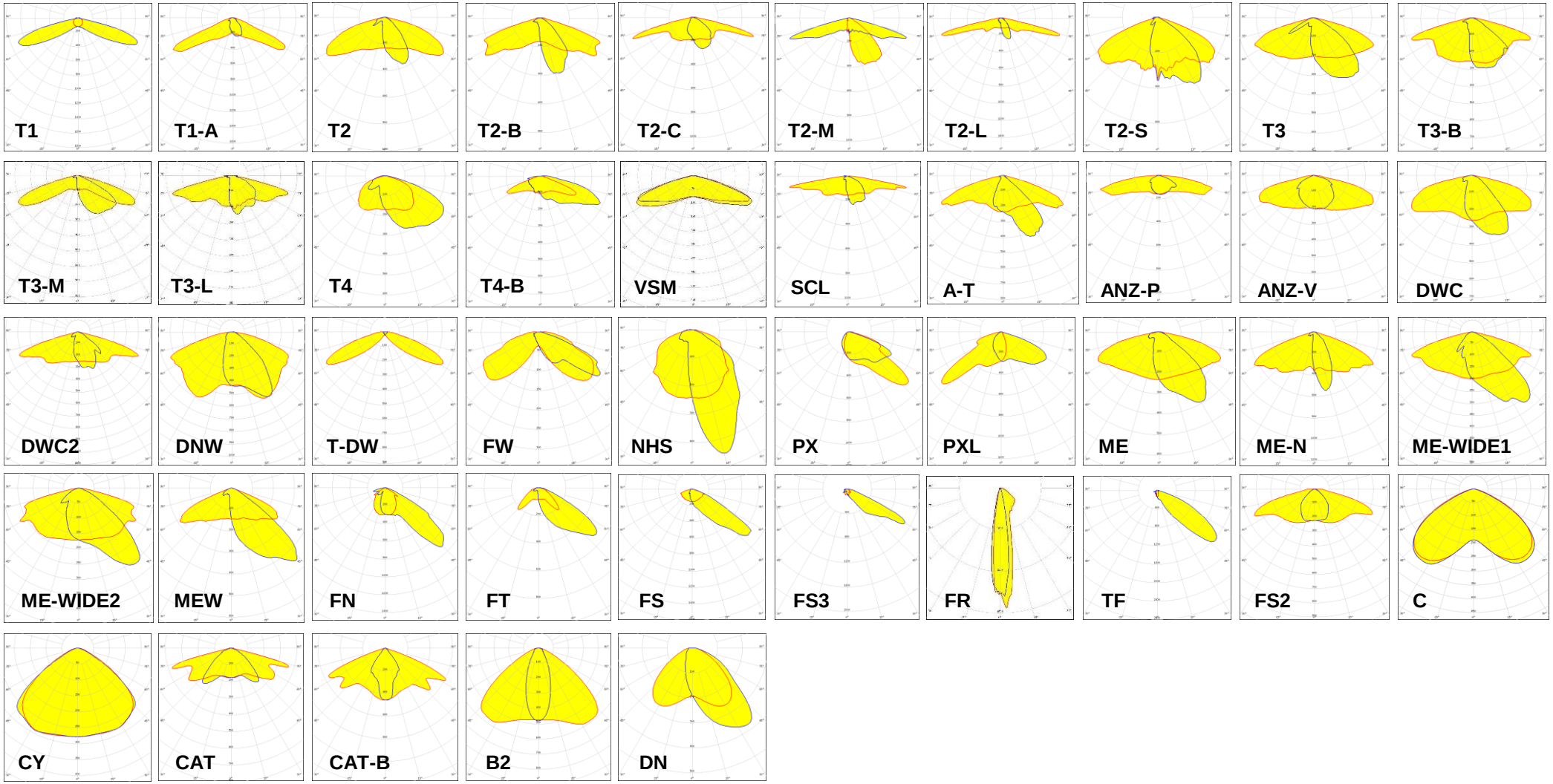
- One light engine – many lighting solutions!



Picture contains animation – go to presentation mode

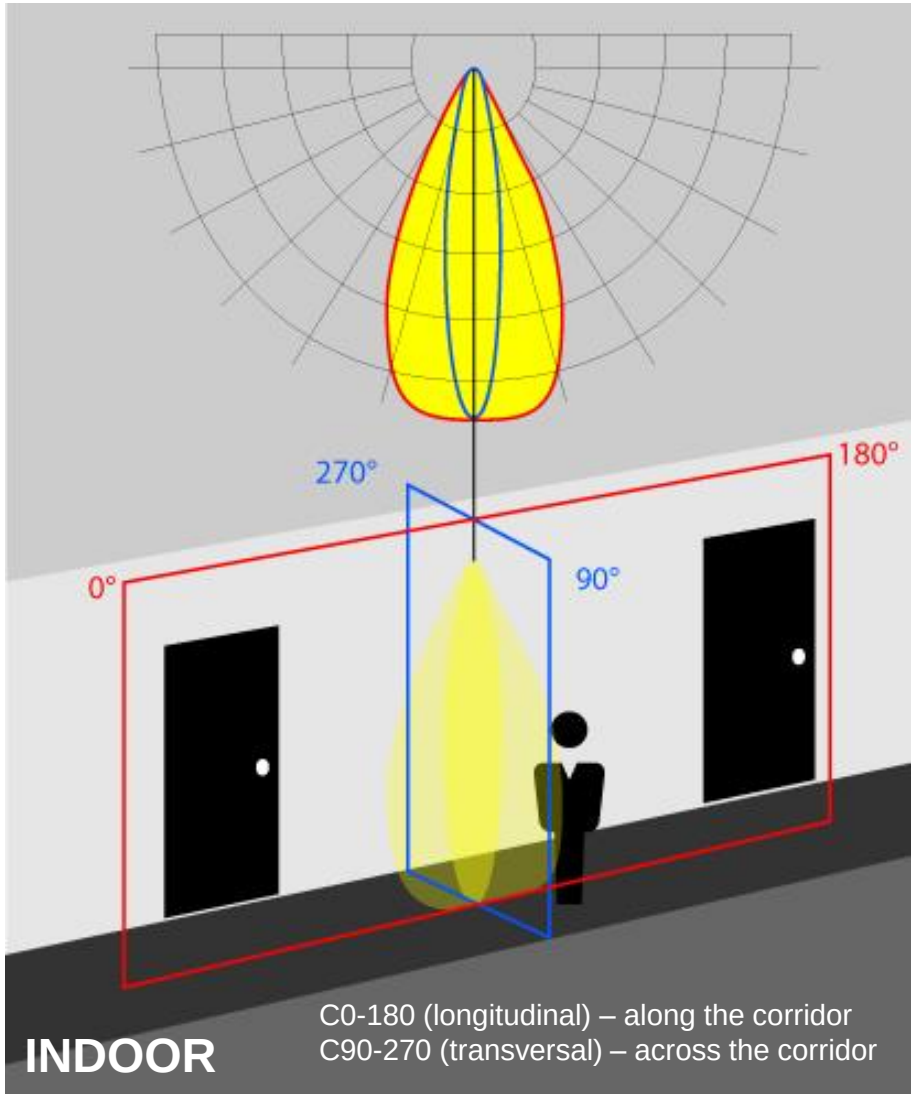
Suitable beam for any installation!

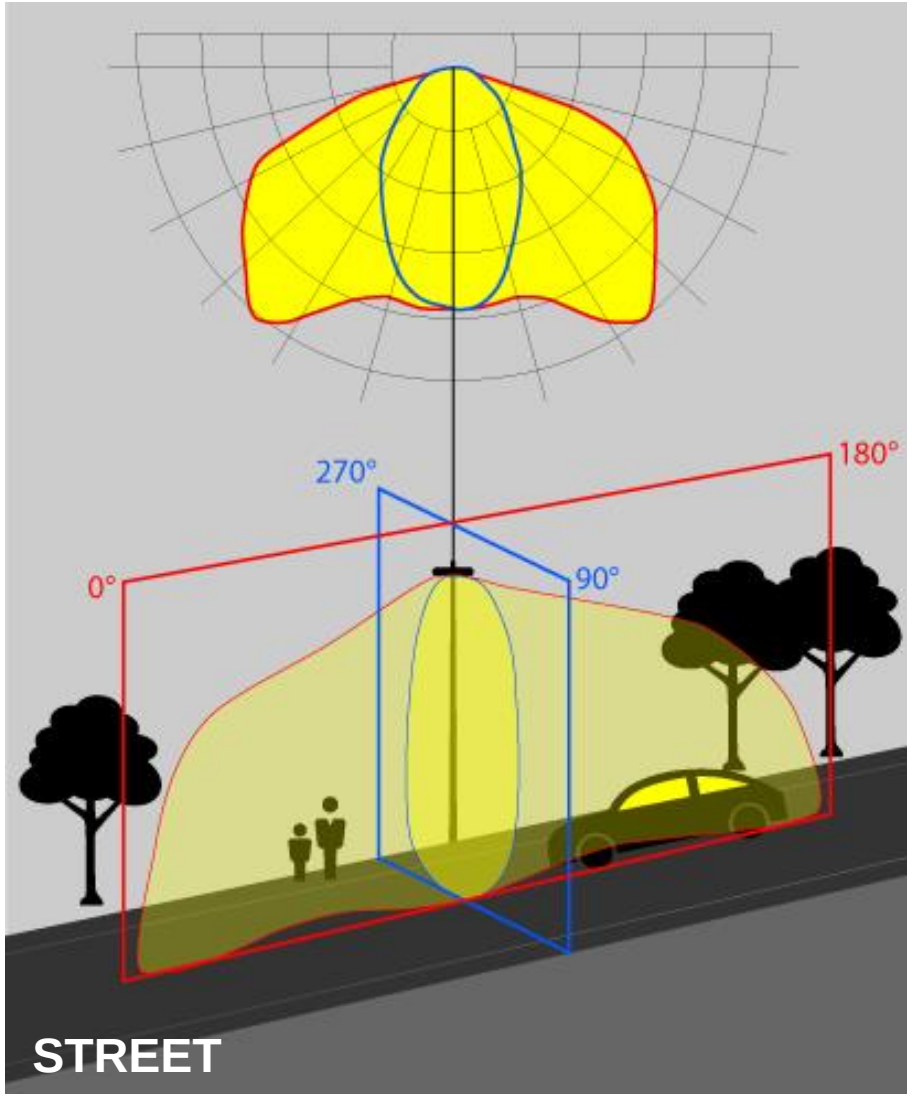
Existing street lighting beams



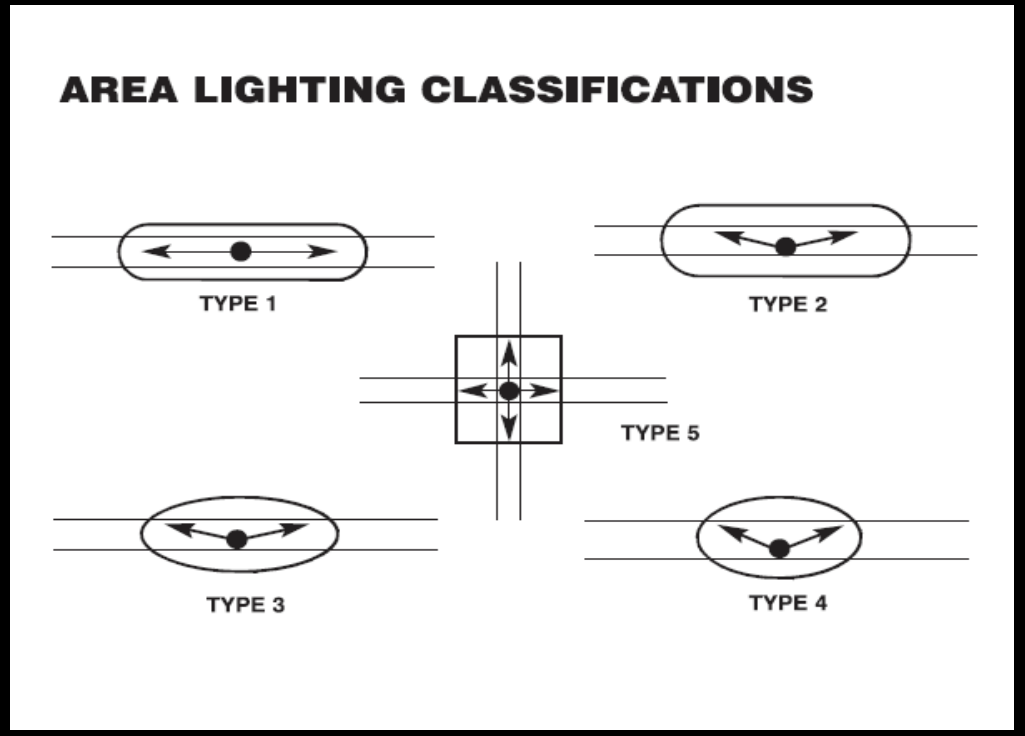
Photometrics (polar graph) – how to read?

Based on IES-files. IESNA files are read other way around.

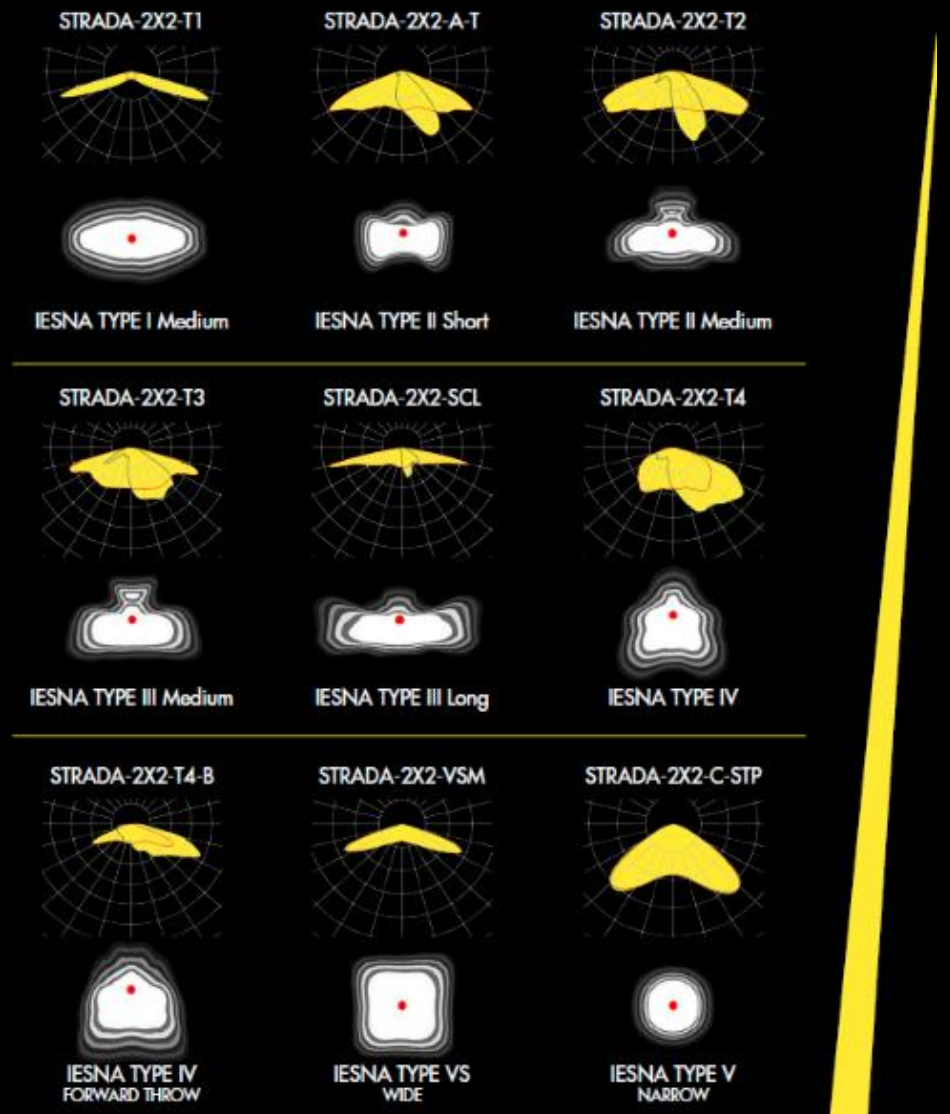




IESNA I-V



IESNA types vs road width vs mounting height	Mounting types	
	One side mounting	Both side mounting
Type I (symmetrical)	Roadways up to 2 times MH in width	
Type II	Up to 1 times MH	Up to 2 times MH
Type III	Up to 1.5 times MH	Up to 3 times MH
Type IV	Up to 2 times MH	Up to 4 times MH
Type V (symmetrical)	Up to 4 times MH in total width	



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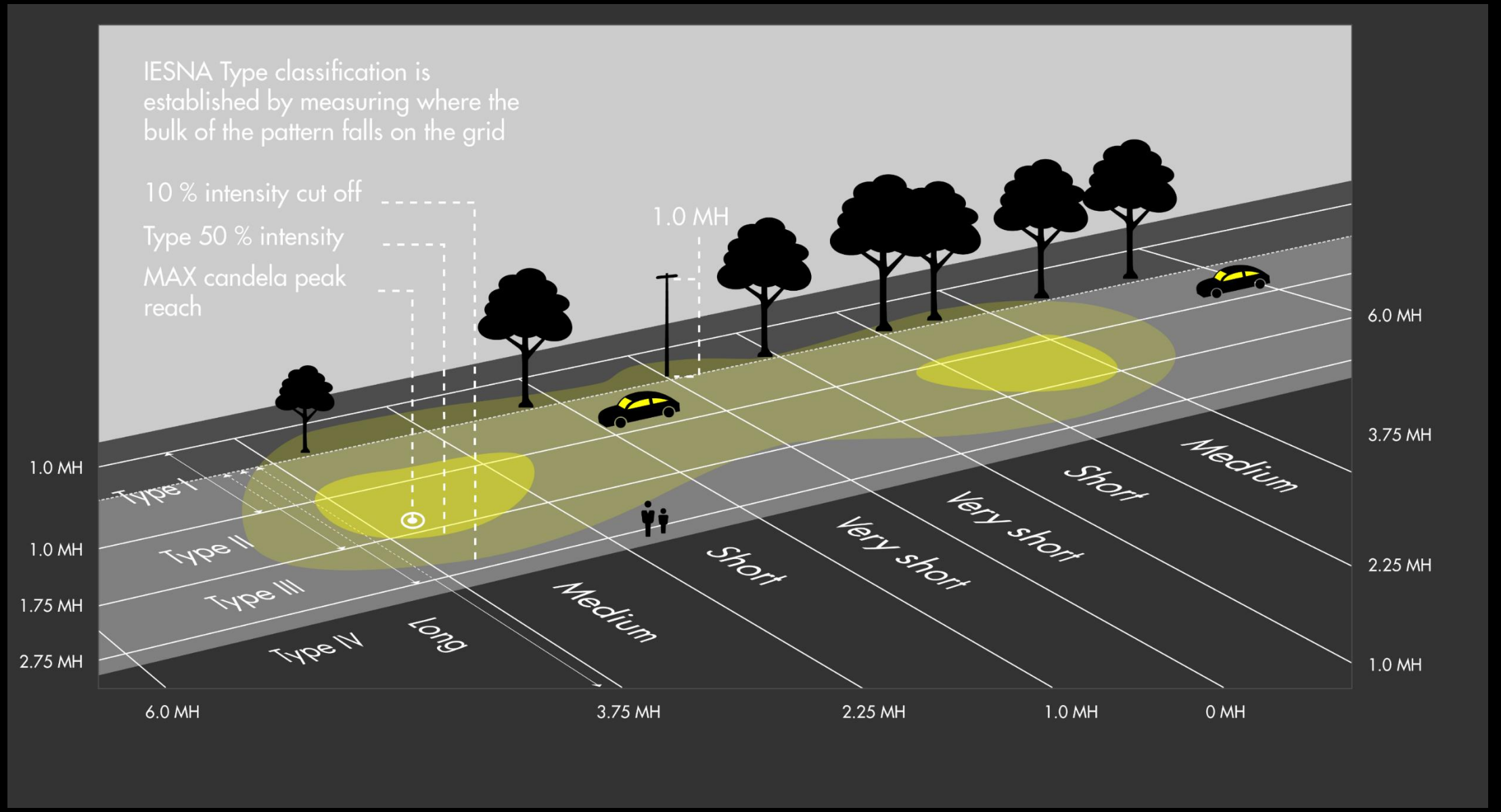
IESNA I-V

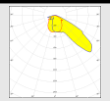
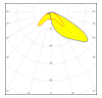
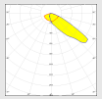
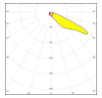
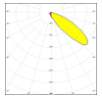
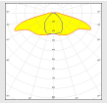
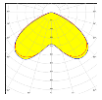
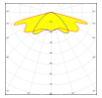
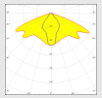
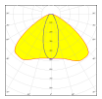
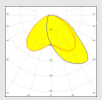
IESNA type is defined by position of highest candela intensity



LEDiL®

BEAMS	POLAR	DESCRIPTION	STRADA-SQ	STRADA-2X2	STRADA-2X2CSP	STRADA-IP-2X6	STRADA-2X2MX	STRADA-2X2MXS	STRADELLA	STRADELLA-8/9	STRADELLA-IP-28	STELLA
T1		Symmetric IESNA Type I (medium) beam for narrow roads and paths with long pole distance and tilted armature		x								
T1-A		Asymmetric IESNA Type I (short) beam. Results a Type II beam with tilted poles. Targeted for Indian market.							x	x		
T2		IESNA Type II (medium) beam, applicable for European P-class standard pedestrian lighting and M-class roads.	x	x	x	x	x	x	x	x	x	
T2-C		IESNA Type II (medium) beam with added house side backlight. Designed for tilted and long armatures		x		x (90deg turned version)						
T2-B		IESNA Type II (medium) with minimized house side backlight.	x			x						
T2-L		IESNA Type II Medium beam for long pole distances and up to 8x mounting height. Suitable for European P-class and pathway lighting.				x						
T3-L		IESNA Type III Medium beam for long pole distances and up to 8x mounting height. Suitable for European P-class and pathway lighting				x						
T2-M		IESNA Type II Medium beam with excellent back light control, illuminance uniformity and cutoff.		x								
T2-S		IESNA Type II (short) beam perfect for high or dense pole setups and European ME roads. Ideal for the US car dealership front row lighting.					x					
T3		IESNA Type III (medium) beam for roads that are equal or wider than mounting height.	x	x		x		x	x	x	x	
T3B & T3-B		IESNA Type III (medium) beam with minimized backlight	x			x						
T3-M		IESNA Type III Medium beam with excellent back light control, illuminance uniformity and cutoff		x								
T4		IESNA Type IV for wider roads and area lighting like parking lots and yards.	X (+NP)	x								x
T4-B		Wide IESNA Type IV beam with forward-throw beam for wide area lighting like parking lots.	x	x	x	x	x	x	x	x		
VSM (T5)		IESNA Type V (square) beam for wide areas such as parking lots.	x	x	x	x	x	x		x		x
A-T		Short IESNA Type II beam for narrow roads or high poles with extremely low glare.	x	x						x		

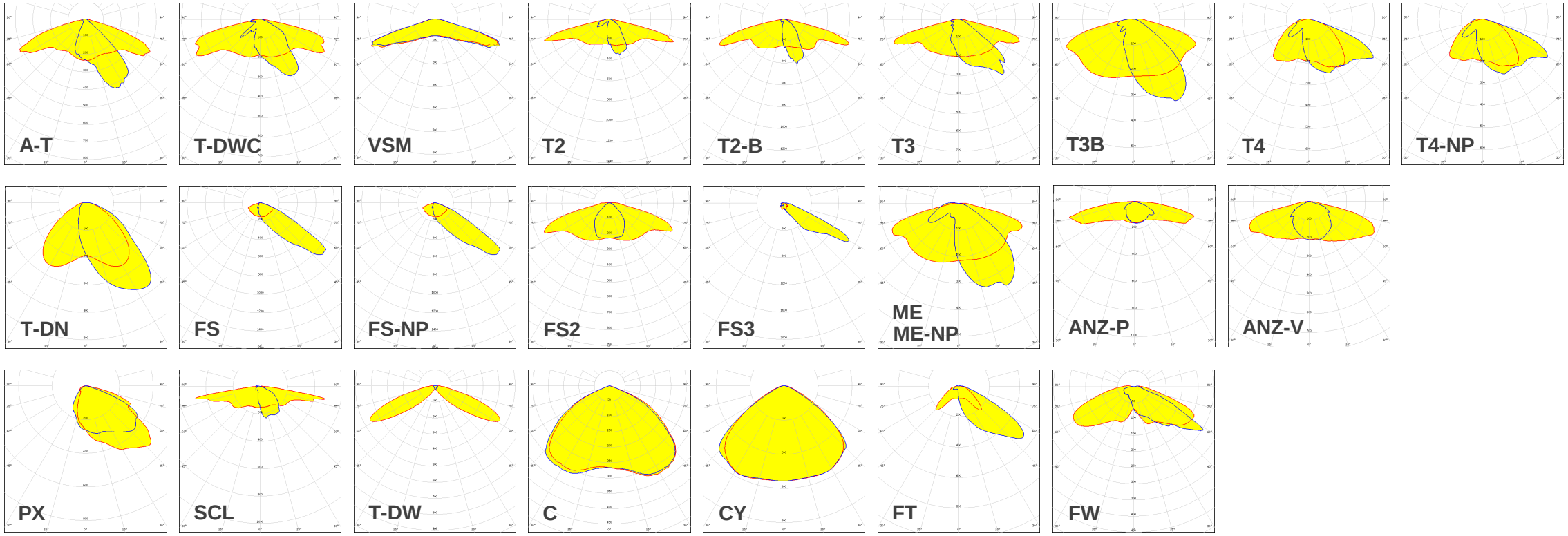
BEAMS	POLAR	DESCRIPTION	STRADA-SQ	STRADA-2X2	STRADA-2X2CSP	STRADA-IP-2X6	STRADA-2X2MX	STRADA-2X2MXS	STRADELLA	STRADELLA-8/9	STELLA
ANZ-P		Beam for pedestrian lighting (P4 & P5) in Australia and New Zealand.	x								
ANZ-V		Beam for vehicular road lighting (AS/NSZ V3) in Australia and New Zealand. Version with location pins. Assembly with installation tape.	x								
DWC/T-DWC		Universal road lighting beam with excellent mixed illuminance and luminance uniformity. (Typically IESNA Type III Medium)	x	x		X (+90 deg turned version)	x				
DWC2		Universal road lighting beam with excellent mixed illuminance and luminance uniformity. (Typically IESNA Type II Medium)						x			x
DNW		Soft wide beam with good illuminance uniformity.		x							
T-DW		Soft wide beam with good illuminance uniformity.	x								
FW		Beam with wide light distribution and good illuminance uniformity for residential street lighting & staggered pole setups.	x	x		x					
NHS		Narrow beam with minimal house side backlight.		x							
SCL		Type II/III (Long) beam for very wide pole to pole distances. Ideal for pedestrian paths and residential roads. (EN13201 P-classes)	x	x	x	x	x			x	
PX		Double asymmetric beam designed to highlight pedestrian crossings for right side traffic.	x	x		x					
PXL		Double asymmetric beam designed to highlight pedestrian crossings for left side traffic.		x							
ME		Beam with excellent longitudinal luminance uniformity fulfilling EN13201 M-class requirements where road width is equal or less the pole height.	X (+NP)	x	x	x				x	
ME-N		Beam designed for high poles and fulfilling EN13201 M-class requirements where road width is less than the pole height.		x						x	
ME-WIDE1		Beam with excellent longitudinal luminance uniformity fulfilling EN13201 M-class requirements where road width is equal to or less than the pole height. Added house-side backlight.		x							
ME-WIDE2		Beam with excellent longitudinal luminance uniformity for staggered pole setups fulfilling EN13201 M-class requirements where road width is equal to or less than the pole height		x							
MEW		Beam with extremely low glare fulfilling EN13201 M-class requirements for wet road surfaces in North Europe		x							

BEAMS	POLAR	DESCRIPTION	STRADA-SQ	STRADA-2X2	STRADA-2X2CSP	STRADA-IP-2X6	STRADA-2X2MX	STRADELLA	STRADELLA-8/9	STELLA
FN		Narrow forward throw beam for area lighting. Excellent for lighting stadiums and airport fields.		x						
FT		Forward throw beam for area lighting.	x							
FS		Forward throw beam for area lighting.	x							
FS3		Forward throw beam optimized for European tunnels, resulting extremely efficient lighting with counter-beam method.	x	x						
FR		Asymmetric spotlight beam for floodlighting railway tracks according to Russian normative		x						
TF		Narrow forward throw beam optimized for European tunnels.		x						
FS2		Beam for symmetrical tunnel lighting and parking garages. Ideal for catenary street lighting.	x							
C		Beam for area and street lighting such as parks and pedestrian walkways.	x	x						
CY		Beam for canopy lighting with batwing light distribution. Suitable for symmetrical tunnel lighting.	x	x				x		
CAT		Caternary street light beam optimized for EN13201 M-classes.		x						
CAT-B		Narrow caternary street light beam optimized for EN13201 M-classes and tilted poles		x						
B2		Beam for area lighting and applications demanding a wide oval beam pattern		x						
DN/T-DN		Beam for area lighting with shorter illumination distances	x	x						

STRADA-SQ

25 x 25 mm single lens family

- Compatible with up to 7070 size LED packages (typically optimized for Luxeon M size)
- Versions with an adhesive tape or without
- Normally used with a protective cover
- For street lighting and many other applications



HB-SQ

25 x 25 mm single lens

- Normally used with a protective cover

Features

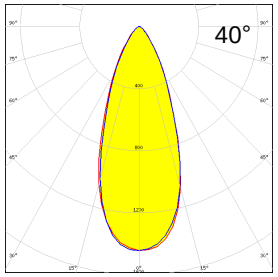
- 25 x 25 mm, H 12.9 mm
- Versions with an adhesive tape or without

Typical Applications

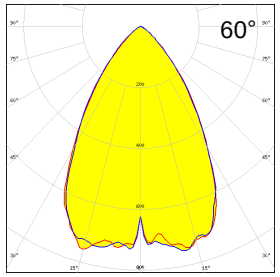
- Industrial and technical lighting
- Downlight

Compatibility

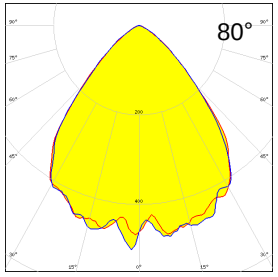
- Up to 7070 size LED packages
- Typically optimized for Luxeon M size



C12767_HB-SQ-A



C16369_HB-SQ-W
CA16370_HB-SQ-W



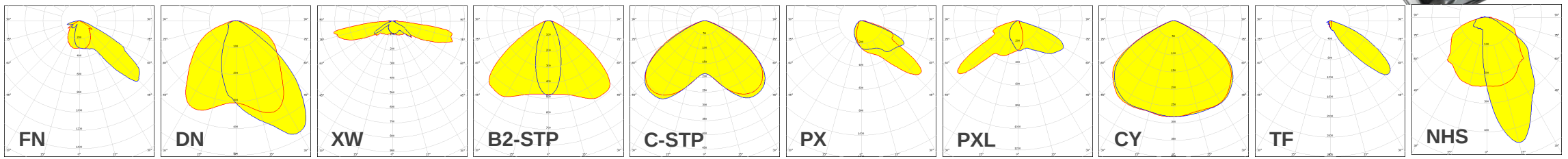
C16371_HB-SQ-WWW
CA16372_HB-SQ-WWW

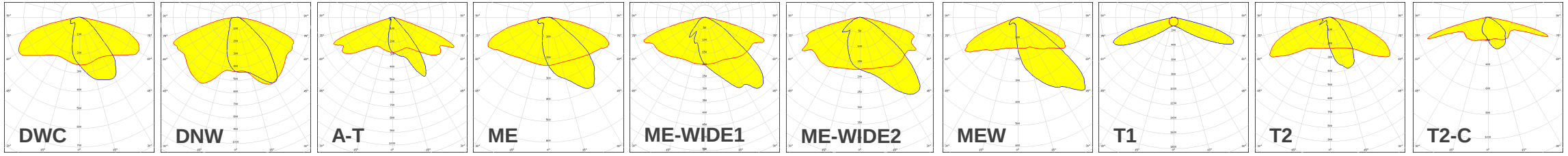
LEDiL®

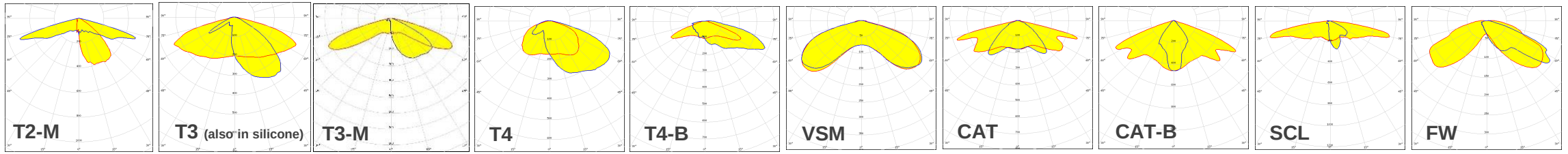
STRADA-2X2

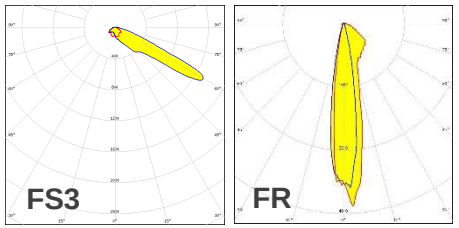
50 x 50 mm industry standard family

- Compatible with up to 5050 size LED packages
- Screw mounted from the middle
- Normally used with a protective cover









LEDiL®

HB-2X2

Easy industrial lighting

- Industry's standard 50 x 50 mm 2X2 footprint
- Normally used with a protective cover
- Designed for DLC compliant high bay applications

Features

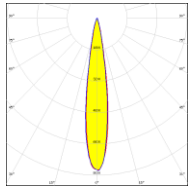
- 50 x 50 mm
- Screw mounted from the middle
- The wider the beam, the lower the luminaire can be mounted
- Over 90% optical efficiency

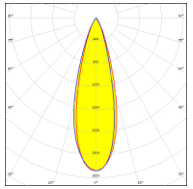
Typical Applications

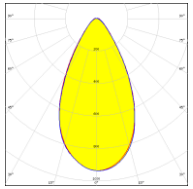
- Indoor architectural
- General lighting
- High bay applications where the mounting height is usually over 10 m

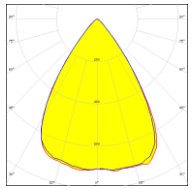
Compatibility

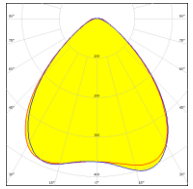
- Compatible with up to 5050 size LED packages

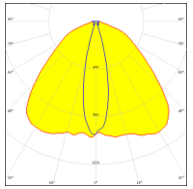

C14541_HB-2x2-RS

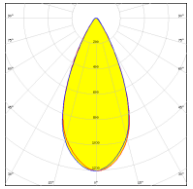

C13233_HB-2x2-M

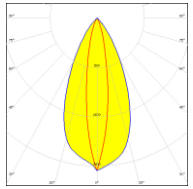

C12361_HB-2X2-W


C13232_HB-2X2-WW


C14724_HB-2X2-WWW


C13749_HB-2X2-O


C13605_HB-2x2-RW

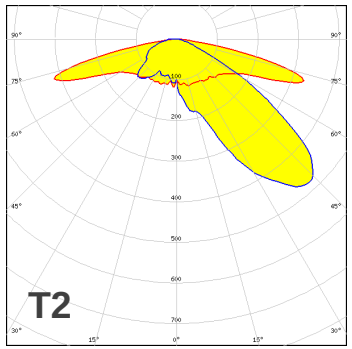

C15925_HB-2X2-ON

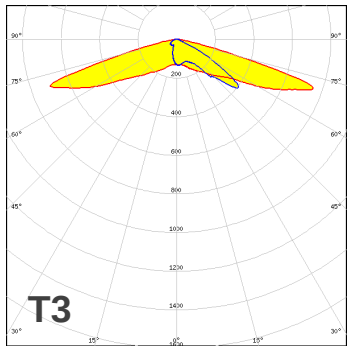
NEW

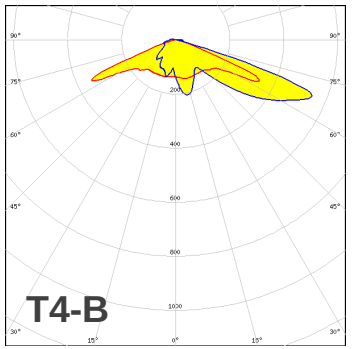
STRADA-2X2CSP

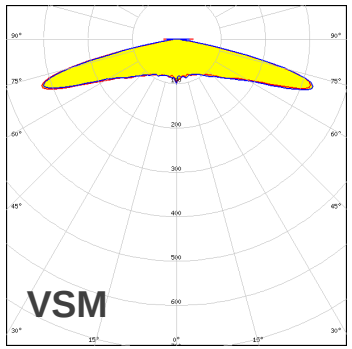
50 x 50 mm industry standard family

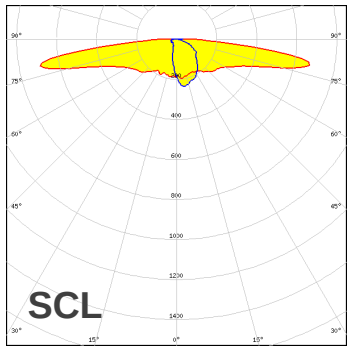
- Range of lenses for a new category of CSP (Chip Scale Package) LEDs without the package
- Same footprint as in LEDiL standard STRADA-2X2
- Optimized for HP CSPs

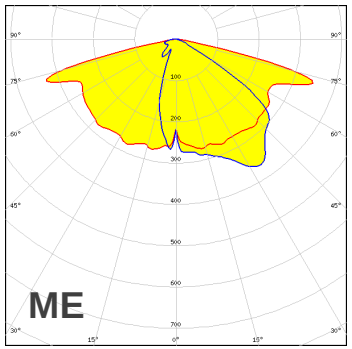


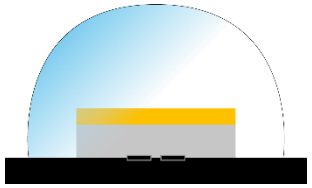












Conventional HP LED emits only from topside

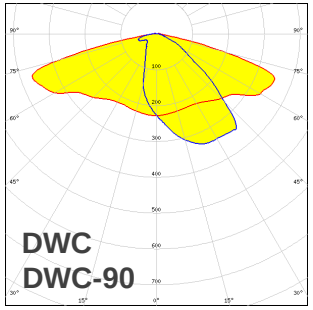
CSP LED type with five light emitting sides (e.g. Seoul Y22)

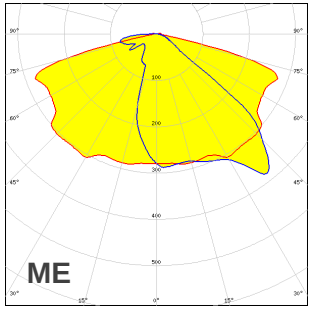
CSP LED with reflective side surfaces emits light only from topside (e.g. Nichia E21)

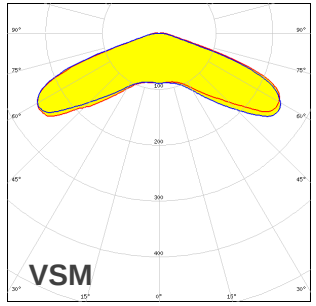
STRADA-IP-2X6

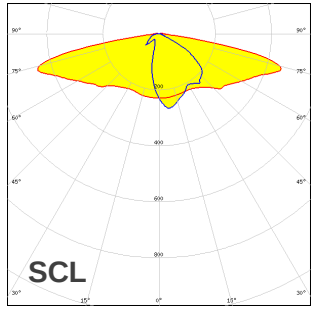
173 x 71.4 mm up to IP67 family

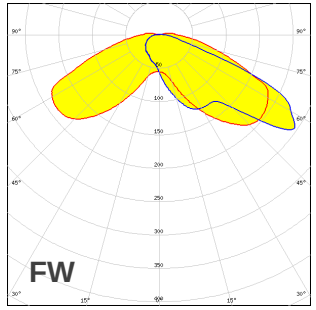
- Compatible with up to 5050 size LED packages
- Comes with a silicone seal and designed to be used without protective glass
- Mounted with 8 screws and contain pockets for connectors, screws & other components
- For street lighting and many other applications

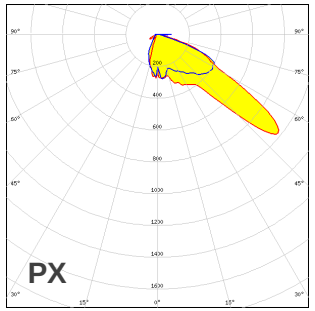


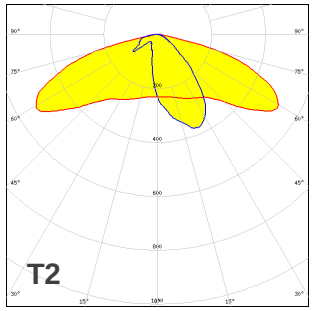


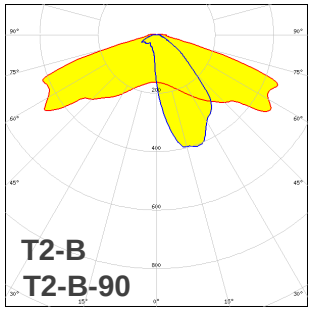


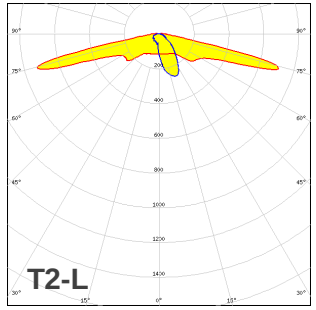


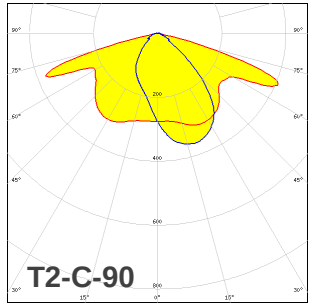


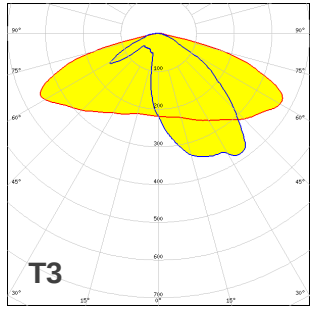


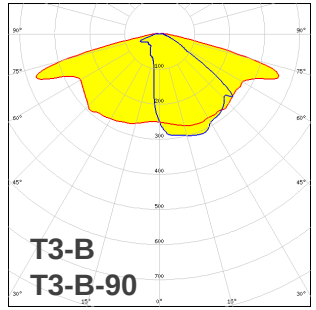


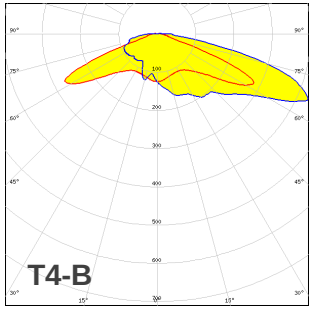












HB-IP-2X6

Up to IP67 industrial lighting in a standardized 2X6 form factor

- All modules are protected from dirt and water up to IP67
- Comes with a silicone seal and designed to be used without protective glass
- Beams for high, low and mid-bay lighting

Features

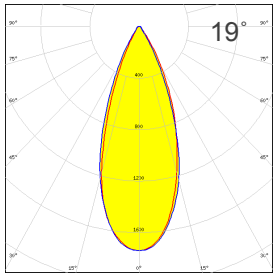
- 173 x 71.4 mm
- Made from PMMA and PC
- Mounted with 8 screws + PCB screws and contains pockets for connectors, screws & other components

Typical Applications

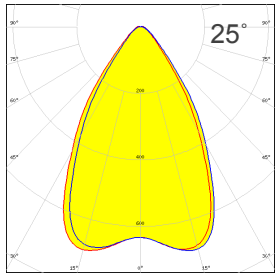
- Industrial lighting
- High, low, mid-bay
- Aisle lighting
- Warehouses

Compatibility

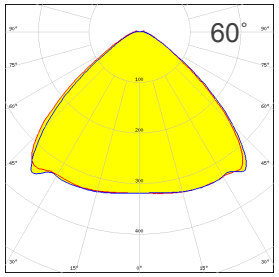
- Compatible with up to 5050 size LED packages



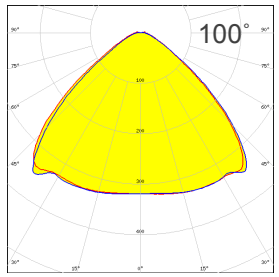
CS14895_HB-IP-2X6-RS



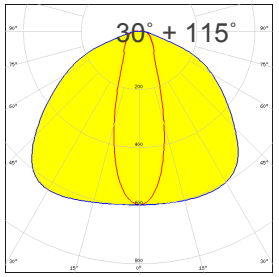
CS14891_HB-IP-2X6-M



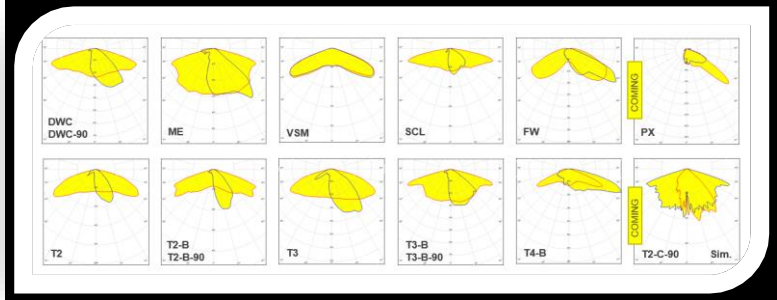
CS14130_HB-IP-2X6-W



CS14263_HB-IP-2X6-WWW



CS14597_HB-IP-2X6-O



NEW

HB-IP-2X6-G2

Cost effective version of HB-IP-2X6 optimized for 5050 LED packages

- Mechanically compatible with LEDIL IP-2X6 series
- Level of ingress protection to be confirmed, targeted for up to IP67
- Excellent cutoff and light control

Features

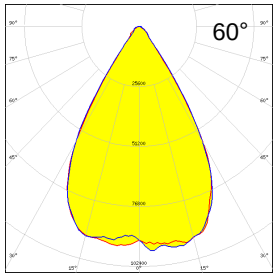
- 173 x 71.4 mm
- Made from PMMA
- Comes with a silicone seal
- Mounted with 8 screws
- Contain pockets for connectors, PCB screws & other components
- Typical light output up to 8000 lm

Typical Applications

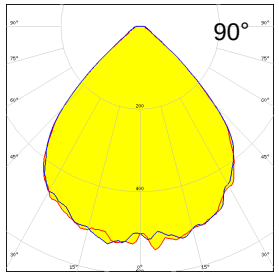
- Industrial lighting
- High bay
- Flood light

Compatibility

- Optimized for flat high power 5050 size LED packages
- Compatible with up to 5050 size LED packages



CS16511_HB-IP-2X6-G2-W



CS16593_HB-IP-2X6-G2-WWW

DOWN LIGHT

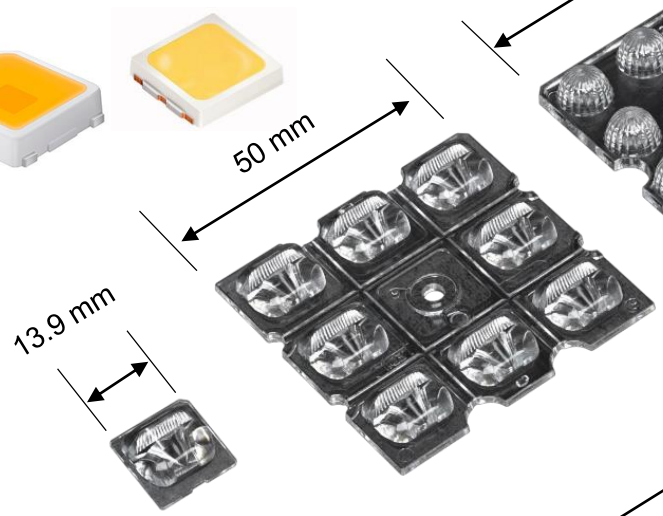
LEDiL®

STRADELLA FAMILY

From single lens towards 28-module

Mid power LED
up to 3535 size range

Samsung LM302B
Samsung LM301B
Osram Duris S5
Luxeon 3030 2D



STRADELLA

STRADELLA-8

STRADELLA-16

STRADELLA-IP-28

High power LED
3535 size range

Cree XP-G3
Cree XT-E
Samsung LH351B
Osram Oslon SQ

LEDiL®

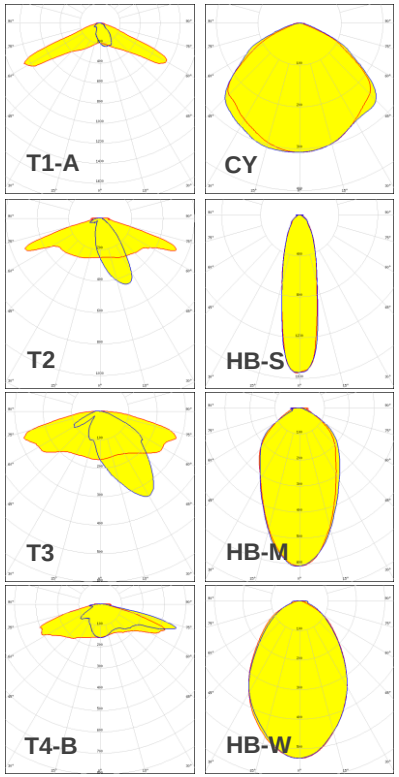
+HV – High Voltage variant availabe in the addition to normal variant
+PC – PC variant available globally

STRADELLA family

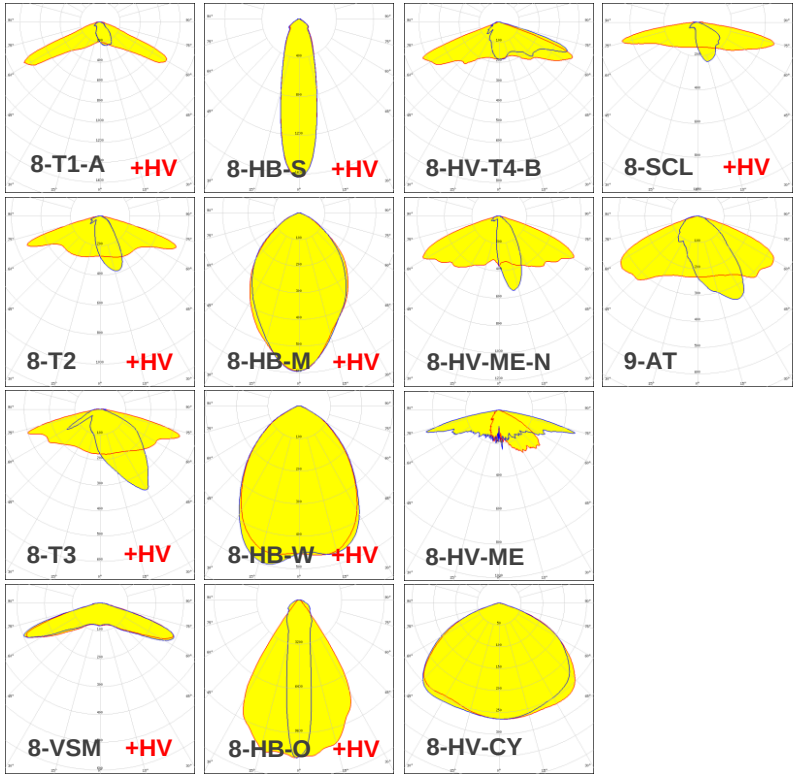
High density street optics ideal for mid-power LEDs

- Compatible with mid-power LEDs (2835, 3030 and 3535)
- Wide range of 8- and 16-up variants in a standardized 50 x 50 mm footprint; also single versions
- **COMING:** 100 x 100 mm 28-up module and 50 x 50 mm 16-up module with up to IP67 ingress protection available in PMMA and PC

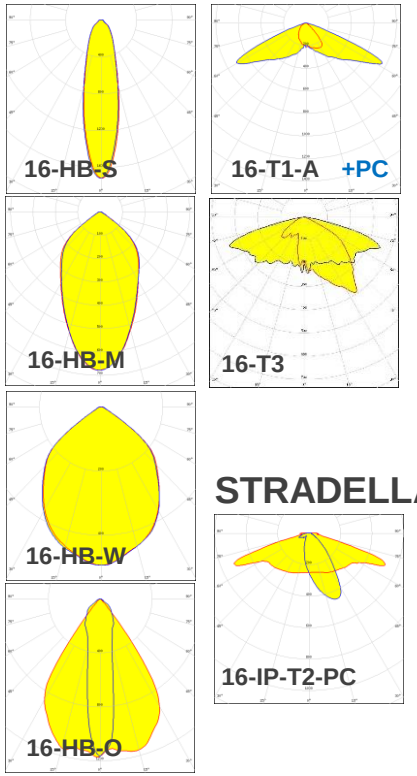
STRADELLA



STRADELLA-8 & -9

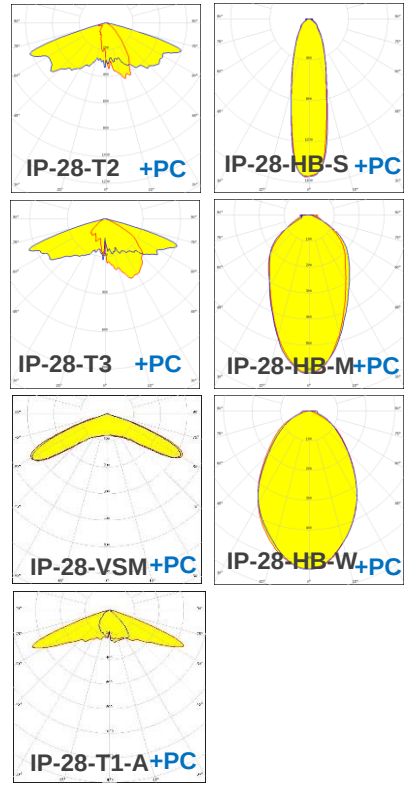


STRADELLA-16



STRADELLA-IP-16

STRADELLA-IP-28



NEW

STRADELLA-IP-28

Up to IP67 100 x 100 mm modules for up to 3535 LEDs in PMMA or PC

- Up to IP67 modules with an integrated silicone gasket and a big pocket for connectors
- Range of street and high bay beams available globally in PMMA and PC
- Works with up to 3535 size mid and high power LEDs; HB versions work also with CSP LEDs

Features

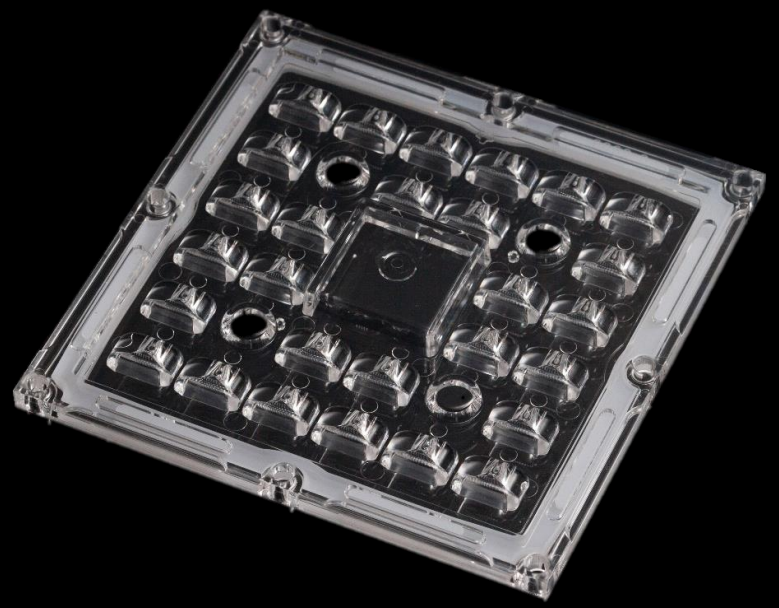
- 100 x 100 mm module with very high optic density
- Up to IP67 ingress protection
- Comes with an integrated silicone gasket
- Available in PMMA and PC
- Pockets for connectors and wires
- Fixing with 8 pcs of M3 screws
- Over 8000 lm typical output with 3535 HP LEDs at 700 mA and 2800–4000 lm with 3030 midpower LEDs

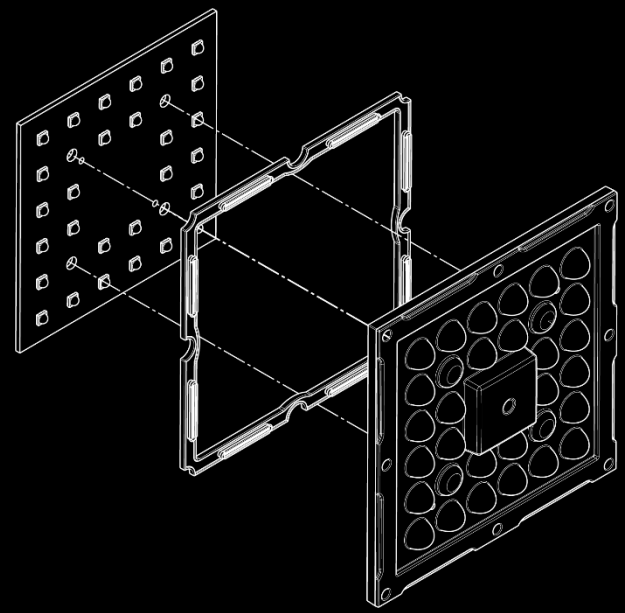
Typical Applications

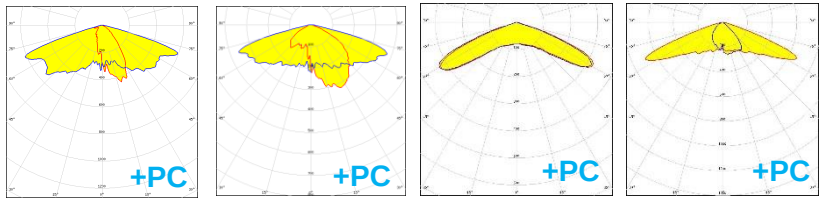
- Street lighting
- High bay

Compatibility

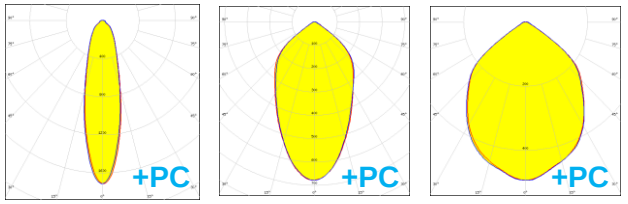
- Up to 3535 HP and MP LEDs
- HB beams work with CSP LEDs







CS16034_STRADELLA-IP-28-T2 | CS16102_STRADELLA-IP-28-T3 | CS16577_STRADELLA-IP-28-VSM | CS16575_STRADELLA-IP-28-T1-A



CS16322_STRADELLA-IP-28-HB-S | CS16323_STRADELLA-IP-28-HB-M | CS16324_STRADELLA-IP-28-HB-W

NEW

STRADELLA-IP-16

Up to IP67 100 x 60 mm modules for up to 3535 LEDs in PMMA & PC

- Compact up to IP67 modules with an integrated silicone gasket
- Works with up to 3535 size mid- and high power LEDs
- Allows high lumen density designs and cost/efficacy optimization compared to typical size lens arrays

Features

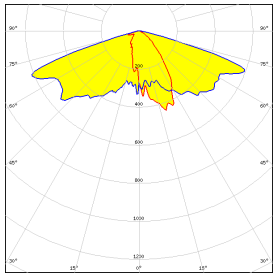
- 100 x 60 mm
- Up to IP67 ingress protection
- Comes with an integrated silicone gasket
- Fixing with 6 pcs of M3 screws
- Typical light output with HP LEDs (4500 lm at 700 mA)

Typical Applications

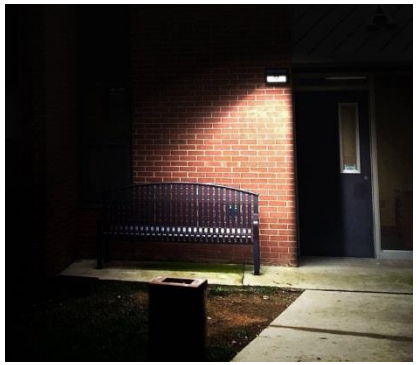
- Street lighting
- Outdoor lighting

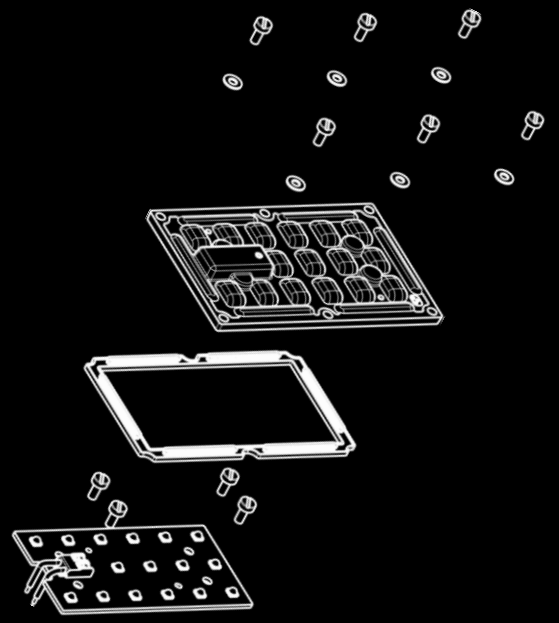
Compatibility

- Compatible with up to 3535 mid and high power LEDs



CP16163_STRADELLA-IP-16-T2-PC





STRADELLA-16

50 x 50 mm 16-up module for mid-power LEDs

- Addition to industry standard 50 x 50 mm platform for mid-power LEDs
- Allows typical and high density light output in industry standard size
- Mid-power LEDs help to reach high efficacy and low system cost

Features

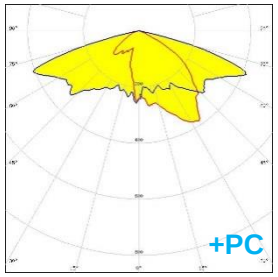
- 49.5 x 49.5 mm
- Screw mounted from the middle
- Designed to be used with a protective cover
- Other beams planned: T2, T4-B, SCL, VSM, ME

Typical Applications

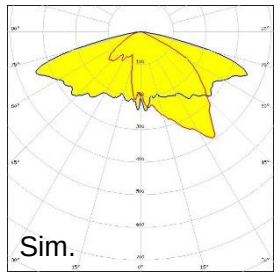
- Street lighting
- Area lighting

Compatibility

- Up to 3535 size mid-power LEDs
- Thermal management must be carefully designed if used with high-power LEDs



C16220_STRADELLA-16-T1-A



C16503_STRADELLA-16-T3

LEDiL®

NEW

SITARA

New cost-effective street lighting family from PC for flat high-power 5050 size LED packages

- 2X2-modules with an integrated silicone gasket for up to IP67 ingress protection
- Single lenses (18 x 18 mm) with positioning pins intended to be glued
- Optimized for 5050 size flat SMD LED packages

Features

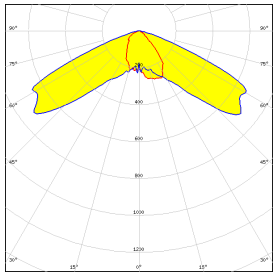
- 18 x 18 mm and 50 x 50 mm
- 50 x 50 mm modules come with an integrated silicone gasket for up to IP67 protection
- Made from polycarbonate (PC)
- First versions to be released (T1-A and T2) are suitable for Indian type A & B roads and compliant with EESL tenders
- T1-A = IESNA T1 short, T2 = IESNA T2 short

Typical Applications

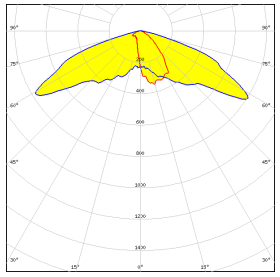
- Street lighting
- T1-A – for tilted poles (5-15˚boom angle)
- T2 – for non-tilted poles

Compatibility

- Optimized for flat high-power 5050 size LED packages (Duris S8, Luxeon5050, Cree MHB etc.)



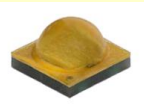
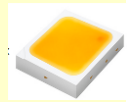
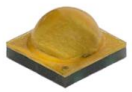
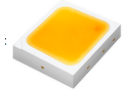
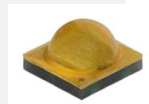
C16373_SITARA-T1-A
CP16514_SITARA-2X2-T1-A



C16374_SITARA-T2
CP16515_SITARA-2X2-T2

Freedom of design

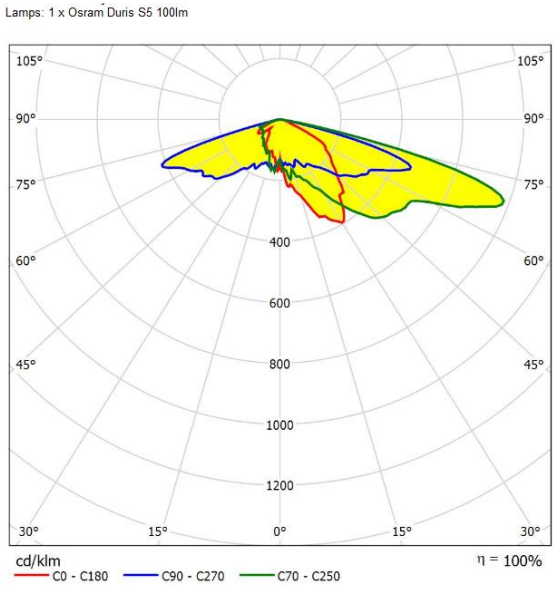
50 x 50 lens comparison: standard power density regardless of the LED allowing easy cost or efficacy optimization

	STRADA-2X2	STRADELLA-8	STRADELLA-16
POWERFUL • Thermally challenging • Space saver • Cost optimization	5050 HP 700 mA: 600 lm x 4 = 2400 lm Lm density: **960 lm/cm2** 	3535 HP 700 mA: 300 lm x 8 = 2400 lm Lm density: **960 lm/cm2** 	MP 2 chip: 140 lm x 16 = 2240 lm Lm density: **896 lm/cm2** 
TYPICAL • Thermally easy • Generally accepted market standard	**3535 HP 700 mA:** 300 lm x 4 = 1200 lm Lm density: **480 lm/cm2** 	**MP 2 chip:** 140 lm x 8 = 1120 lm Lm density: **448 lm/cm2** 	**MP 1 chip:** 70 lm x 16 = 1120 lm Lm density: **448 lm/cm2** 
NOT FEASIBLE • Too low or high density	MP 2 chip : 140 lm x 4 = 560 lm Lm density: **224 lm/cm2** 	MP 1 chip: 70 lm x 8 = 560 lm Lm density: **224 lm/cm2** 	3535 HP 700 mA: 4800 lm Too powerful/hot? 

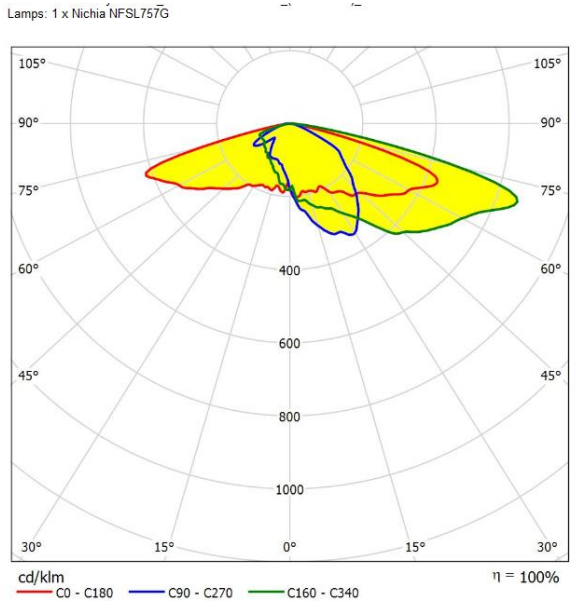
STRADELLA-8-T3 MP vs HP

Slightly different light distribution if using 1 or 2 chip MP or HP LEDs

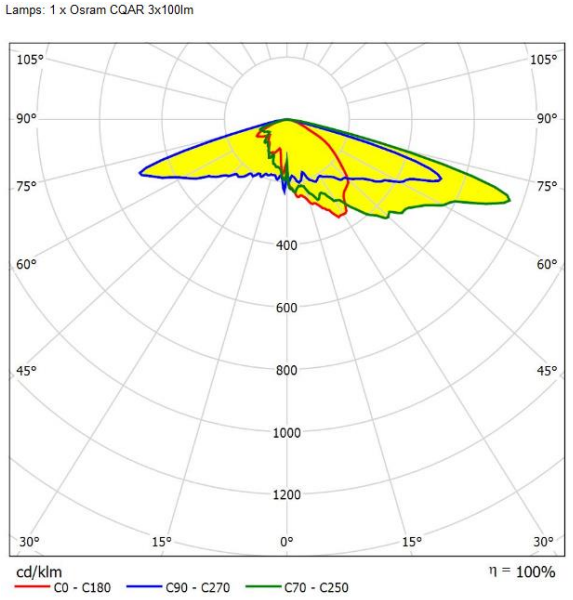
Duris S5 (2 chip MP 3030)



(1 chip MP 3030)



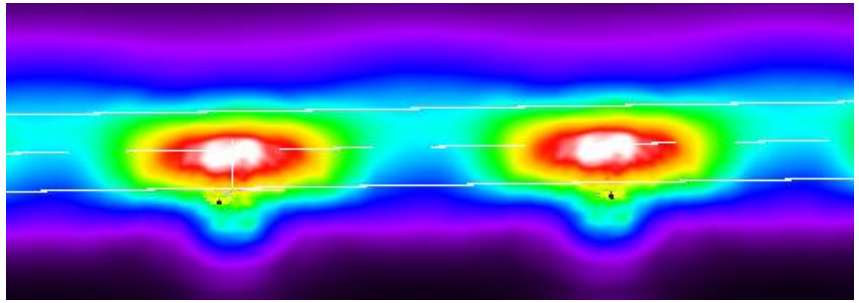
Oslon SQ (HP 3535)



STRADELLA-8-T3 MP vs HP

Both scenarios have similar performance

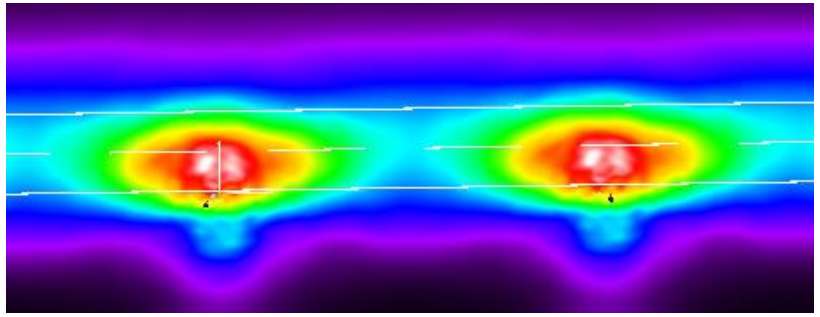
Duris S5 (2chip 3030)



L_{av} [cd/m²]	U0	UI	TI [%]	SR
0.90	0.44	0.71	14	0.50
≥ 0.75	≥ 0.40	≥ 0.60	≤ 15	≥ 0.50
✓	✓	✓	✓	✓

48 MP LEDs and 6 lens modules needed

Oslon SQ (HP 3535)



L_{av} [cd/m²]	U0	UI	TI [%]	SR
0.87	0.41	0.63	15	0.54
≥ 0.75	≥ 0.40	≥ 0.60	≤ 15	≥ 0.50
✓	✓	✓	✓	✓

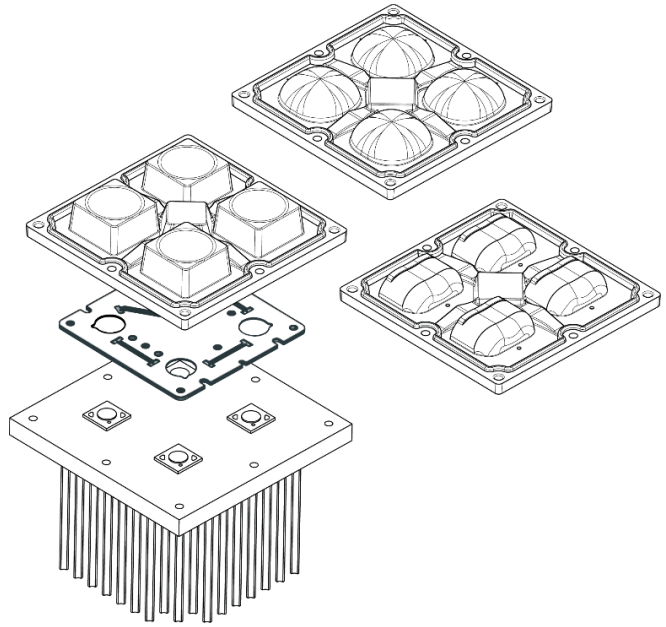
24 HP LEDs needed and 3 lens modules needed

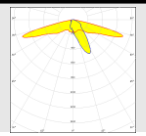
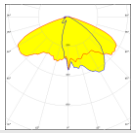
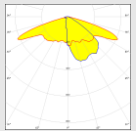
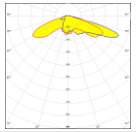
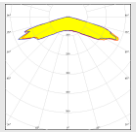
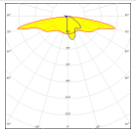
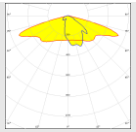
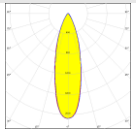
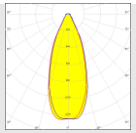
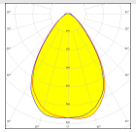
M4 (ME4a) class 6000 lm
H: 8 m, W: 7 m, pd: 32 m, boom: 0 deg, overhang: -0.5 m, R3 coating

2X2MX®

Street & high bay beams in PMMA & silicone

- Compatible with ultra-high-power LEDs up to 7070 package sizes
- Both PMMA and silicone versions provide up to IP67
- Modular structure enables wide compatibility and easy modification



BEAM	POLAR	2X2MX-8	2X2MXS	HB-2X2MX-8	HB-2X2MXS
T2		X	X		
T2-S		X			
T3/DWC		X DWC	X T3		
T4-B		X	X		
VSM		X	X		
SCL		X			
DWC2			X		
M				X	X
W / WW				X W (60)	X WW (70)
WWW				X	X

STELLA

Ø90 mm up to IP67 family from silicone

- Self-sealing silicone lenses for up to IP67 ingress protection against dirt, dust and water
- Excellent thermal, UV and impact resistance
- STELLA-G2: Same footprint but with more space inside fitting Ø50 mm connectors with up to 5.9 mm height

Features

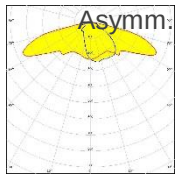
- Ø90 mm, H: 11.3–26.9 mm, G2-T4: 45.15 mm
- Maximum connector size Ø50 x 6.2 mm (check mechanical compatibility from 2D files)
- Available with either black or white mounting frame

Typical Applications

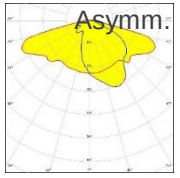
- Street lighting
- Area lighting
- High bay

Compatibility

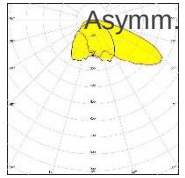
- Asymmetrical beams compatible with up to 23 mm LES sizes
- Symmetric with up to 30 mm LES sizes
- STELLA-G2: Compatible with connectors from B+W, BJB, TE, IDEAL (Ø50 mm and up to 5.9 mm height



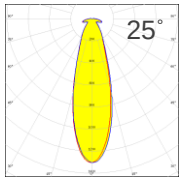
FN16356_STELLA-G2-T2



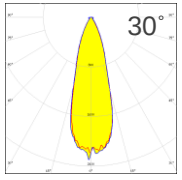
FN16441_STELLA-G2-T3



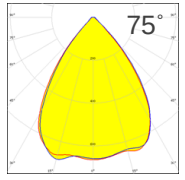
FN16358_STELLA-G2-T4
FN14645_STELLA-T4



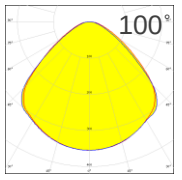
FN14720_STELLA-FRESNEL



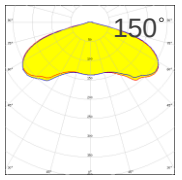
FN16258_STELLA-RS



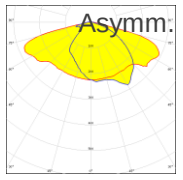
FN14074_STELLA-HB



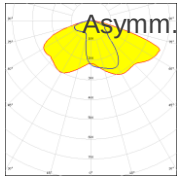
FN15264_STELLA-HB-WWW



FN15379_STELLA-VSM
FN16443_STELLA-G2-VSM



FN14976_STELLA-DWC2



FN13323_STELLA-A

NEW

STELLA-G2

2nd generation STELLA optics fitting Ø50 mm connectors

- Same footprint as the original STELLA with more space for Zhaga compliant COB connectors
- Self-sealing silicone lenses for up to IP67 ingress protection with high thermal and UV resistance

Features

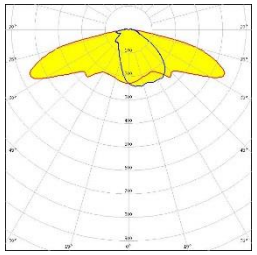
- Ø90 mm, H: **G2-T2:** 26.5, **G2-T3:** 40.2, **G2-T4:** 45.15 mm, **G2-VSM:** 25.6 mm
- Self-sealing silicone design for up to IP67
- High thermal and UV resistance
- LED position in the middle (vs STELLA-T4 where LED is off-centered)

Typical Applications

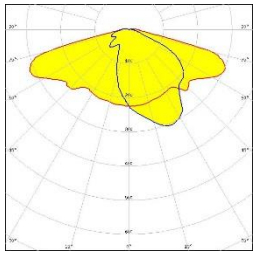
- Street lighting
- Area and parking lot

Compatibility

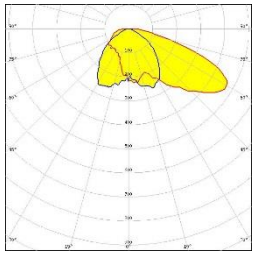
- Optimized for up to 23 mm and supports up to 30 mm LES size COBs
- Compatible with connectors from B+W, BJB, TE and Stucchi (Ø50 mm and up to 5.9 mm height)



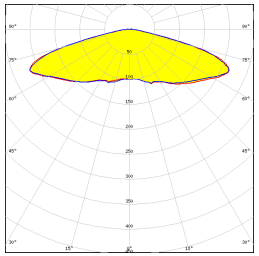
FN16356_STELLA-G2-T2



FN16441_STELLA-G2-T3



FN16358_STELLA-G2-T4



FN16443_STELLA-G2-VSM

NEW

JENNY

Symmetrical & asymmetrical beams from silicone for sports field & area lighting

- Silicone lenses made for extreme conditions – superior heat and UV-radiation resistance
- Ideal for sport field lighting with ultra high-power LEDs or CSP clusters
- FIFA Class lighting requirements can be met

Features

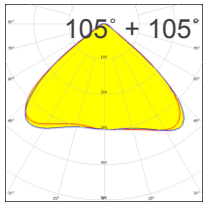
- 35 x 35 mm
- Excellent thermal withstanding
- Easy to achieve ingress protected luminaire design by using glue for installation
- Lens heights from only 13.4 to 15 mm
- Symmetrical beam angles NEMA 3, 4 and 5

Typical Applications

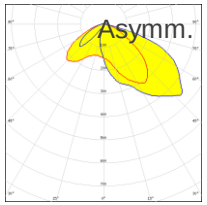
- Indoor and outdoor area lighting
- Sports field and stadium lighting
- High mast applications
- Canopy lighting

Compatibility

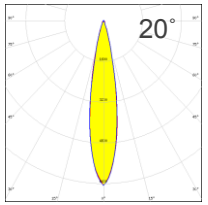
- CSP clusters
- Up to 7070 size LED packages (including 5050 and 7070 versions without dome)
- For small and mid-size COBs (-CY & -T4)



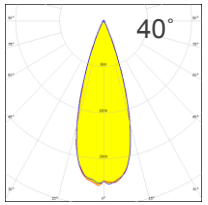
F14531_JENNY-CY
F15382_JENNY-CY-G2
F14325_JENNY-8X1-CY
F15386_JENNY-8X1-CY-G2



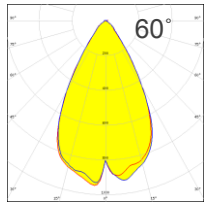
F14563_JENNY-T4
F15383_JENNY-T4-G2
F14326_JENNY-8X1-T4
F15384_JENNY-8X1-T4-G2



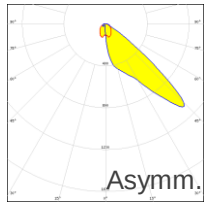
F15538_JENNY-20
F15553_JENNY-8X1-20



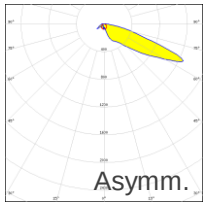
F15539_JENNY-40
F15554_JENNY-8X1-40



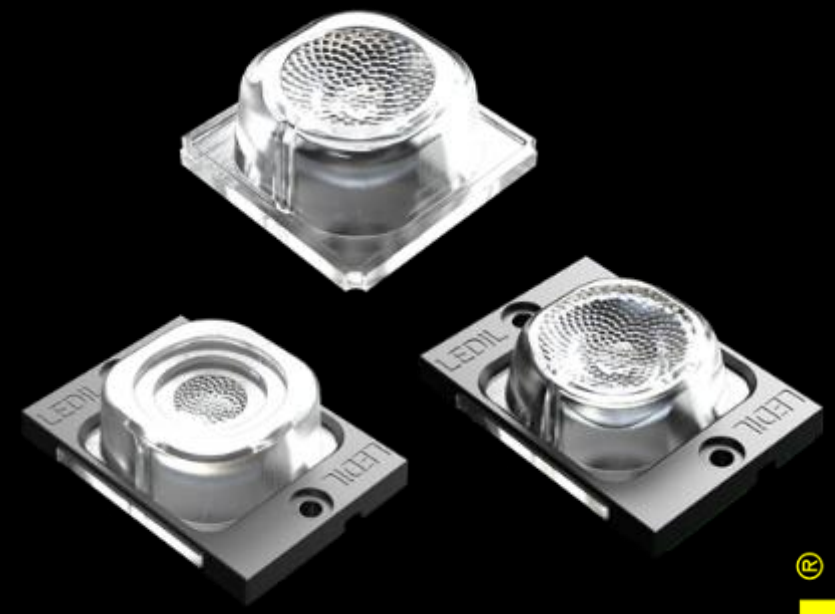
F15541_JENNY-60
F15555_JENNY-8X1-60



F15596_JENNY-FT45
F15574_JENNY-8X1-FT45



F15909_JENNY-FT65
F15910_JENNY-8X1-FT65



LEDiL®

MP = Mid Power LEDs
HP = High Power LEDs
COB = Chip On Board LEDs

Up to IP67 lenses

STELLA

Up to 30 mm LES

COB

(HB-)2X2MX(S)

Up to 7070 size

Ultra HP

SITARA

5050 size flat SMD LEDs

HP

STRADELLA-IP-28(-HB)

Up to 3535 size

MP, HP

STRADA/HB-IP-2X6

Up to 5050 size

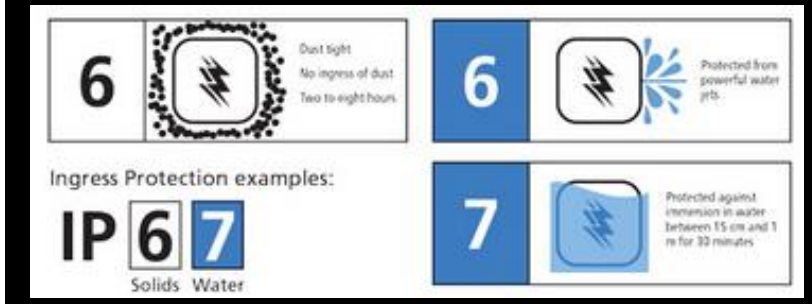
HP

FLORENCE-3R-IP

3x11 mid power modules

MP, HP

Dust



Water jets

Immersion

Architectural lighting

- The purpose is to emphasize or mask surroundings
- Using light to shape, modify or change our perception of a building, surface or space
- An art with no strict rules
- Luminaires must be usually hidden unless they are an artwork in themselves
- Typical applications:
  - **Façades** using wall-washing, wall grazing, flood and project flood lighting techniques
  - **Billboards** using wall-washing and wall grazing
  - **Bollards** with 180˚ or 360˚ light distributions

LEDiL®

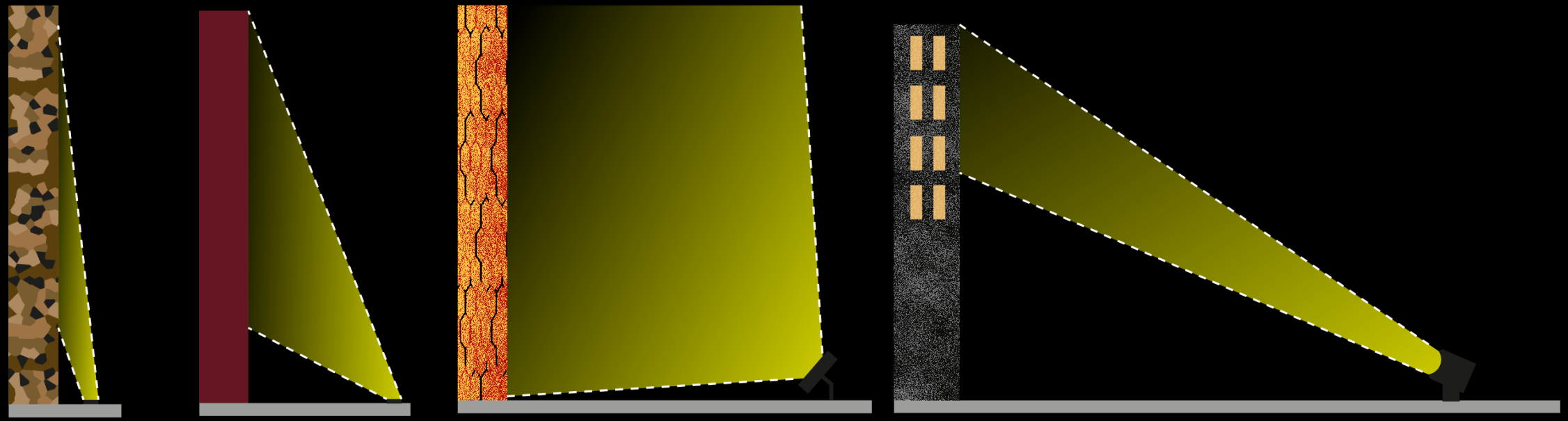
Different types of facade lighting

1 WALL GRAZING

2 ASYMMETRIC WALL WASHING

3 FLOOD LIGHTING

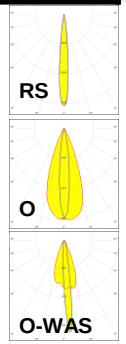
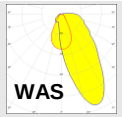
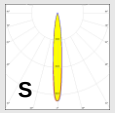
4 PROJECTOR FLOOD LIGHTING



LEDiL®

Facade lighting

Different type of facade lighting and suitable optics

Type of facade lighting	Description	Beam	Polar	Examples of suitable optics			
				SINGLE	MULTILENS	LINEAR	REFLECTORS
1. Wall grazing	A method of positioning a fixture close to a wall in order to highlight its special texture and architectural character, either from the floor or ceiling. A narrow beam	RS O O-WAS SS-WAS		EMILY-WAS,-O, -O-WAS, -SS-WAS EVA-O HEIDI-O & -RS LEILA-O-WAS, -O LAURA-WAS, -RS, -O TINA-O-WAS VERONICA/-SQ/-MINI -O, -RS RITA-WAS FLARE	ANNA-40/50-3/4/6/7-S SATU-O SANDRA-12-O LUCIA-D VIRPI-S FLORENTINA-O,-RS (12x1) HB-2X6-RS	LILIAN-ON VANESSA-O FLORENCE-1R-MAXI-WG	BLONDIE
2. Asymmetric wall washing	A lighting technique that places the fixture far enough away from the wall plane to uniformly light it up from top to bottom. Typical installation ratio 1:3. Asymmetric beam	WAS		RONDA-WAS, -WAS2 BILLIE		SHELLY	RITA-A LENA-WAS
3. Flood lighting	A large, powerful fixture with a wide beam spread for illumination of a large area. Typically far away from the illuminated object and used with a protective glass	40˚ and up		LEILA-W/-WW ROSE-WWW STELLA-HB-WWW GABRIELLA	VIRPI-W		BROOKE-G2-W MIRELLA-G2-W, -WW ANGELINA-W
4. Projector flood lighting	A large, powerful fixture with a spot symmetric beam very far away from the wall illuminating tall buildings, monuments or trees	Spot (10-20˚)		LEILA ROSE VERONICA-RS WINNIE CRYSTAL SEANNA GABRIELLA GERI-RZ	LUCIA-D ANNA TUIJA MELODY VIRPI-S HB-2X6-RS HB-2X2MX-M		ANGELA-S LENA-S

REFERENCE

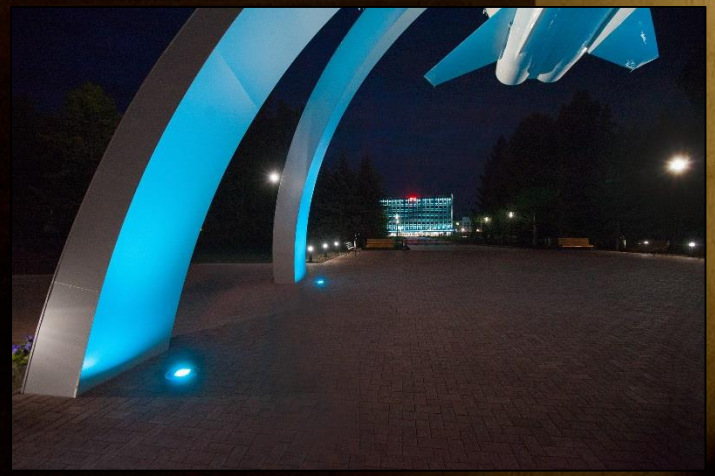
Architectural facade lighting: Wall grazing with linear and single optics
Customer: INTILED & FLUX LIGHTING
Luminaire: IntiSLIM & THE X-LINE NANO

REFERENCE

Architectural facade lighting: Wall grazing with multi-lens optics
Customer: INTILED
Luminaire: IntiSPOT

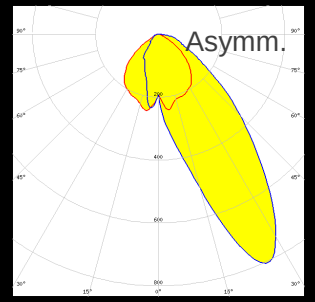
REFERENCE

Architectural facade lighting: Wall washing
Customer: INTILED
Luminaire: IntiGROUND



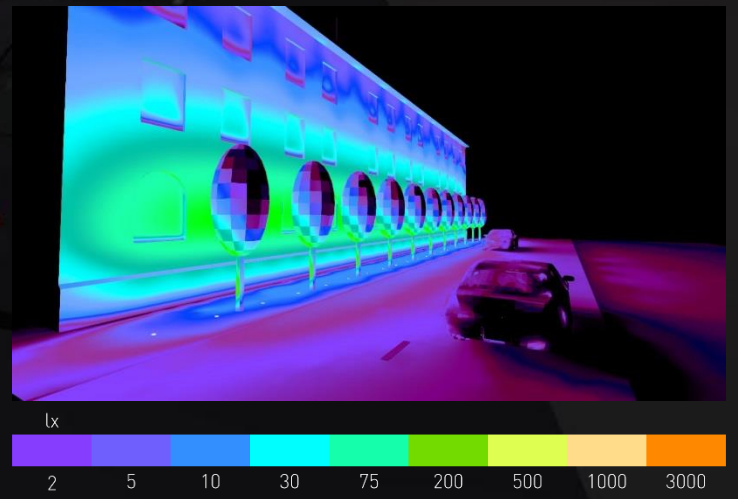
SIMULATION

Facade lighting
RONDA-WAS2



FN15977_RONDA-WAS2
FN15978_RONDA-WAS2-B
FN15975_RONDA-WAS2-C

LED:	10 (Gen7)
Luminaire distance from wall:	1.5 m
Luminaire spacing:	1.5 m
Mounting type:	Recessed
Luminous flux (Luminaire):	1169 lm
Power (Luminaire):	14 W
Total load:	336 W
Luminous efficacy:	84 lm/W
Colour temperature:	3000 K
CRI:	80



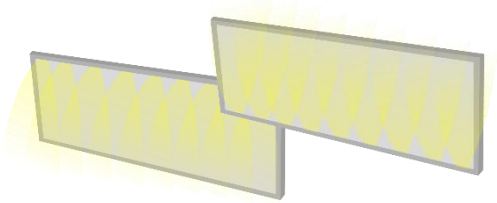
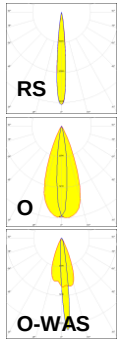
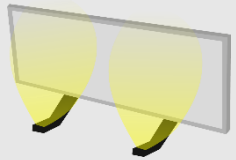
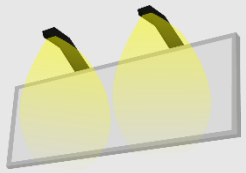
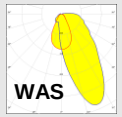
REFERENCE

Architectural facade lighting: Projector flood lighting
Customer: INTILED & LEDART
Luminaire: IntiSTARK & Dragon-L RGB-24

Billboard lighting

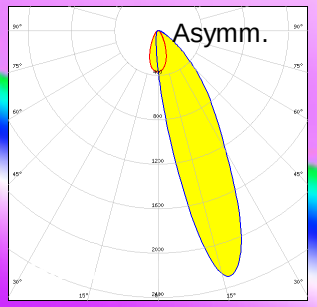
Different type of billboard lighting and suitable optics

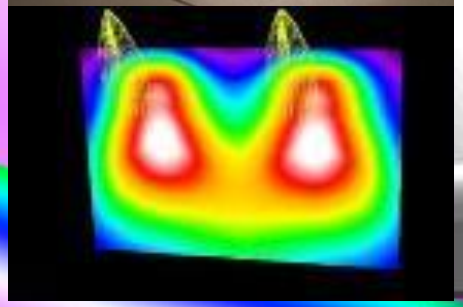
- Illumination of outdoor billboards with the key to success being the ability to catch the eye

Type of billboard lighting	Description	Beam	Polar	Optics			
				SINGLE	MULTILENS	LINEAR	REFLECTORS
Wall grazing 	A method of positioning a fixture close to billboards either from up or down. A narrow beam	RS O O-WAS SS-WAS		EMILY-WAS,-O, -O-WAS, -SS-WAS EVA-O HEIDI-O & -RS LEILA-WAS-O, -O LAURA-WAS, -RS, -O TINA-O-WAS VERONICA/-SQ/-MINI -O, -RS RITA-WAS FLARE	ANNA-40/50-3/4/6/7-S SATU-O SANDRA-12-O LUCIA-D VIRPI-S FLORENTINA-O,-RS (12x1) HB-2X6-RS	VANESSA-O FLORENCE-1R-MAXI-WG	
Asymmetric wall washing  	The fixture with a longer arm far enough from the billboard to uniformly light it up from top to bottom.	WAS Wide asymmetric beams		BILLIE RONDA-WAS	STRADA-SQ, -2X2, -2X6 -T4/-B	SHELLY	LENA-WAS

SIMULATION

Billboard lighting
BILLIE-A/-B



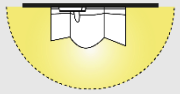
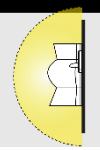
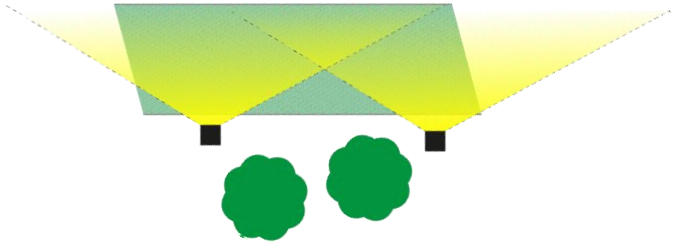
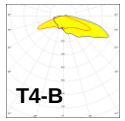
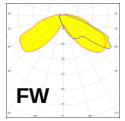
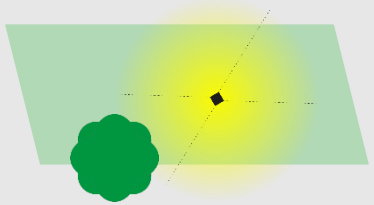
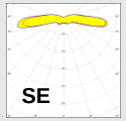
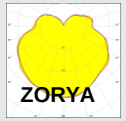


LEDiL®

Bollard lighting

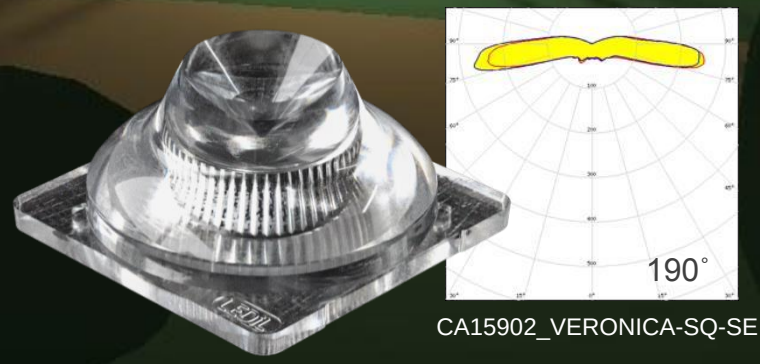
Different type of bollard lighting and suitable optics

- Illumination and accenting of landscapes, walkways, building and parking areas. Improving security and adding ambient lighting to property

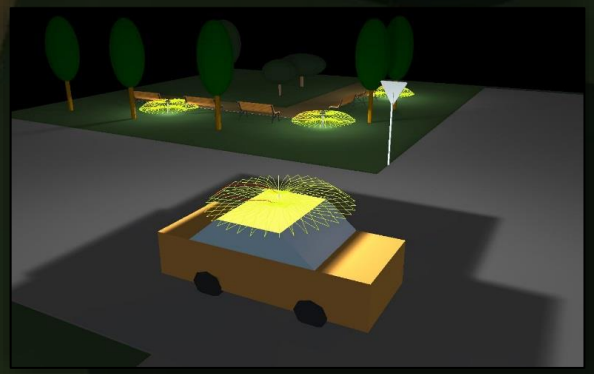
Type of bollard lighting	Description	Beam	Polar	Optics	
				Horizontal installation 	Vertical installation 
180˚	Horizontal or downwards facing beam at lower heights. 	WAS Asymmetric	 	STRADA-SQ, -2X2-T4-B & -FW	FLARE-WAS (vertically) RITA-WAS
360˚	Vertical PCB installations with several optics to cover wider area or horizontal PCB installations with omnidirectional / side emitter type of light distributions 	Side emitters 360˚	 	VERONICA-SQ-SE ZORYA	FLARE-WAS RITA-WAS (2 or more lenses per luminaire)

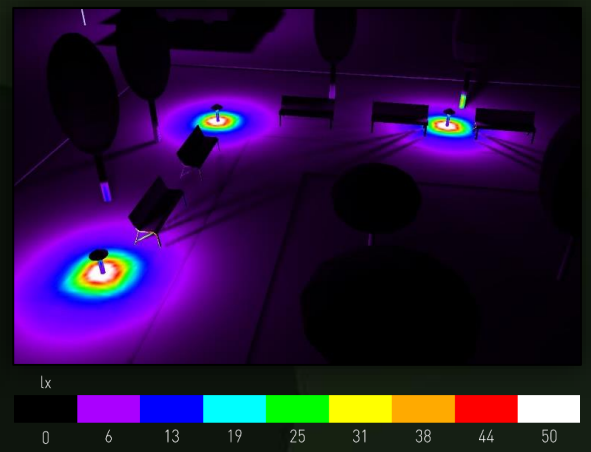
SIMULATION

Parking area lighting
VERONICA-SQ-SE



CA15902_VERONICA-SQ-SE





LEDiL®

1-pagers of products

CRYSTAL

Power and punch in a compact package

- Unsurpassed light quality for a variety of lighting applications
- High center peak candela power
- CRYSTAL-MINE complies with mining head-lamp requirements
- A narrow beam combined with over 90% efficiency means more light for tough tasks in demanding environments

Features

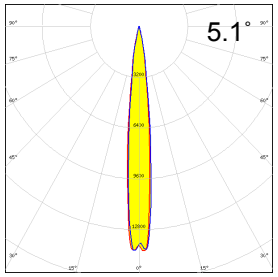
- Ø49.7 mm, H 28.7 mm
- Very narrow beam FWHM 3°
- Good control of light
- According to mining head lamp specifications CRYSTAL-MINE has 10% added illumination over the cut-off area
- CRYSTAL is designed to have a tight uniform beam and a maximum candela peak
- Highly efficient TIR design

Typical Applications

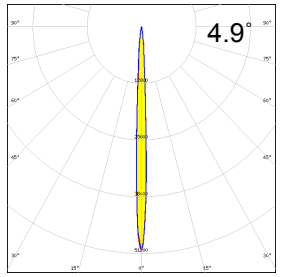
- Head lamps and torches
- Wall washing
- Spotlights and general illumination

Compatibility

- Up to 7070 size LED packages



FCN13552_CRYSTAL-RS



C12985_CRYSTAL-MINE

GABRIELLA

Ø38 and 45 mm RGB and tunable white colour mixing lens family

- LEDiL's unique floret-type hexagonal surface ensuring colour uniformity
- Easy and reliable assembly with excellent positioning accuracy
- Three beams including 10° in Ø45 and Ø38 mm sizes

Features

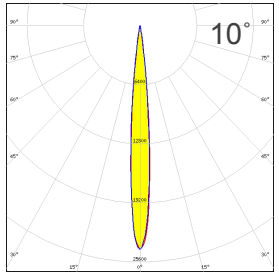
- Ø38 and 45 mm
- Refined mechanics with positioning pins
- Holder design allows more space for components
- Can be assembled with screws or tape (versions with and without tape)

Typical Applications

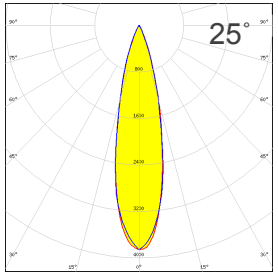
- Stage lighting
- Architectural lighting
- Accent lighting

Compatibility

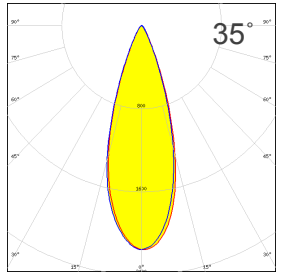
- Optimized for 5050 sized and compatible with 7070 RGB LEDs (e.g. Osram OSTAR Stage, Cree XM-L Colour, LEDengin LZ4)
- Gaggione (13.6 mm) pin compatible without holder



C15527_GABRIELLA-45-S
CN15529_GABRIELLA-45-S
CX15577_GABRIELLA-45-S



C15810_GABRIELLA-45-M
CN15815_GABRIELLA-45-M
CX15818_GABRIELLA-45-M



C15813_GABRIELLA-45-W
CN15816_GABRIELLA-45-W
CX15819_GABRIELLA-45-W

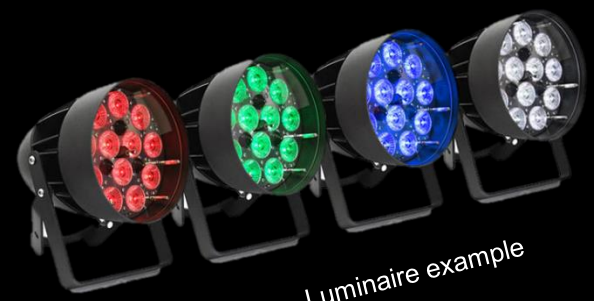
C16193_GABRIELLA-MIDI-S
CA16202_GABRIELLA-MIDI-S
CN16208_GABRIELLA-MIDI-S

WASH-LIGHT

DECO LIGHT

Ø45 mm
Height 30.3 mm

Ø38 mm
Height 23.8 mm



Luminaire example

LEDiL®

GERI-RZ

Ø45 mm robust TIR lens with 16° beam for colour mixing applications

- RGB lens for color mixing with a good candela center peak
- Mixing functionality is based on LEDiL's proprietary RZ-surface
- Works also in clusters of small LEDs

Features

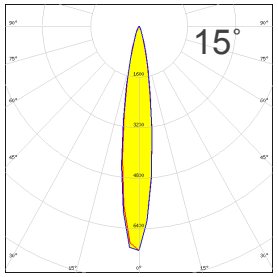
- 45 x 45 mm TIR lens
- Narrow beam (~12° - Osram Stage RGB)
- Assembly with holder
- Can be fastened by pins, screws or glue

Typical Applications

- Stage lighting
- Interior architectural lighting
- Tunable CCT and high CRI lighting technologies

Compatibility

- A range of multi-color LEDs up to 7070 size packages



C13185_GERI-RZ

LEDiL®

EMILY

Ø26 mm TIR-lens with multiple beam patterns good for sealing (waterproof) applications

- TIR lenses designed to be easily sealed with a conformal coating
- Available with two-sided adhesive tape or without tape for a glue option

Features

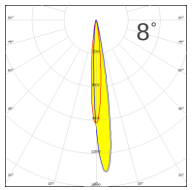
- Ø26 mm, H 14.8 mm
- Easy to seal with a conformal coating

Typical Applications

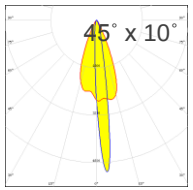
- Good for sealing (waterproof) applications

Compatibility

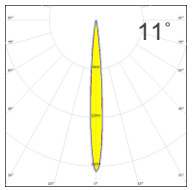
- Up to 5050 size LED packages



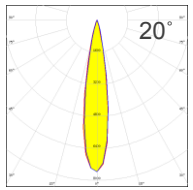
CA11998_EMILY-SS-WAS



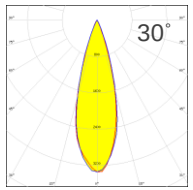
CA12000_EMILY-O-WAS



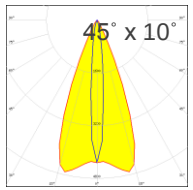
CA12062_EMILY-D



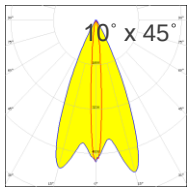
CA11388_EMILY-M



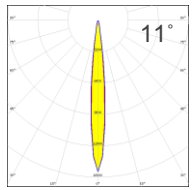
CA11391_ EMILY-M2



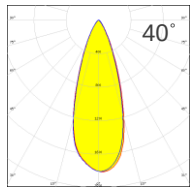
CA11389_EMILY-O



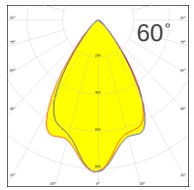
CA12068_EMILY-O-90



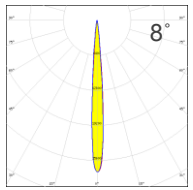
CA11387_EMILY-SS



CA11934_EMILY-W



CA12589_EMILY-WWW



CA13546_EMILY-RS

DOWN LIGHT

WASH-LIGHT

LEDiL®

EVA

Ø35 mm TIR-lens with multiple beam patterns

- Low profile optical design helps integrate the lens into most applications
- Multiple beam patterns for different architectural lighting needs

Features

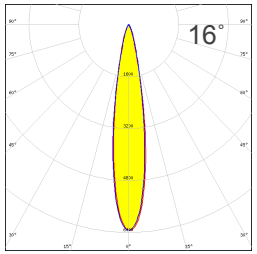
- Ø35 mm, H 16.4 mm
- Single lens to be used as TIR only or assembled in holder (Ø37.7 mm)

Typical Applications

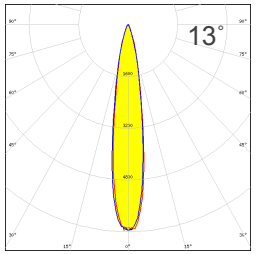
- Architectural lighting
- Wall-grazing

Compatibility

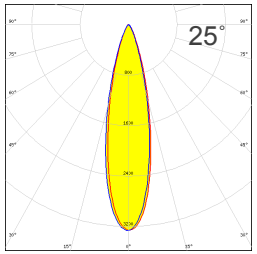
- Compatible with up to 7070 size LED packages



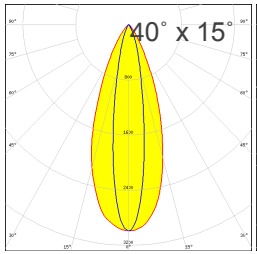
C10684_EVA-D



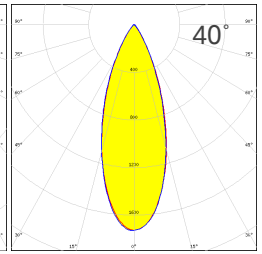
C12041_EVA-S



C10685_EVA-M



C12828_EVA-O



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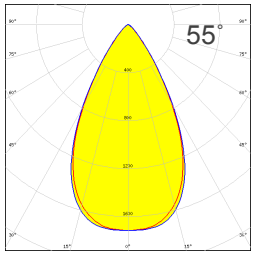


C10909_EVA-WW

DOWN LIGHT

WASH-LIGHT

LEDiL®

FLARE

Free-form optic with a wide horizontal beam

- Consists of three subfamilies optimized for different LED size packages
- All beams provide the same wide horizontal beam with a vertical cutoff that is not as tight

Features

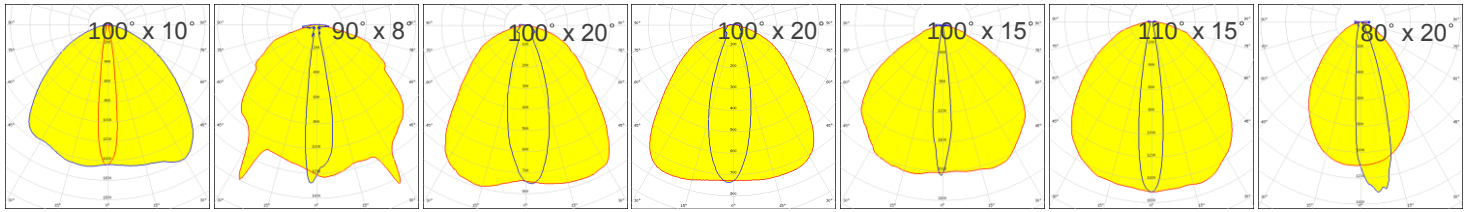
- FLARE-MINI: Ø16 mm, H 8.6 mm
- FLARE: 29 x 22.8 x 12.84 mm
- FLARE-MAXI: 33.9 x 33.3 x 16.7 mm
- Fastening with glue or optional adhesive tape

Typical Applications

- Emergency beacons
- Wall washing
- Corridors
- Cove lighting
- Vehicle warning lights
- Window shades
- Border control

Compatibility

- FLARE-MINI: Up to 3535 size packages
- FLARE: Up to 5050 size packages
- FLARE-MAXI: Up to 7070 size packages



CA10932_FLARE-B | CA10563_FLARE-C | C12763_FLARE-MINI-A C12837_FLARE-MINI-A-PIN | C13015_FLARE-MINI-AD C13016_FLARE-MINI-AD-PIN | C12868_FLARE-MAXI | C13012_FLARE-MAXI-D | C14613_FLARE-MAXI-T

WASH-LIGHT

DECO LIGHT

LEDiL®

HEIDI

Ø21.6 mm easily sealable TIR-lens with multiple beam patterns good for lightboxes and wall washing

- TIR-lens with multiple beam patterns
- Designed to be easily protected against the environment by conformal coatings

Features

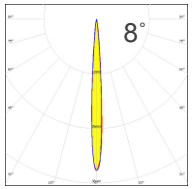
- Ø21.6 mm easily sealable TIR-lens
- Available with or without two-sided adhesive tape

Typical Applications

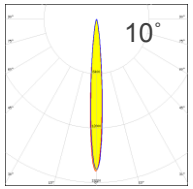
- Lightboxes
- Wall washing

Compatibility

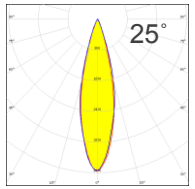
- Up to 3535 size LED packages



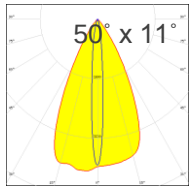
CA11663_HEIDI-RS



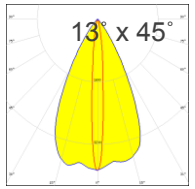
CA11264_HEIDI-D



CA11265_HEIDI-M



CA11266_HEIDI-O



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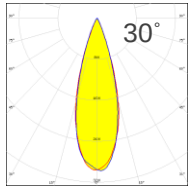
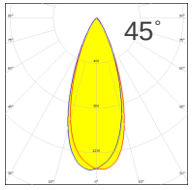
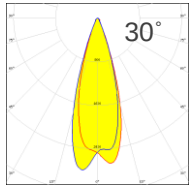


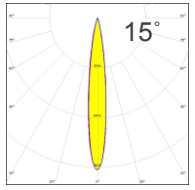
CA11268_HEIDI-W



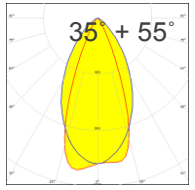
CA12079_HEIDI-W2



CA12893_HEIDI-WR



CA12242_HEIDI-SS



CA14197_HEIDI-REC-90

LAURA

Square lens family with multiple beam patterns

- Well-established family with symmetrical and asymmetrical beams
- LAURA-G2 comes with a thinner holder design and is backwards compatible
- Two wall-washing beams to be used in groups

Features

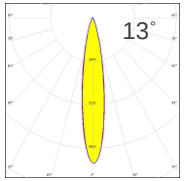
- 21.6 x 21.6 mm, H 13 mm
- Wall-washing beams: typical installation distance from the wall of 10–20 cm and optimal luminaire spacing of 5–15 cm

Typical Applications

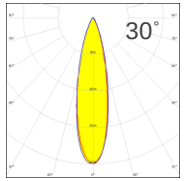
- Architectural indoor and outdoor
- Wall gracing

Compatibility

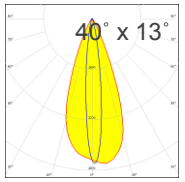
- Compatible with up to 5050 size LED packages



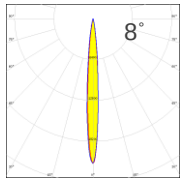
CA13629_G2 -LAURA-D-P



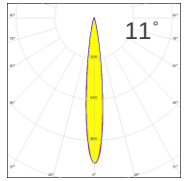
CA13627_G2 -LAURA-M-P



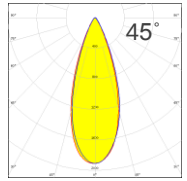
CA13631_G2 -LAURA-O-P



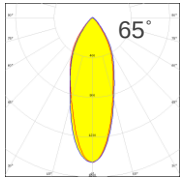
CA13628_G2-LAURA-RS-P



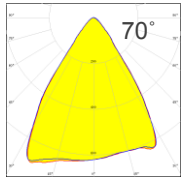
CA13630_G2 -LAURA-SS-P



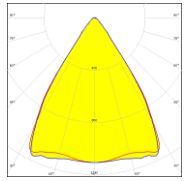
CA13634_G2 -LAURA-W-P

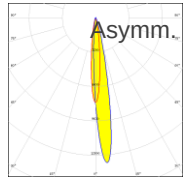


CA13633_G2-LAURA-WW-P

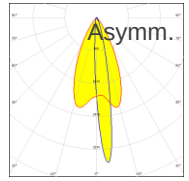


CA13636_G2 -LAURA-R-XW-P

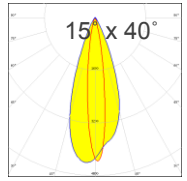

CA13632_G2-LAURA-R-W-P



CA13639_G2 -LAURA-SS-WAS-P



CA13639_G2 -LAURA-O-WAS-P



CA13637_G2-LAURA-O90-P

Polars of LAURA-G2. Also older LAURAs available

NEW

LEIA

Extremely narrow beam with sharp oval option for creative decorative lighting

- Beautiful, narrow 3° beam with minimum spill light
- White holder with colour mixing chamber makes the beam extremely monochrome
- Additional sublens to create very narrow oval beam

Features

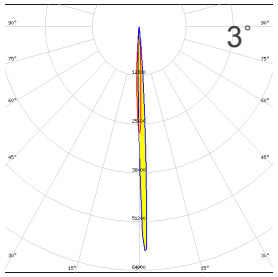
- Ø 49.8 mm (41.2 mm lens only), H 53 mm
- Assembly with white holder
- 3° beam
- Typical cd/lm: 70
- Screw mounting
- Sublens for high-aspect oval beam
- Better efficacy than with traditional blade-type lighting solutions

Typical Applications

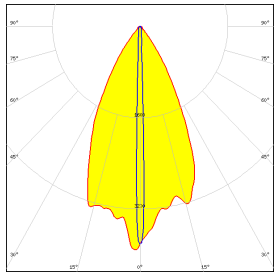
- Architectural lighting
- Decorative lighting
- Wall-grazing
- Signal lighting

Compatibility

- Designed for single chip 3535 LED packages
- Compatible with up to 7070 LED packages



FN16214_LEIA-S



FN16214_LEIA-S
F16629_LEIA-SUB-O

LEILA

Ø21.6 mm optic family with multiple beam patterns and mounting options

- LEDiL's well-established LEILA family with symmetrical and asymmetrical beams
- LEILA-G2 comes with a thinner holder design and is backwards compatible with previous generations
- O-WAS beam for wall washing applications

Features

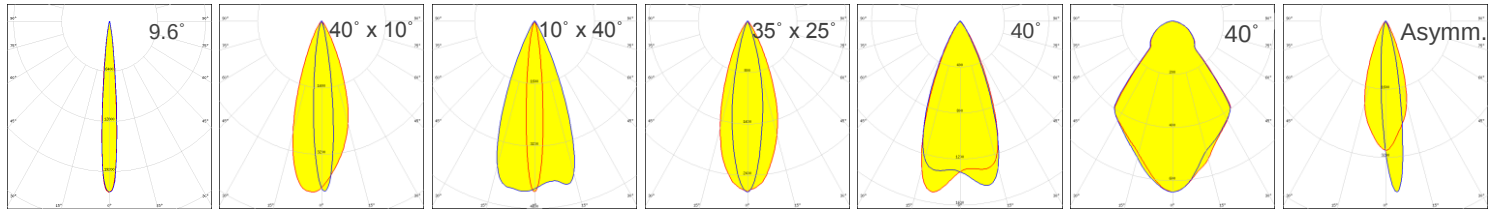
- Ø21.6 mm, H 14.6 mm
- White or black holder

Typical Applications

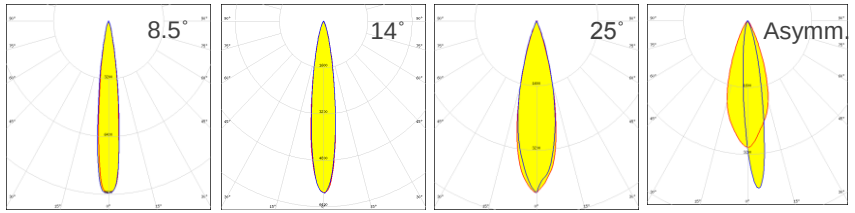
- Architectural
- Wall-washing
- Outdoor facade lighting

Compatibility

- Up to 5050 size LED packages



FA10661_LXP-RS | FA12218_LXP-O | CA11484_LXP2-O-90 | FA10662_LXP-REC | FA10832_LXP-W | C13353_LEILA-R-CLIP16 | CA14392_LXP2-O-WAS



CA14506_G2-LXP2-RS2 | CA14508_G2-LXP2-D | CA14510_G2-LXP2-M | CA16435_LXP2-SS-WAS

TINA

Ø16.1 mm miniature optic

- Three families with wide selection of beams: TINA with white holder, TINA2 with black holder, TINA3 with low profile for low and high bay applications
- Fast and easy installation

Features

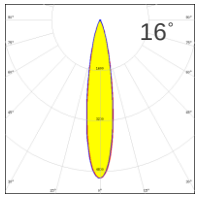
- Ø16.1 mm, H 10 mm (TINA3 – 7 mm)
- TIR optic with a white or black holder
- Preassembled in lightweight durable holders with fastening tape

Typical Applications

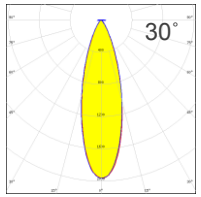
- Linear lighting
- Jewellery shops
- Museums
- Reading lights
- Compact torches
- Head lamps
- Low & high bay

Compatibility

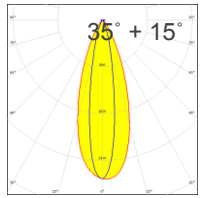
- Up to 3535 size LED packages



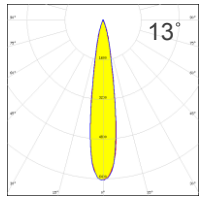
FA11205_TINA-D
CA12375_TINA2-D



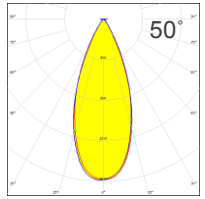
FA11206_TINA-M
CA12377_TINA2-M



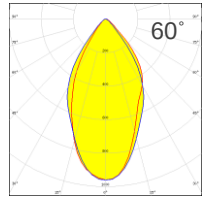
FA11204_TINA-O
CA12379_TINA2-O



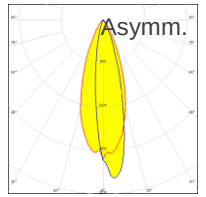
FA11208_TINA-RS
CA12374_TINA2-RS



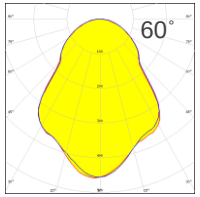
FA11207_TINA-W
CA11175_TINA2-W



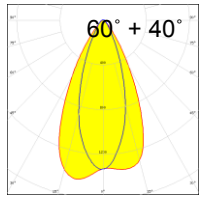
FA11019_TINA-WW
CA11176_TINA2-WW



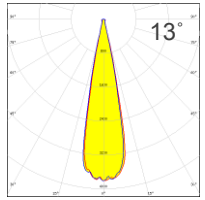
CA15536_TINA2-O-WAS



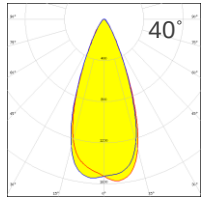
C13253_TINA2-R-CLIP16



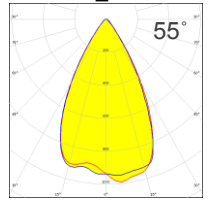
CA13044_TINA3-OO



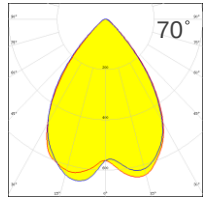
FA11905_TINA3-S



FA11824 TINA3-W



FA11825 TINA3-WW



FA11826 TINA3-WWW

RONDA

Low profile system for any indoor lighting needs

- Multi refraction technology allows high performance, uniform light in all variants
- Low profile design with wide customization possibilities and easy integration with luminaires
- 10 beams makes RONDA an ideal, modern choice for a wide range of downlight solutions

Features

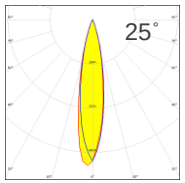
- Ø70 mm with wide customization possibilities (front panel, assembly depth, light pattern)
- No shadows, uniform light up to ceiling level without needing to tilt the fixture
- Typical installation ratio 1:3 with asymmetric beams
- Asymmetric and double asymmetric wall washing beams meeting the strictest vertical illuminance requirements

Typical Applications

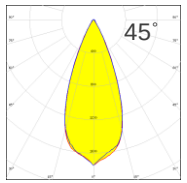
- Retail
- Architectural
- Downlighting

Compatibility

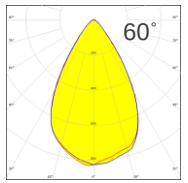
- LES sizes up to ~16 mm, asymmetrical up to 14 mm
- Three holder versions support the most common connectors
- LEDiL HEKLA sockets



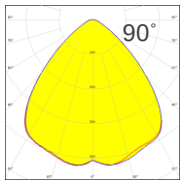
FN15970_RONDA-S-C



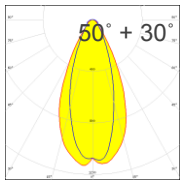
FN15969_RONDA-W-C



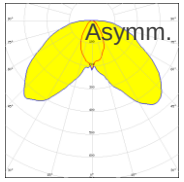
FN15968_RONDA-WW-C



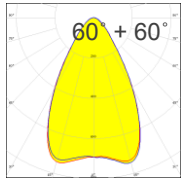
FN15966_RONDA-WWW-C



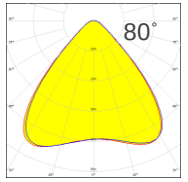
FN15998_RONDA-O-C



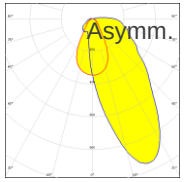
FN15972_RONDA-ZT45-C



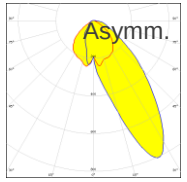
FN15973_RONDA-REC-60-C



FN15974_RONDA-REC-90-C



FN15971_RONDA-WAS-C



FN15975_RONDA-WAS2-C

Holder A (Ø70 mm): LEDiL twist and lock base parts, 3rd party connectors from TE, Bender+Wirth and IDEAL
Holder B (Ø70 mm): 3rd party connectors from BJB, IDEAL and Stucchi
Holder C (Ø54 mm): LEDiL HEKLA

DOWN LIGHT

WASH-LIGHT

KONNTAKT

PATENT PENDING

LEDiL®

ROSE

21.6 x 21.6 mm versatile lens family

- LEDiL well established family with ROSE, ROSE-MRK and ROSE-UV subfamilies
- All variant have the same dimensions and come with a preassembled holder
- MRK versions for bigger LEDs and silicone versions for UV applications

Features

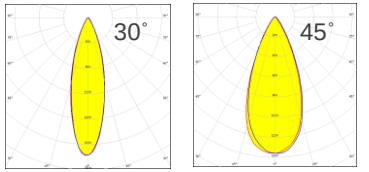
- 21.6 x 21.6 mm
- Comes preassembled
- Durable holders with a fastening tape that makes their installation fast and easy
- UV variants made from silicone and comes with a black holder

Typical Applications

- Architectural indoor and outdoor
- Flood lighting
- Wall grazing

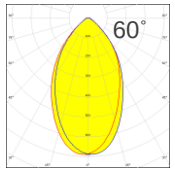
Compatibility

- ROSE: Up to 5050 size LED packages
- ROSE-MRK: Up to 7070 LED packages
- ROSE-UV: For high power UV-LEDs with dome

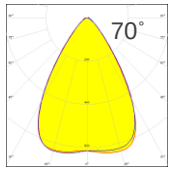


F14951_ROSE-MRK-S

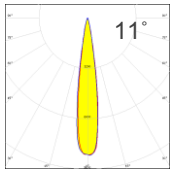
F14952_ROSE-MRK-M



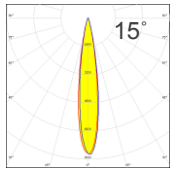
F14953_ROSE-MRK-W



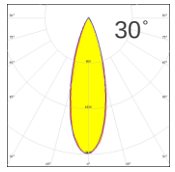
FA15480_ROSE-MRK-BW



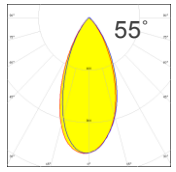
FA10668_CXP-RS



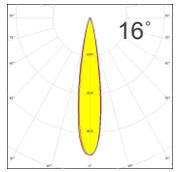
FA10667_CXP-SS



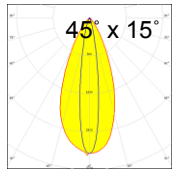
FA10665_CXP-M



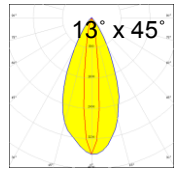
FA10708_CXP-W



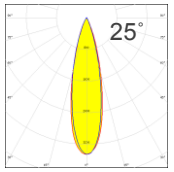
FA10666_CXP-D



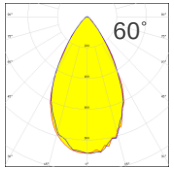
FA10669_CXP-O



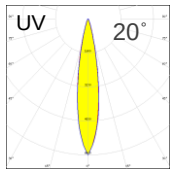
FA11153_CXP-O-90



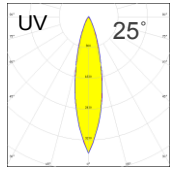
FA11540_NIS83-MX-MD



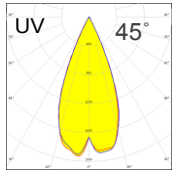
FA10903_NIS83-MX-WW



FCA14011_G2-NIS033U-S



FCA14405_G2-NIS033U-M



FCA14464_G2-NIS033U-W

SEANNA-A

Ø153 mm 1° beam hybrid optic ideal for search lighting and border control

- Best of both worlds: TIR optics efficiency combined with Fresnel optic control
- The tightest beam in the portfolio

Features

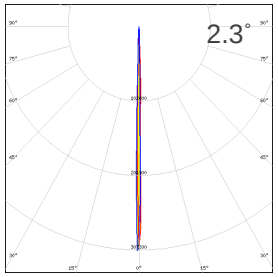
- Ø153 mm, H 79 mm hybrid optic
- Peak value at 25 m is up to 800 cd/lm and spot as narrow as 1-3˚ depending on LED
- Typical FWHM 1.5°

Typical Applications

- Military applications
- Search applications
- Border control
- Speed control
- Hunting lights

Compatibility

- Up to 7070 size LED packages



FCP13895_SEANNA-A

LEDiL®

VERONICA

Solid optic for harsh outdoor environments

- 3 versions: VERONICA, VERONICA-SQ and VERONICA-SQ-MINI
- SQ version with a square flange and tape for easy potting
- Easy ingress protection for applications requiring IP ratings up to IPX8

Features

- VERONICA: Ø 26 mm, H: 12,2 mm
- VERONICA-SQ: 22.5 x 22.5 mm, H: 12.2 mm
- VERONICA-SQ-MINI: 13.9 x 13.9 mm, H: 8.86 mm
- All versions suitable for potting

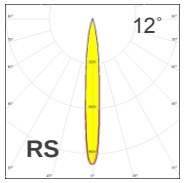
Typical Applications

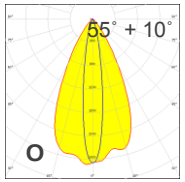
- Outdoor architectural lighting
- Facade lighting
- Display and billboard lighting

Compatibility

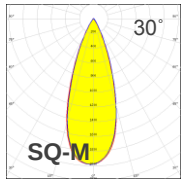
- VERONICA & VERONICA-SQ up to 7070 size
- VERONICA-SQ-MINI up to 3535 size packages

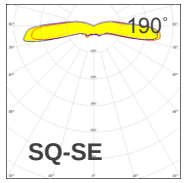
VERONICA

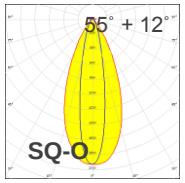


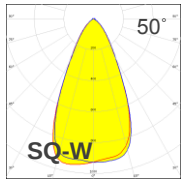


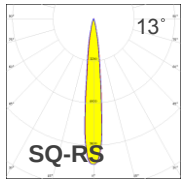
VERONICA-SQ



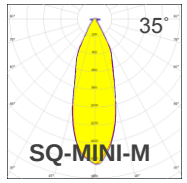


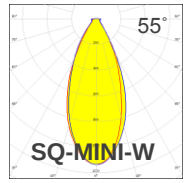


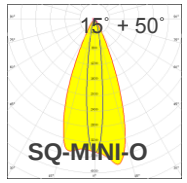


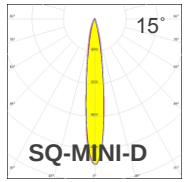


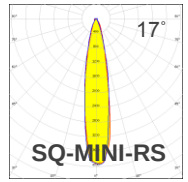
VERONICA-SQ-MINI





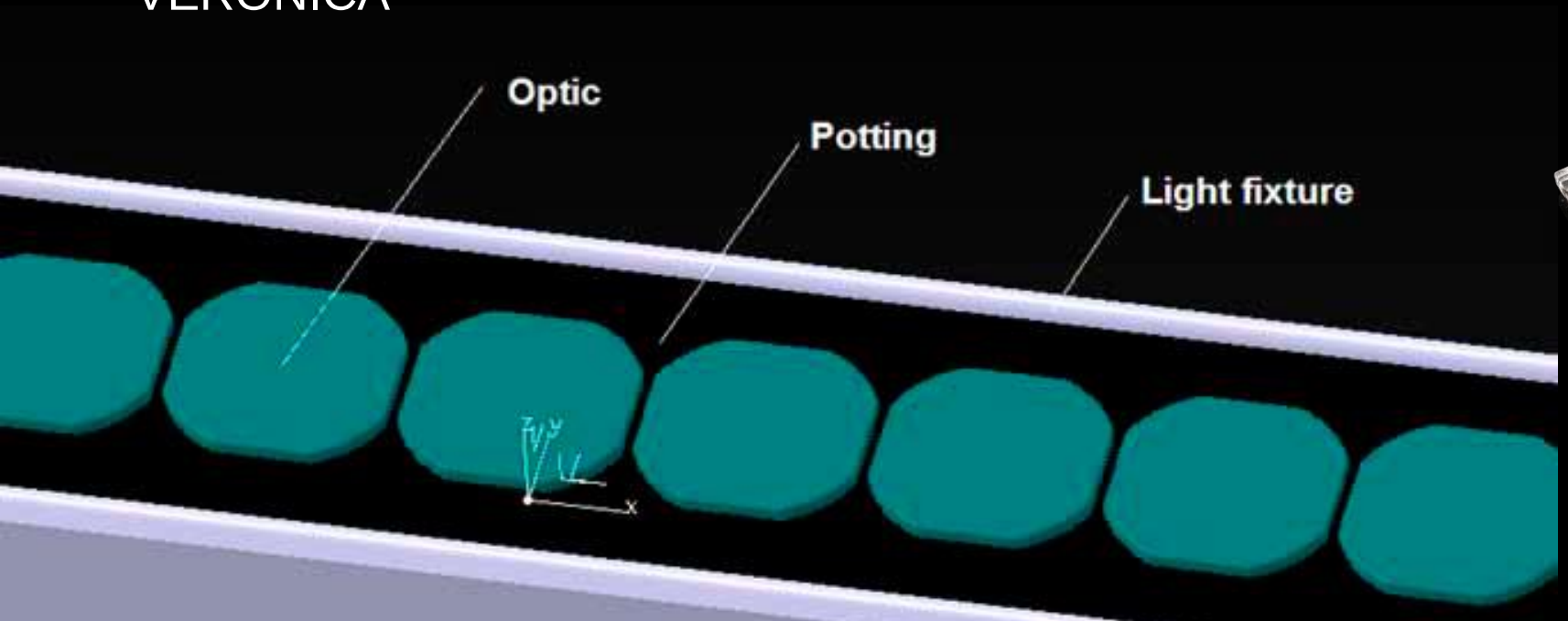


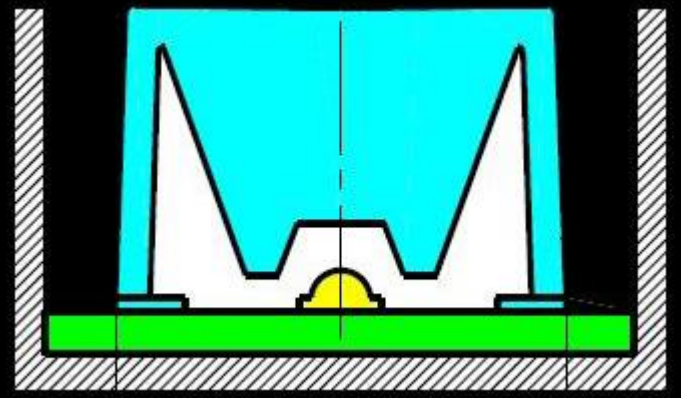




REFERENCE

Easy ingress protection by potting
VERONICA





LEDiL®

WINNIE

Ø50 mm optic designed for retrofits, downlights and compact track light

- Unique flat folded TIR design easily adaptive to retrofit designs with its convenient MR16 size
- Exceptional optical efficiency
- Compatible also with LEDiL HEKLA sockets

Features

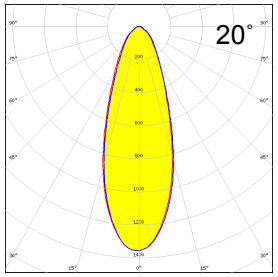
- Ø49.8 mm, H 19.3 mm
- Available with white holder for Zhaga Book compatible fastening or black holder compatible with LEDiL HEKLA

Typical Applications

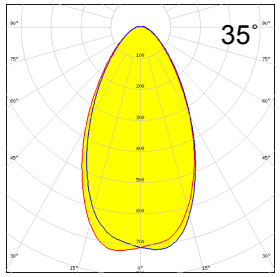
- Retrofits
- Downlights
- Track lights
- Architectural lighting

Compatibility

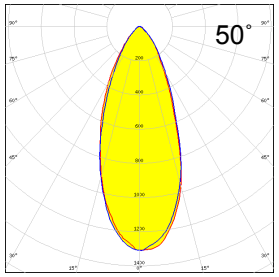
- COB’s with LES sizes up to 21 mm
- Zhaga Book 3 compatible fastening – pre-drilled heatsink available
- WINNIE-HLD-C: Compatible with LEDiL HEKLA sockets



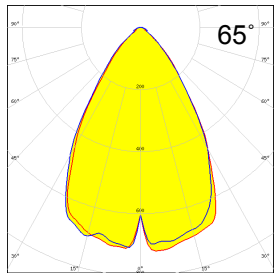
CN14236_WINNIE-S
CN15822_WINNIE-S-C



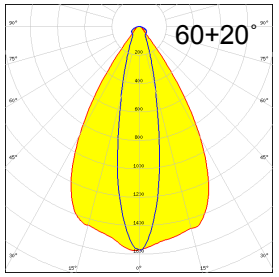
CN14237_WINNIE-M
CN15824_WINNIE-M-C



CN14238_WINNIE-W
CN15825_WINNIE-W-C



CN16190_WINNIE-WW
CN16191_WINNIE-WW-C



CN14811_WINNIE-O
CN15826_WINNIE-O-C

ZORYA

~340° silicone optic for retrofits

- Energy Star standards fulfilling omnidirectional lens
- Twist and lock holder system allows the lens to be used with solderless connectors
- Easy ingress protection due to silicone technology

Features

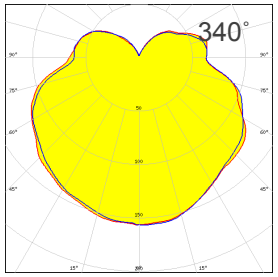
- Ø56 mm, H 29.48 mm
- High efficiency (95 %) with excellent UV, heat, and impact resistance
- Can be used as it is, or with external protective cover
- RGB and tunable white support
- Can achieve IP-ratings
- Typical amount of uplight 30-40 %

Typical Applications

- Retrofit
- Walkway lighting
- Industrial lighting
- Garden lights

Compatibility

- LES sizes from 6 mm to 24 mm
- LEDiL HEKLA sockets & 40 and 50 mm adapters
- Stucchi, BJB and Tyco solderless connectors

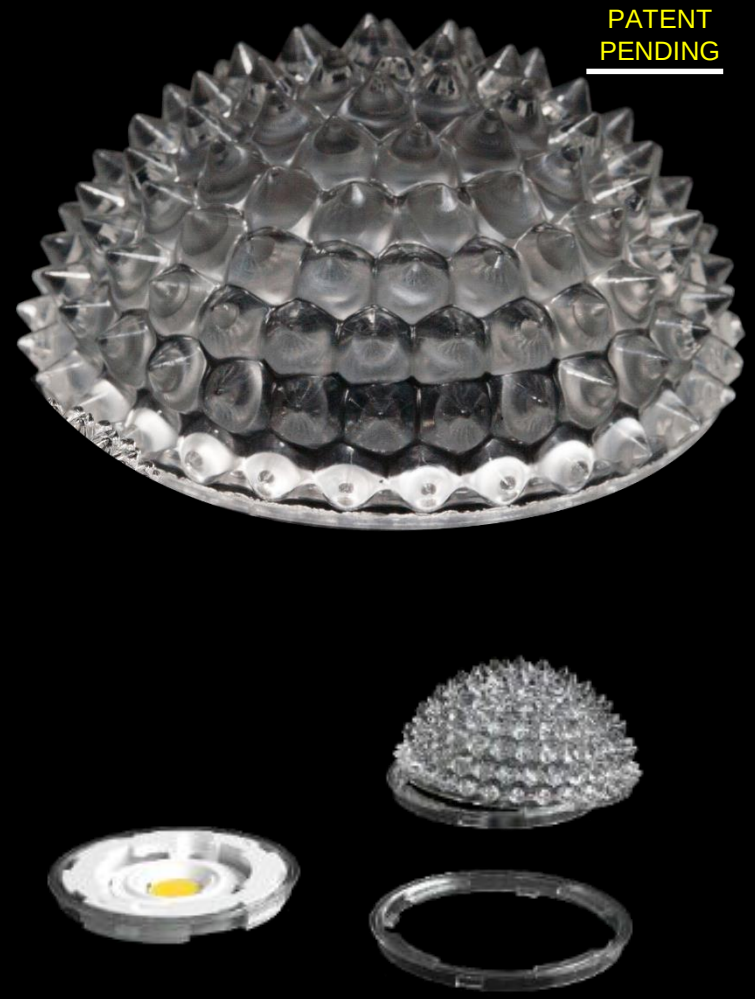


FP15072_ZORYA-C
FP15073_ZORYA-B

DECO LIGHT

KONNTAKT

PATENT PENDING



LEDiL®

ANNA

Ø40 and Ø50 mm LEDiL's widest multi-lens family with lens options available from 3–7 LEDs

- Two flange diameter size options - 40 mm and 50 mm
- Options of 3-, 4-, 5-, 6- and 7-lens versions

Features

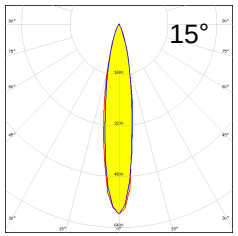
- Ø40 & 50 mm, H 10.7 mm

Typical Applications

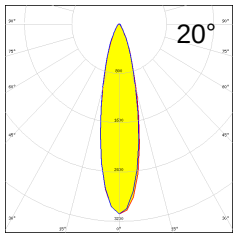
- Architectural
- Wall grazing
- Downlighting
- Small spotlights

Compatibility

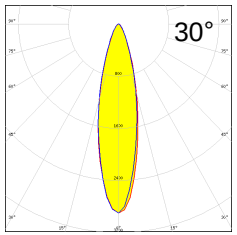
- Up to 3535 size LED packages



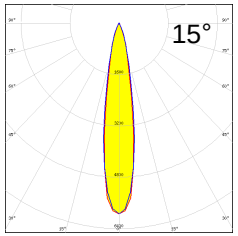
C11710_ANNA-40-3-S
C11793_ANNA-40-4-S
C11713_ANNA-40-5-S
C11805_ANNA-40-6-S
C11716_ANNA-40-7-S



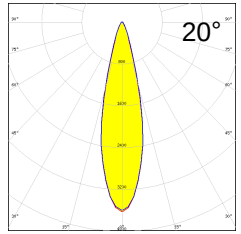
C11711_ANNA-40-3-M
C11794_ANNA-40-4-M
C11714_ANNA-40-5-M
C11806_ANNA-40-6-M
C11717_ANNA-40-7-M
C12289_ANNA-40-7-M2



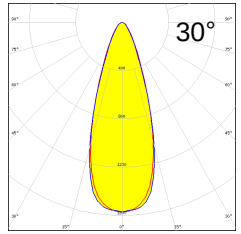
C11712_ANNA-40-3-W
C11795_ANNA-40-4-W
C11715_ANNA-40-5-W
C11807_ANNA-40-6-W
C11718_ANNA-40-7-W



C11606_ANNA-50-3-S
C11799_ANNA-50-4-S
C11612_ANNA-50-5-S
C11811_ANNA-50-6-S
C11670_ANNA-50-7-S



C11607_ANNA-50-3-M
C11800_ANNA-50-4-M
C11613_ANNA-50-5-M
C11812_ANNA-50-6-M
C11679_ANNA-50-7-M



C11608_ANNA-50-3-W
C11801_ANNA-50-4-W
C11614_ANNA-50-5-W
C11813_ANNA-50-6-W
C11682_ANNA-50-7-W

LUCIA

4-up multi-lens with 10˚ beam capable of colour mixing

- 4-up multi-lens module with specially tilted lenses
- Precise "blade" type beam (10˚) ideal for illuminating large buildings, objects and pillars
- Very narrow flood with good cut-off

Features

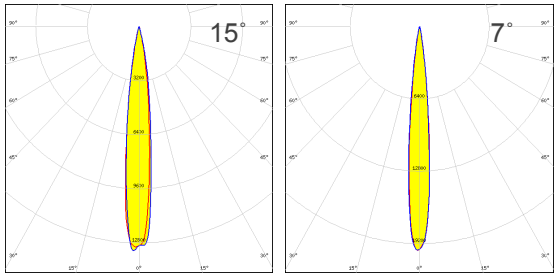
- 90 x 90 mm, H 34.68 mm
- Special tilting technique and RZ surface for maximum beam uniformity
- Glare-free and powerful light from a very compact source
- Easy mounting with 1 screw

Typical Applications

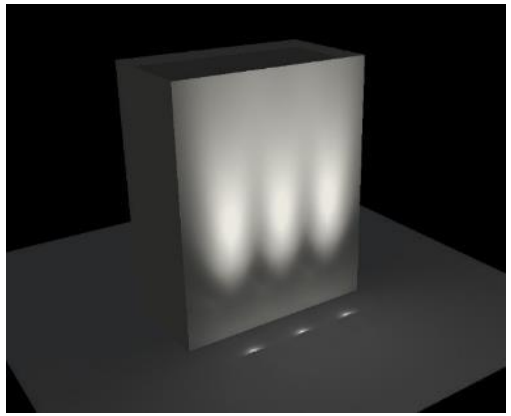
- Architectural lighting
- Façade lighting
- Surgery lighting
- Flood lighting
- Speed camera lighting

Compatibility

- Up to 7070 size high power LED packages



C14678_LUCIA-S C15013_LUCIA-D



MELODY

Ø50.6 mm 3- and 4-up multi-lenses

- Versions with 3- and 4-up lenses
- For applications where a compact light-source is required

Features

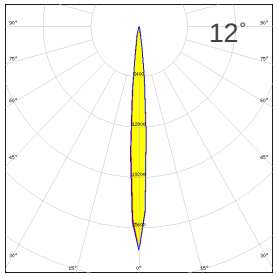
- Ø50.6 mm, H 11.9 mm
- MR16 standard PMMA lens family

Typical Applications

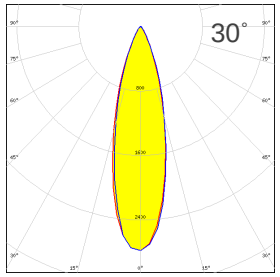
- Downlighting
- Tracklighting
- Bikelight

Compatibility

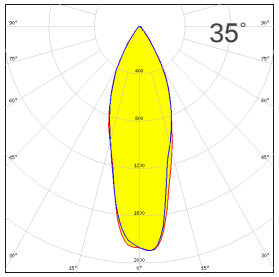
- Up to 3535 size LED packages



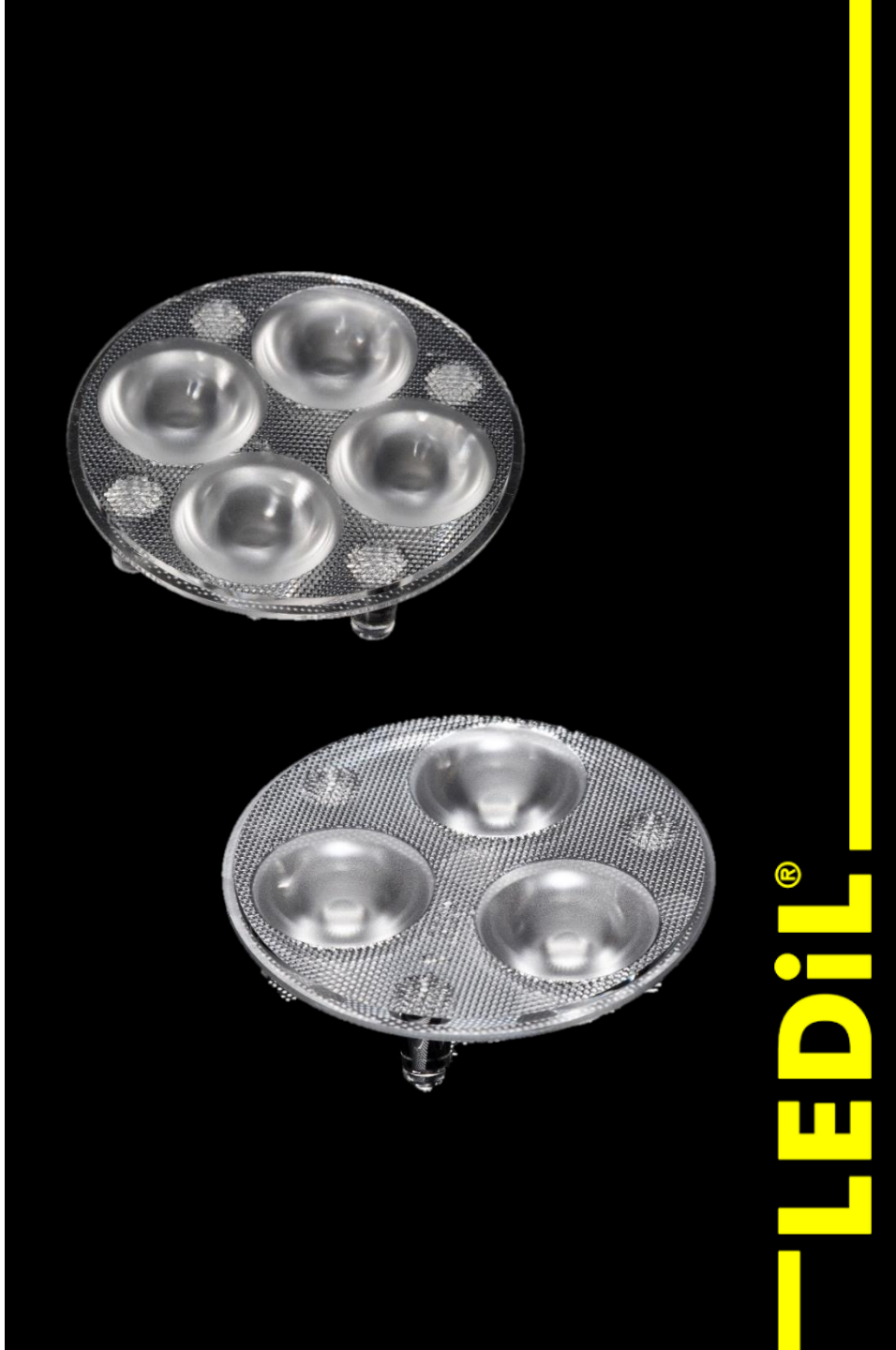
C13736_MELODY-4-S



C12782_MELODY-4-M



C13095_MELODY-3-M



SANDRA

Ø67 mm 12-up multi-lens family

- Cost-efficient solution for many lighting applications
- The largest optical array diameter LEDiL offers with 12 LED sources providing enough light for many applications
- High efficiency optical design, typically 20 % more efficient than non-optimized competitors

Features

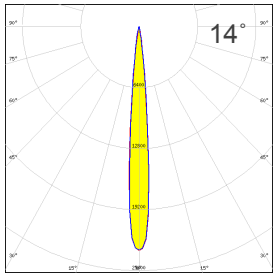
- Ø67 mm, H 11.1 mm
- Optical array of 12 sources speed up manufacturing
- Market-leading efficiency of ≈90 %
- Aesthetically pleasing and even beam pattern

Typical Applications

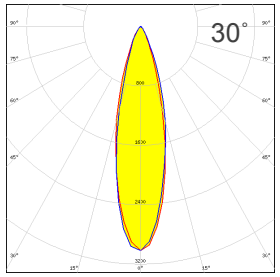
- Track lighting
- Downlights
- Retail lighting
- Generic indoor lighting

Compatibility

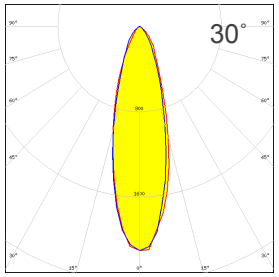
- Compatible with up to 3535 size LED packages
- Designed for a wide range of LEDs from Cree, Nichia, Osram and Philips Lumileds



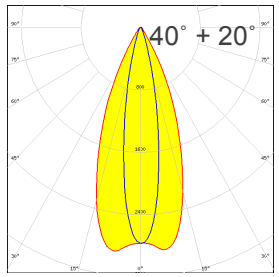
C13236_SANDRA-12-S



C11814_SANDRA-12-M



C11700_SANDRA-12-W



C14250_SANDRA-12-O

SATU

Ø21.8 mm 3-up multi-lens family

- The smallest 3-up multi-lens on the market

Features

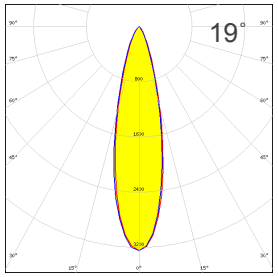
- Ø21.8 mm, H 8.9 mm
- The flange enables the easy addition of an O-ring or faceplate without overlapping with optical surfaces

Typical Applications

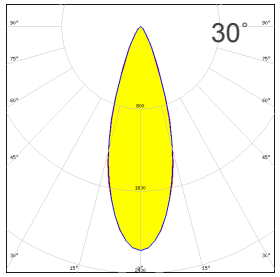
- Jewellery shops
- Museums
- Reading lights
- Track lights
- Compact torches and head lamps

Compatibility

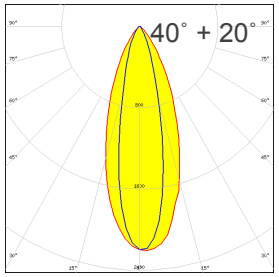
- Up to 3535 size LED packages



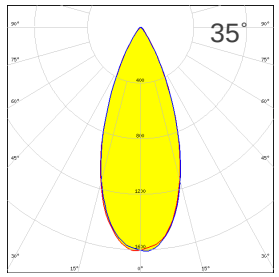
C13234_SATU-S



C11602-SATU-M



C13297_SATU-O



C13235_SATU-W

LEDiL®

TUIJA

Ø50 mm 3-up multi-lens family

- Multiple beams including a narrow 12˚ beam
- For applications where a compact light source is required

Features

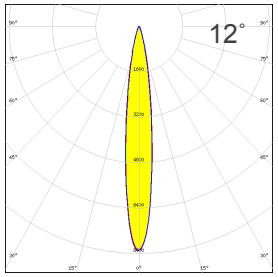
- Ø50 mm, H 14.5 mm
- MR16 standard PMMA lens

Typical Applications

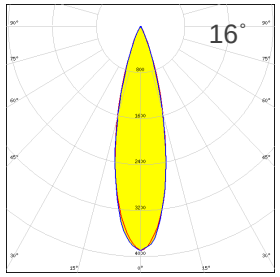
- Downlight
- Tracklight
- Bikelight

Compatibility

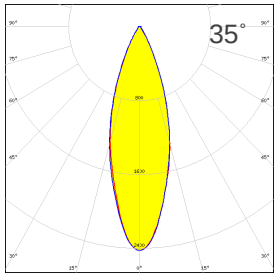
- Compatible with up to 3535 size LED packages



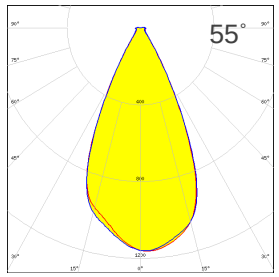
C11192_TUIJA-3-SS



C11193_TUIJA-3-M



C12150_TUIJA-3-M2



C11191_TUIJA-3-W

DOWN LIGHT

TRACK LIGHT

LEDiL®

VIRPI

25-up multi-lens family for spot- and track lighting applications

- High power LEDs arrayed in a 5 by 5 cluster delivering high lumen output in a compact package
- Tight clustering and special design produces uniform lighting
- Perfectly balanced with precision and power for horticultural lighting

Features

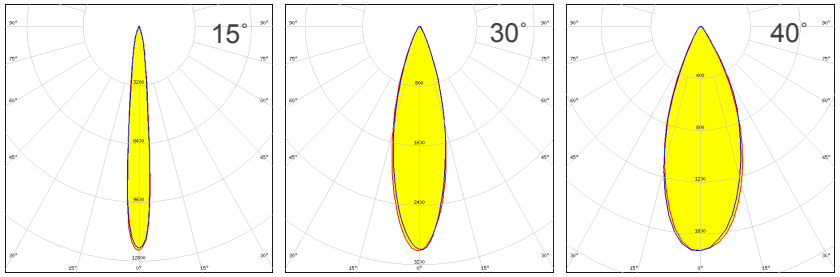
- 74.9 x 74.9 mm, H 9.4 mm
- 25 High-Power LEDs in a tight array
- 3 different beam solutions to optimize installation height (S-14°, M-28° and W-42°)

Typical Applications

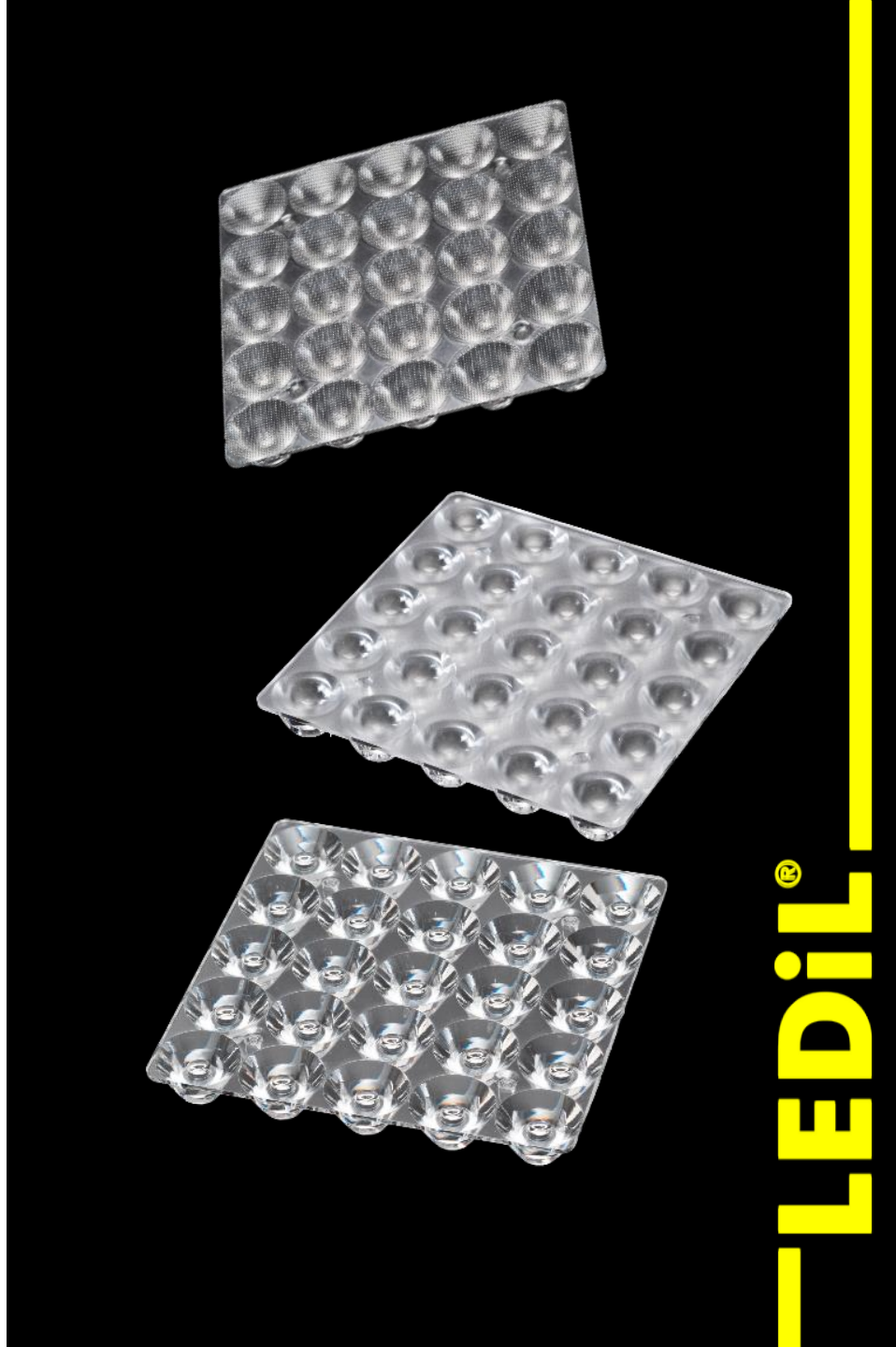
- Retail lighting and other applications where high luminous flux is desired
- Track lighting fixtures
- Horticultural lighting

Compatibility

- Up to 3535 size LED packages



C12607_VIRPI-S C12608_VIRPI-M C12609_VIRPI-W



NEW

LILIAN

Narrow linear optics family for architectural lighting

- Pitch-free optical design for easy scalability of lumen output
- Homogenous light-emitting surface with minimal dot visibility
- Accurate 10° x 80° beam with long reach for wall-grazing applications

Features

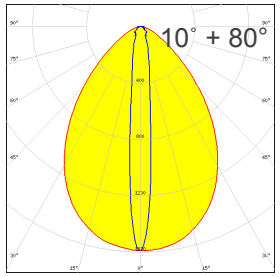
- 1 ft long, 27 mm wide
- Made from PMMA
- Free LED pitch
- Integrated installation clips

Typical Applications

- Architectural lighting
- Wall grazing
- Cove lighting
- Facade lighting

Compatibility

- Optimized for top emitting CSP LED
- Works with up to 3535 HP LEDs
- Optimized for 1.0 mm thick profiles



C16507_LILIAN-ON

SHELLY

6X1 lens family for shelf lighting

- Two lens versions for shelf lighting with a smart snappable design
- SHELLY-N is designed especially for front illumination of objects on shelves
- SHELLY-WAS is designed to light the back wall of the shelf to control lighting contrast

Features

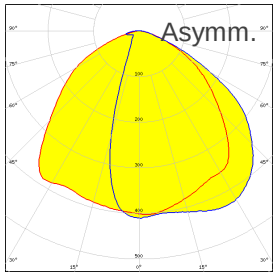
- 119.8 x 19.6 mm, H: -WAS 7.6 mm, -N 7 mm
- Both versions feature modular six high power LED design
- 1” LED pitch as in LEDiL’s STRADA-6X1 family
- Can be broken into single lenses if needed
- Tilted beam reduces glaring, wideness provides even and pleasant illumination

Typical Applications

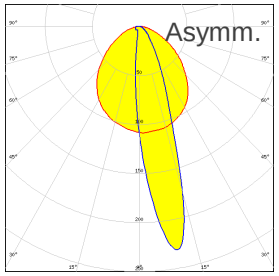
- Retail lighting
- Shelf lighting
- Back wall lighting
- Highlighting objects

Compatibility

- Up to 3535 size LED packages



C14275_SHELLY-T-6X1-N



C14274_SHELLY-T-6X1-WAS

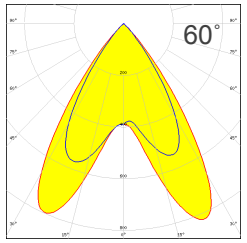
FLORENTINA-12X1

Versatile module solution for comfortable lighting

- LEDiL‘s Dark Light (UGR <16) product family with a hybrid of black reflector and lens
- 12-up linear module with multiholder for TINA lenses and shade
- Black or white shade

Features

- 29 x 287 mm, H 25.1 mm
- Automatic line-up of optics
- Simplified assembly



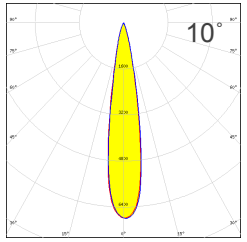
CC16392_FLORENTINA-BW

Typical Applications

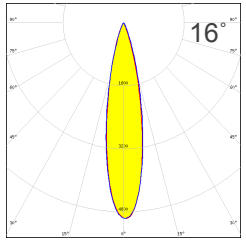
- Achitectural indoor
- Retail
- Office

Compatibility

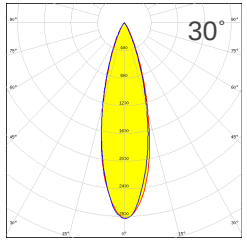
- Compatible with LEDiL standard TINA/TINA2 lenses (up to 3535 LED size packages)
- Optional FLORENCE-1R-CLIPs available for fastening



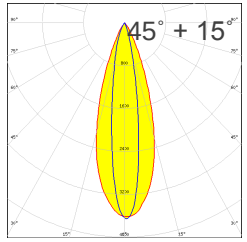
CC14855_FLORENTINA-RS



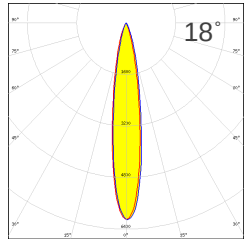
CC14999_FLORENTINA-SS



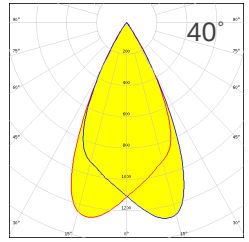
CC15000_FLORENTINA-M



CC15001_FLORENTINA-O



CC15002_FLORENTINA-D



FC15003_FLORENTINA-W

VANESSA

12X1 linear lens family for wall washing

- 12-up lens module for mid- and high power LEDs
- A versatile and cost efficient linear module
- Enables the creation of compact yet efficient luminaires capable of output exceeding 1000 lumens

Features

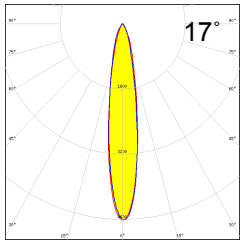
- 295 x 16 mm, H 8 mm
- Optical efficiency over 90 %
- Easy to install

Typical Applications

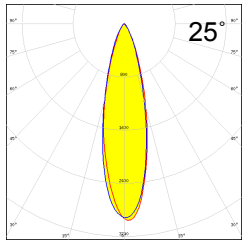
- Architectural lighting
- Wall-washing and wall-grazing
- Work lighting
- Hospitality lighting

Compatibility

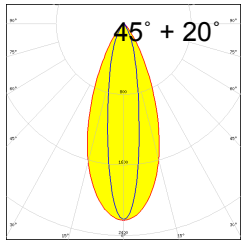
- Compatible with up to 3535 size LED packages
- Original VANESSA was designed for mid-power, -B versions are designed for lighting class such as OSLON Square and SSL



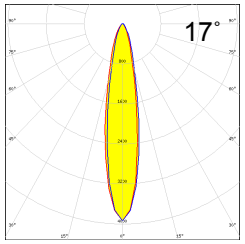
C13454_VANESSA-S



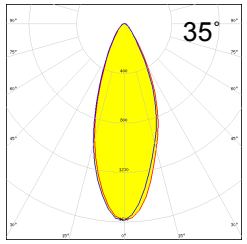
C13459_VANESSA-M



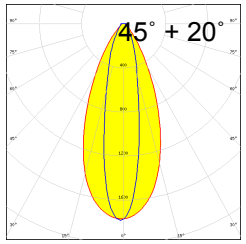
C13460_VANESSA-O



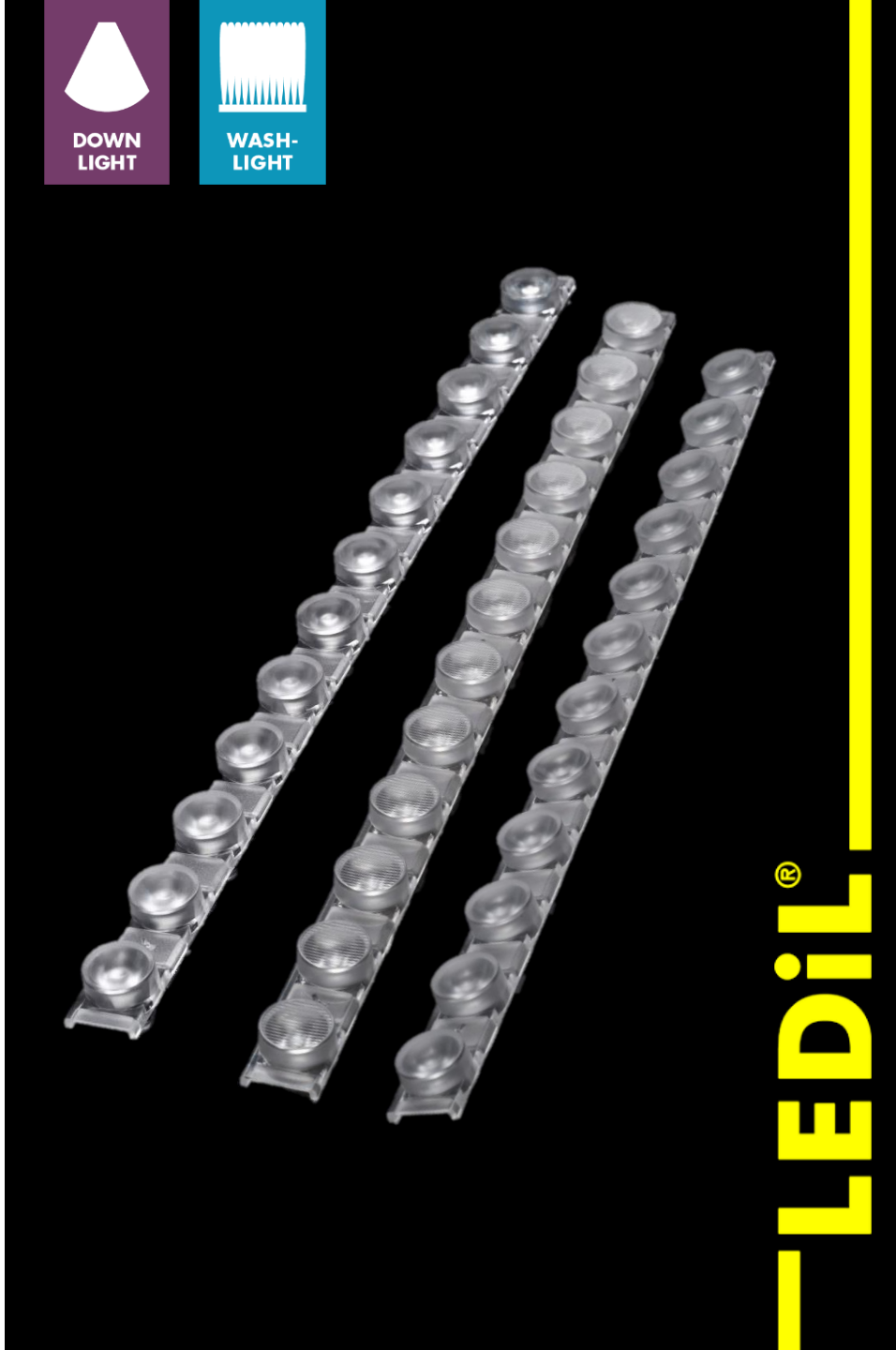
C13869_VANESSA-B-S



C13870_VANESSA-B-W



C13871_VANESSA-B-O



BILLIE

Compact Ø21.5 mm asymmetric billboard lighting optic

- A rectangular beam wall-washing optic with excellent beam uniformity
- The asymmetrically tilted beam ensures uniform illumination on vertical surfaces
- Shares the same footprint with LEILA product series

Features

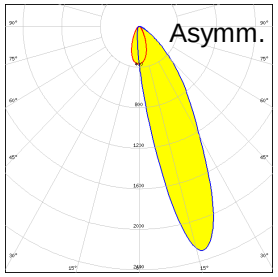
- Ø21.5 mm, H 16.1 mm
- Easy and accurate mounting using positioning pins

Typical Applications

- For illuminating vertical surfaces
- Indoor and outdoor architectural lighting
- Billboard lighting
- Perfect solution for small concealed fixtures

Compatibility

- Compatible with up to 3535 size LED packages
- For XP/XT series of LEDs



FCA13329_BILLIE-A/-B

WASH-LIGHT

LEDiL®

RITA

Compact size wall-washing reflector family

- Family of small, white asymmetric reflectors
- Even, asymmetric light pattern with no hot spots
- Also versions with color mixing capabilities

Features

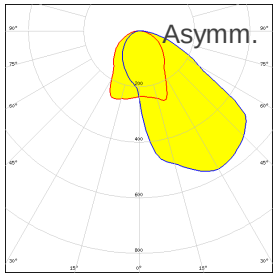
- ~35 x 29 mm
- Normal and RZ versions of RITA-A and RITA-WAS
- Made from Hyper Reflective white PC

Typical Applications

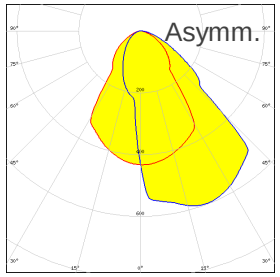
- Achitectural
- Wall grazing and wall washing
- Decorative lamps, common in old cities

Compatibility

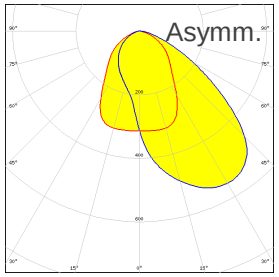
- Compatible with up to 5050 size LED packages



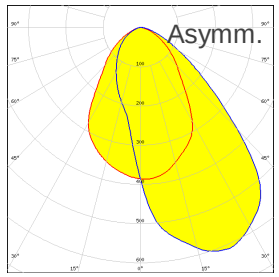
C12512_RITA-A



C12516_RITA-WAS



CX14342_RITA-A-RZ



CX14343_RITA-WAS-RZ

WASH-LIGHT

DECO LIGHT

LEDiL®

BARBARA-G2

Ø70 mm reflectors with improved light quality

- Second generation BARBARA reflectors compatible with LEDiL HEKLA
- High-quality surfaces to reduce spill-light and glare
- Can be used with RZ lens for tunable white and colour mixing applications

Features

- Ø70 mm, H 19 mm (21.1 mm with socket)
- Compatible with RZ lens made out of PC
- Fastening to the PCB with twisting bayonet mechanism

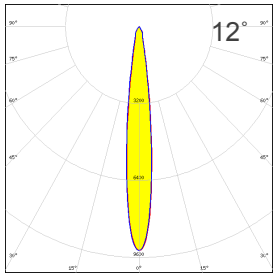
Typical Applications

- Retail
- Track lighting
- Down lighting
- Stage lighting
- Retrofit

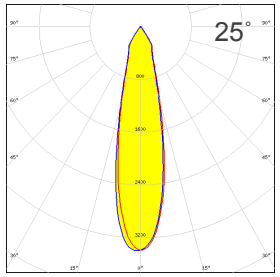
Compatibility

- COBs with LES size up to 18 mm
- LEDiL HEKLA

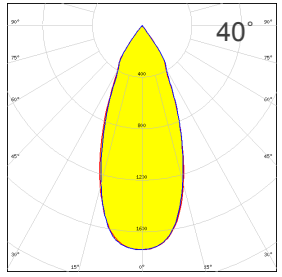
LES 10 mm



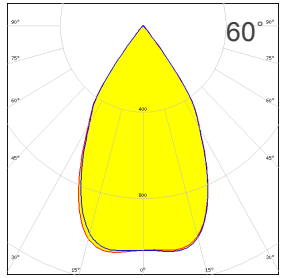
F16363_BARBARA-G2-S



F16364_BARBARA-G2-M



F16366_BARBARA-G2-WW



F16366_BARBARA-G2-WW

DOWN LIGHT

TRACK LIGHT

KONNTAKT

LEDiL®

BROOKE-G2

Ø45 mm system reflector family for next generation COBs

- Second generation BROOKE reflectors compatible with LEDiL HEKLA
- Compact reflectors allowing construction of compact luminaires with high density COBs and smaller LES
- Very good heat durability

Features

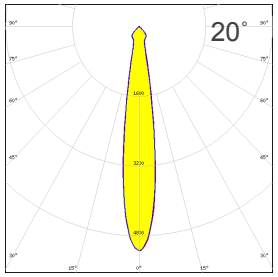
- Ø45 mm, H 19.7 mm (21 mm with socket)
- Optional color mixing sublens accessories to allow smoother light distribution with patented color mixing features
- Typical FWHM
  - BROOKE-G2-S: 18˚
  - BROOKE-G2-M: 28˚
  - BROOKE-G2-W: 47˚
- Typical efficiency: 92 %

Typical Applications

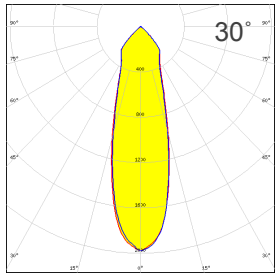
- Directional indoor architectural luminaires
- Track lighting
- Recessed downlights
- Retail lighting or mixing features

Compatibility

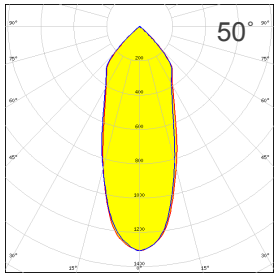
- COBs with LES size up to 19 mm
- LEDiL HEKLA



F14738_BROOKE-G2-S



F14739_BROOKE-G2-M



F14740_BROOKE-G2-W

MIRELLA-G2

Ø50 mm LEDiL's System Reflector family for small size COBs

- Second generation MIRELLA reflectors compatible with LEDiL HEKLA
- Typical beam angles 15°, 25°, 35° and 55˚
- Additional sublenses provides good color mixing quality and protect the COB from handling and dust

Features

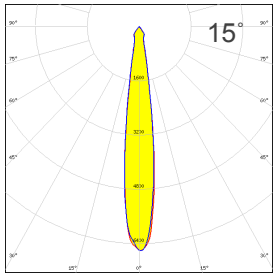
- Ø49.9 mm, H 24.8 mm, MR16 size
- Fastening to the PCB with twisting bayonet mechanism
- Optional lenses: clear, diffused and color mixing lens

Typical Applications

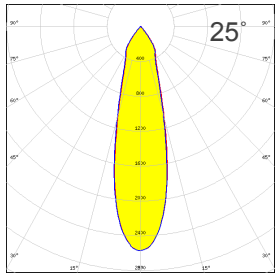
- Track lighting
- Down lighting
- Outdoor spotlights
- Highlighting stationary objects and statues

Compatibility

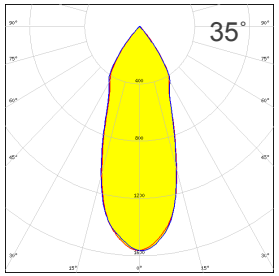
- COBs with LES size up to 14 mm
- Optimized for LEDiL HEKLA-A, -C, -D, -F, -G and -J sockets with max. 12 mm LES COBs



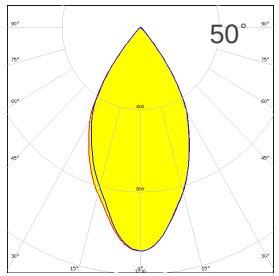
F15558_MIRELLA-G2-S



F15559_MIRELLA-G2-M



F15560_MIRELLA-G2-W

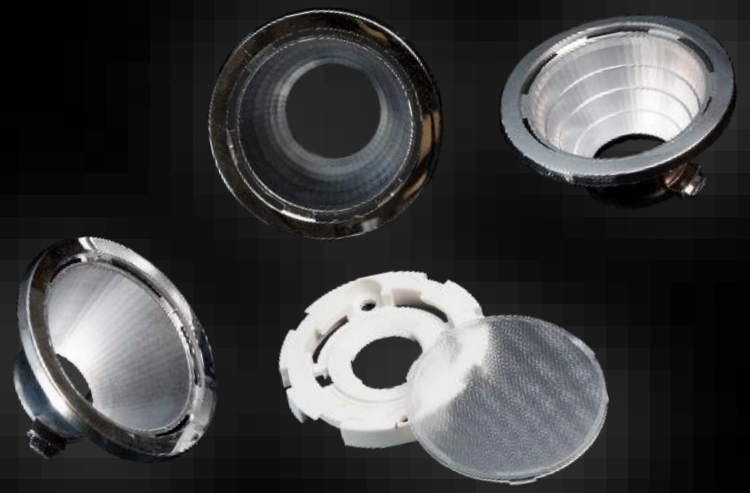


F16002_MIRELLA-G2-WW

DOWN LIGHT

TRACK LIGHT

KONNTAKT



Additional lenses:
C13333_MIRELLA-CL
C12479_MIRELLA-DL
C13723_MIRELLA-RZL

LEDiL®

ANGELA

Ø120 mm LEDiL System Reflectors for large COBs

- Reflector family compatible with various sockets and solderless connectors
- Beam angles (FWHM) from a very narrow 10° to an extremely wide 80° flood

Features

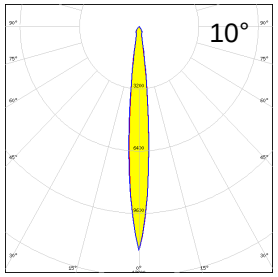
- Ø120 mm, H 74.5 mm
- Shares the mechanical interface with ANGELETTE and ANGELINA
- An optional color mixing sublens available

Typical Applications

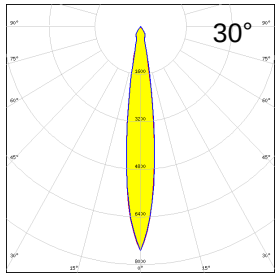
- Downlighting
- Interior architectural lighting

Compatibility

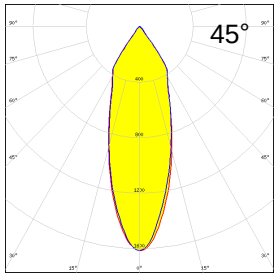
- COB’s with LES size up to 32 mm
- 3rd party connectors from Ideal, Bender+Wirth, TE and Molex
- Zhaga solderless connectors



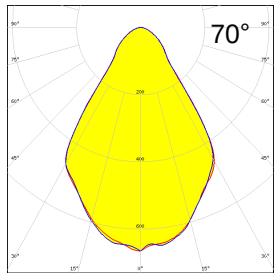
F13379_ANGELA-S



F13380_ANGELA-M



F13381_ANGELA-W



F13840_ANGELA-XW

ANGELINA

Ø82 mm LEDiL System Reflectors for large COBs

- Reflector family compatible with various sockets and solderless connectors
- Based on the ANGELA-interface
- Four beam types

Features

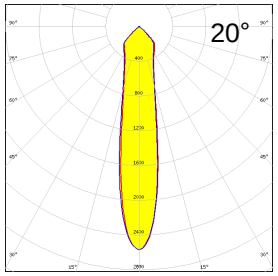
- Ø82 mm, H 31 mm
- Optional color mixing sublens available

Typical Applications

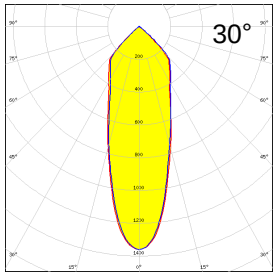
- Downlighting
- Architectural lighting

Compatibility

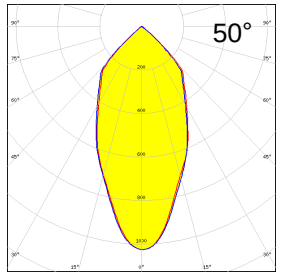
- COBs with LES size up to 32 mm
- 3rd party connectors from Ideal, Bender+Wirth, Te and Molex



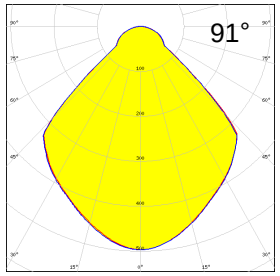
F13325_ANGELINA-S



F13401_ANGELINA-M



F13402_ANGELINA-W



F13838_ANGELINA-XW

LENA

Ø111 mm LEDiL System Reflector family

- Easy twist and lock latching mechanism
- An asymmetric version optimized for wall-wash lighting
- Various sublenses and sockets

Features

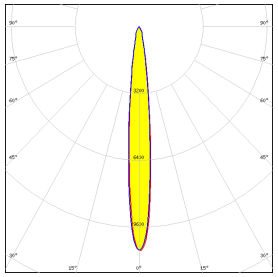
- Ø111 mm, H 86 mm
- The same mounting base with LENINA
- Polycarbonate reflector with metallized, laquered finish
- Optional clear or diffuser lenses
- LENA sockets available

Typical Applications

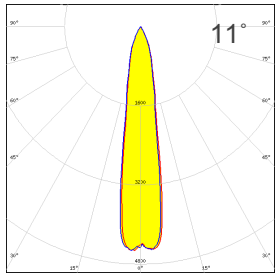
- Architectural lighting

Compatibility

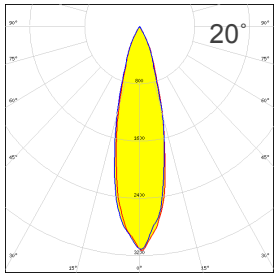
- COBs with LES size up to 35 mm
- 3rd party connectors from Ideal, Stucchi and Bender+Wirth



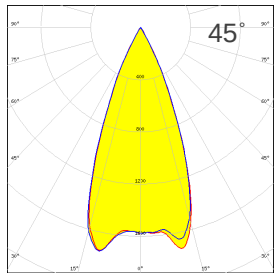
C13117_LENA-SS



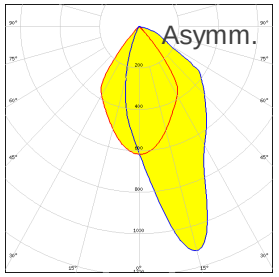
C11979_LENA-S



C12154_LENA-M



C11980_LENA-W



C12948_LENA-WAS

BLONDIE

Free-form reflector design for façade and wall washing applications

- Very tight blade-type beam for wall washing
- Excellent efficiency compared to typical cylindrical lenses
- Two-sided design; uniform wall beam on the opposite side is adjustable with interchangeable reflector bits (included)

Features

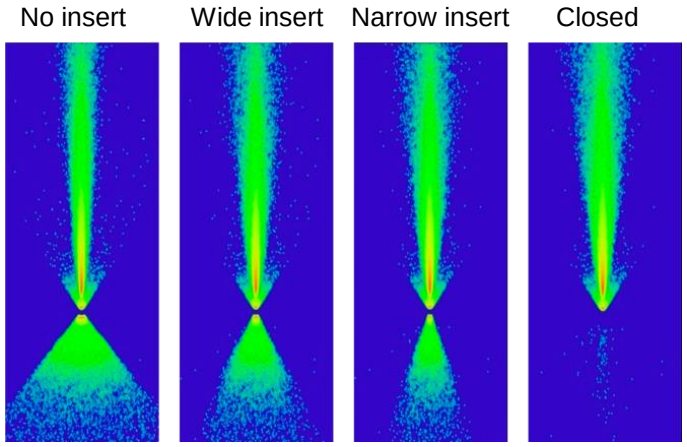
- 92 x 78.3 mm, H 45 mm
- Free-form reflector design
- Downward beam width can be modified with included inserts
- For high power LEDs, energy efficient solution
- High efficiency 85-90 %

Typical Applications

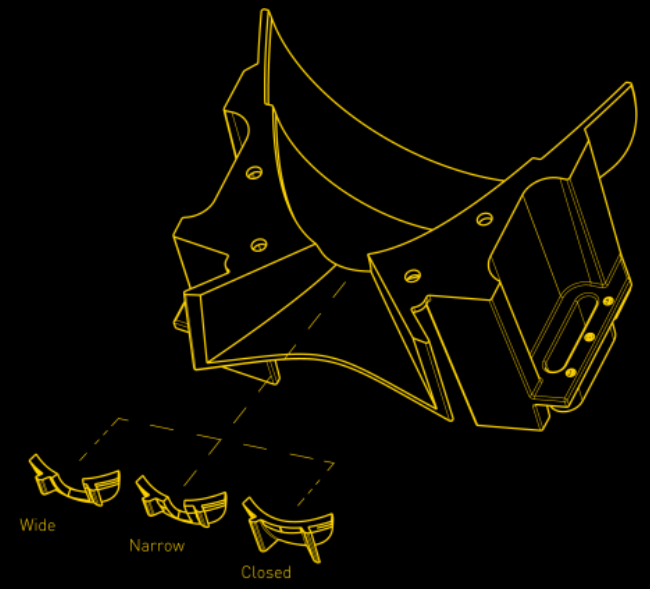
- Architectural lighting
- Facade lighting
- Wall washing applications

Compatibility

- Up to 7070 size LED packages



C13898_BLONDIE-A



LEDiL®