Engine DLA G1 ready2apply ClickDIM SNC

Engine DLA ESSENCE

Product description

- Downlight module suitable for direct installation in ceilings (ready2apply)
- Module with integrated electronics and heatsink
- Implemented ClickDIM function: 10 %, 50 % and 100 %
- Light engine operating with 230 V AC
- Typ. luminous flux category: 1,000 / 2,000 lm
- High system efficacy up to 90 lm/W at tp = 65 °C
- Optional reflector solution with 60° and 90°
- Small colour tolerance MacAdam 4
- Nominal life-time 30,000 h (L70/B50)
- 3-year guarantee

Standards, page 4

Colour temperatures and tolerances, page 7

DLA G1 100mm 1000lm 8xx R ClickD SNC

DLA G1 150mm 2000lm 8xx R ClickD SNC

DLA G1 100mm 1000lm 8x0 R SH ClickD SNC

DLA G1 150mm 2000lm 8x0 R SH ClickD SNC

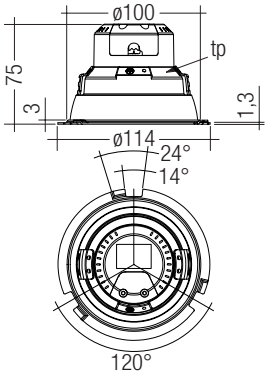
CE RoHS

Engine DLA G1 ready2apply ClickDIM SNC

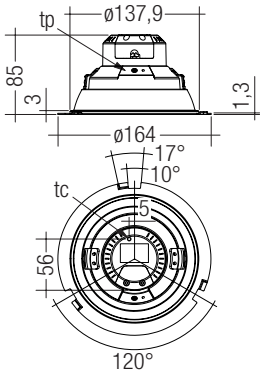
Engine DLA ESSENCE

Technical data

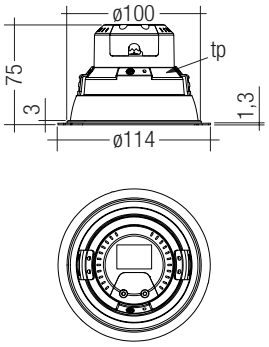
Rated supply voltage	220 – 240 V
Input voltage range	198 – 264 V
Mains frequency	50 / 60 Hz
ClickDIM level settable	10 %, 50 % and 100 %
Typ. λ	0.9
THD	< 27 %
Flicker	< 20 %
Output LF current ripple (< 120 Hz)	< 20 %
Beam characteristic (with reflector)	110° (60°/90°)
Ambient temperature ta	-20 … +40 °C
Typ. tp temperature①	65 °C
tc temperature (100 mm)①	75 °C
tc temperature (150 mm)①	85 °C
Type of protection	IP20



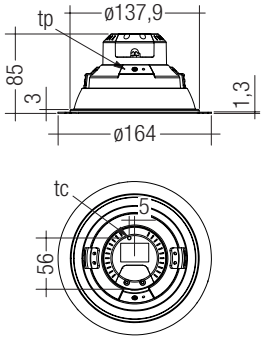
DLA G1 100mm 1000lm 8xx R ClickD SNC



DLA G1 150mm 2000lm 8xx R ClickD SNC



DLA G1 100mm 1000lm 8x0 R SH ClickD SNC



DLA G1 150mm 2000lm 8x0 R SH ClickD SNC

Ordering data

Type	Article number	Colour temperature	Casing	Packaging	Weight per pc.
DLA G1 100mm 1000lm 830 R ClickD SNC	**87500588**	3,000 K	yes	36 pc(s).	0.125 kg
DLA G1 100mm 1000lm 840 R ClickD SNC	**87500589**	4,000 K	yes	36 pc(s).	0.125 kg
DLA G1 100mm 1000lm 865 R ClickD SNC	**87500592**	6,500 K	yes	36 pc(s).	0.125 kg
DLA G1 150mm 2000lm 830 R ClickD SNC	**87500590**	3,000 K	yes	36 pc(s).	0.196 kg
DLA G1 150mm 2000lm 840 R ClickD SNC	**87500591**	4,000 K	yes	36 pc(s).	0.196 kg
DLA G1 150mm 2000lm 865 R ClickD SNC	**87500593**	6,500 K	yes	36 pc(s).	0.196 kg
DLA G1 100mm 1000lm 830 R SH ClickD SNC	**87500594**	3,000 K	yes	36 pc(s).	0.125 kg
DLA G1 100mm 1000lm 840 R SH ClickD SNC	**87500595**	4,000 K	yes	36 pc(s).	0.125 kg
DLA G1 150mm 2000lm 830 R SH ClickD SNC	**87500596**	3,000 K	yes	36 pc(s).	0.196 kg
DLA G1 150mm 2000lm 840 R SH ClickD SNC	**87500597**	4,000 K	yes	36 pc(s).	0.196 kg

Specific technical data

Type	Photometric code	Luminous flux at tp = 65 °C②	Luminous flux with 60°/90° reflector at tp = 65 °C②	Input power③	Luminous efficacy at tp = 65 °C	Luminous efficacy with 60°/90° reflector at tp = 65 °C	Colour rendering index CRI	Energy classification
DLA G1 100mm 1000lm 830 xxx ClickD SNC	830/459	1,000 lm	1,020 lm	11.7 W	85 lm/W	86 lm/W	80	A+
DLA G1 100mm 1000lm 840 xxx ClickD SNC	840/459	1,050 lm	1,070 lm	11.7 W	89 lm/W	90 lm/W	80	A+
DLA G1 100mm 1000lm 865 xxx ClickD SNC	865/459	1,050 lm	1,070 lm	11.7 W	91 lm/W	95 lm/W	80	A+
DLA G1 150mm 2000lm 830 xxx ClickD SNC	830/459	2,000 lm	2,040 lm	23.0 W	86 lm/W	88 lm/W	80	A+
DLA G1 150mm 2000lm 840 xxx ClickD SNC	840/459	2,100 lm	2,140 lm	23.0 W	90 lm/W	92 lm/W	80	A+
DLA G1 150mm 2000lm 865 xxx ClickD SNC	865/459	2,130 lm	2,160 lm	23.0 W	91 lm/W	93 lm/W	80	A+

① If the max. temperature limits are exceeded, the life of the system will be greatly reduced or the system may be damaged. The temperature of the LED engine at the tp-point is to be measured in the thermally stable state with a temperature sensor or or temperature-sensitive sticker as per EN 60598-1. For the precise position of the tp point see the drawing on page 4.

② Tolerance range for optical data: ±10 %.

③ All values at tp = 65 °C.

ACCES-SORIES

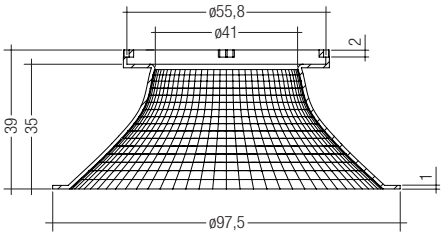
ACD REFLECTOR

Product description

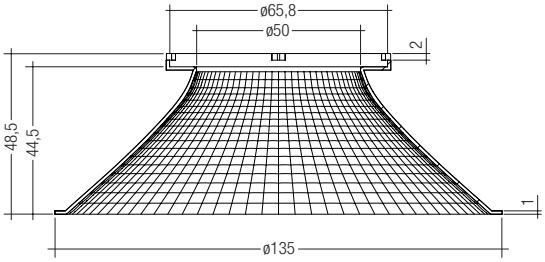
- Reflector for DLA modules with 60° or 90°

ACD REFLECTOR 100mm

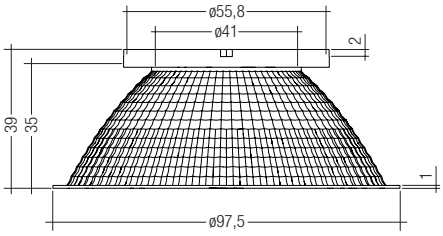
ACD REFLECTOR 150mm



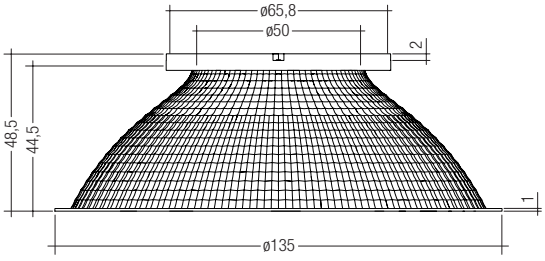
ACD REFLECTOR 100mm 90 D



ACD REFLECTOR 150mm 90 D



ACD REFLECTOR 100mm 60 D



ACD REFLECTOR 150mm 60 D

Ordering data

Type	Article number	Diameter	Packaging	Weight per pc.
ACD REFLECTOR 100mm 60 D	**28001094**	100 mm	36 pc(s).	0.048 kg
ACD REFLECTOR 100mm 90 D	**28001095**	100 mm	36 pc(s).	0.050 kg
ACD REFLECTOR 150mm 60 D	**28001096**	150 mm	36 pc(s).	0.085 kg
ACD REFLECTOR 150mm 90 D	**28001097**	150 mm	36 pc(s).	0.097 kg

1. Standards

EN 62031
EN 62471
EN 61547
EN 55015
EN 61000-3-2
EN 61000-3-3
EN 62493

1.1 Glow wire test

according to EN 62031 with increased temperature of 850 °C passed.

1.2 Photometric code

Key for photometric code, e. g. 830 / 469

1st digit		2nd + 3rd digit	4th digit	5th digit	6th digit	
Code	CRI	Colour temperature in Kelvin x 100	McAdam initial	McAdam after 25% of the life-time (max.6000h)	Luminous flux after 25% of the life-time (max.6000h)	
					Code	Luminous flux
7	70 – 79				7	≥ 70 %
8	80 – 89				8	≥ 80 %
9	≥90				9	≥ 90 %

1.3 Isolation and electric strength testing of luminaires

Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) or ENEC 303-Annex A, each luminaire should be submitted to an isolation test with 500 V DC for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal.
The isolation resistance must be at least 2 MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1500 V AC (or 1.414 x 1500 V DC). To avoid damage to the electronic devices this test must not be conducted.

2. Thermal details

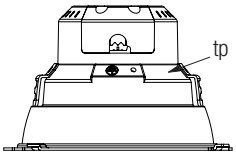
2.1 tp point, ambient temperature and life-time

The temperature at tp reference point is crucial for the light output and life-time of a LED product.
The operating temperature of a LED product is crucial for the light output, the product life-time but also for the product safety.
The thermal limits can be checked at the tp/tc point.
On page 5 the lumen maintenance is shown in relation to the temperature at tp.
tp,rated shows the temperature at which the rated values are reached.
tc shows the thermal limit for safety reason und must never be exceeded under normal conditions.

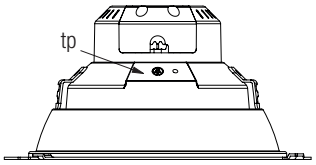
For the DLA G1 ClickD SNC a tp temperature of 65 °C has to be complied in order to achieve an optimum between heat sink requirements, light output and life-time.

Compliance with the maximum permissible reference temperature at the tp point must be checked under operating conditions in a thermally stable state. The maximum value must be determined under worst-case conditions for the relevant application.

The tc and tp temperature of LED modules from Tridonic are measured at the same reference point.



DLA G1 100mm 1000lm 8xx xxx
ClickD SNC



DLA G1 150mm 2000lm 8xx xxx
ClickD SNC

2.2 Thermal behaviour

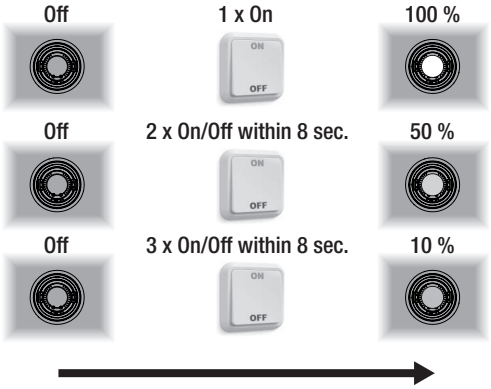
storage temperature	-30 … +80 °C
operating temperature ta	-20 … +40 °C
tp	65 °C
tc (100 mm)	75 °C
tc (150 mm)	85 °C
max. humidity	30 … 85 %

Operation only in non condensing environment.
Humidity during processing of the module should be between 30 to 70 %.

3. Installation / wiring

3.1 Electrical supply/choise of LED Driver

The DLA G1 ClickD SNC from Tridonic are protected against mains transients up to 1 kV.
The DLA G1 ClickD SNC has to operated with 230 V AC. Integrated ClickDIM function, settable dimmlevel of 10 %, 50 % and 100 %.



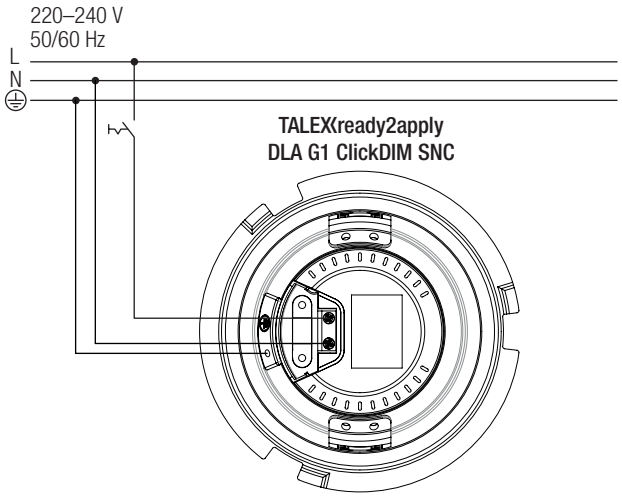
ClickDIM allows you to switch between three different dimming levels (100 %, 50 %, 10 %) via a standard wall switch with Off and On position.

The device switches from one dimming level to the next in a sequential order:
- When the device is initially turned on, it will switch to the standard dimming level of 100 %.
- Turning the device off and on once, it will switch to the next dimming level.
- Turning the device off and on twice, it will switch to the dimming level after the next.

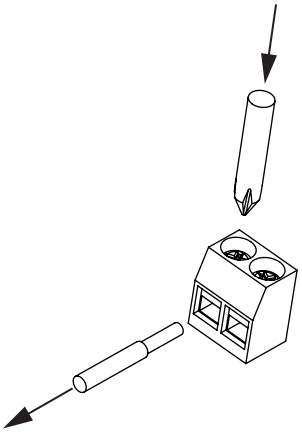
Note:
Turning the device off and on must be done within 8 seconds. If the device is turned off for more than 8 seconds, it is possible that the device switches to the standard dimming level of 100 % when turned on again.

Turning the device off for more than 20 seconds will synchronize all the lamps connected to a wall switch, that is, bring them all to a uniform dimming level.

3.2 Wiring

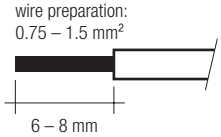


3.3 Release of the wiring



3.4 Wiring type and cross section

The wiring can be solid or stranded wires with a cross section of 0.75 to 1.5 mm².
For the push-wire connection you have to strip the insulation (6–8 mm).
Loosen wire through twisting and pulling.



3.5 Thermally insulation material

LED module is not suitable for covering with thermally insulation material.

3.6 Maximum loading of automatic circuit breakers

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current	
Installation Ø	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	I_{max}	time
DLA G1 100mm 1000lm 8xx ClickD SNC	120	160	200	240	60	80	100	120	2 A	100 µs

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current	
Installation Ø	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	I_{max}	time
DLA G1 150mm 2000lm 8xx ClickD SNC	60	90	120	140	30	45	60	70	5 A	100 µs

Calculation uses typical values from ABB series S200 as a reference.
Actual values may differ due to used circuit breaker types and installation environment.

4. Life-time

4.1 Life-time, lumen maintenance and failure rate

The light output of an LED module decreases over the life-time, this is characterized with the L value.
L70 means that the LED module will give 70 % of its initial luminous flux. This value is always related to the number of operation hours and therefore defines the life-time of an LED module.

As the L value is a statistical value and the lumen maintenace may vary over the delivered LED modules.
The B value defines the amount of modules which are below the specific L value, e.g. L70B10 means 10 % of the LED modules are below 70 % of the inital luminous flux, respectivly 90 % will be above 70 % of the initial value. In addition the
percentage of failed modules (fatal failure) is characterized by the C value.

The F value is the combination of the B and C value. That means for F degradation and complete failures are considered, e.g. L70F10 means 10 % of the LED modules may fail or be below 70 % of the initial luminous flux.

4.2 Lumen maintenance

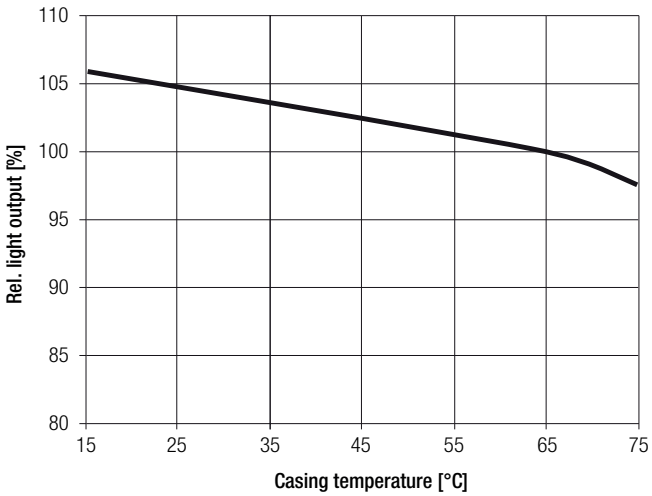
Life-time declarations are informative and represent no warranty claim.

tp temperature	L70 / F50
65 °C	30,000 h

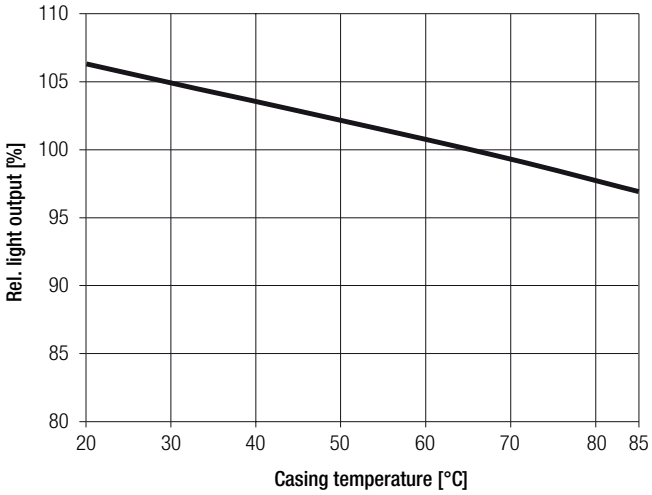
5. Optical values

5.1 Typ. light output vs. tc temperature

DLA G1 100mm 1000lm 8x0 xxx ClickD SNC



DLA G1 150mm 2000lm 8x0 xxx ClickD SNC



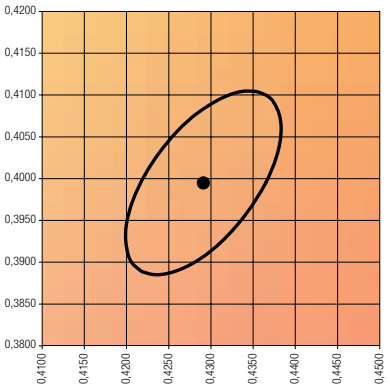
6. Photometric charcteristics

6.1 Coordinates and tolerances according to CIE 1931

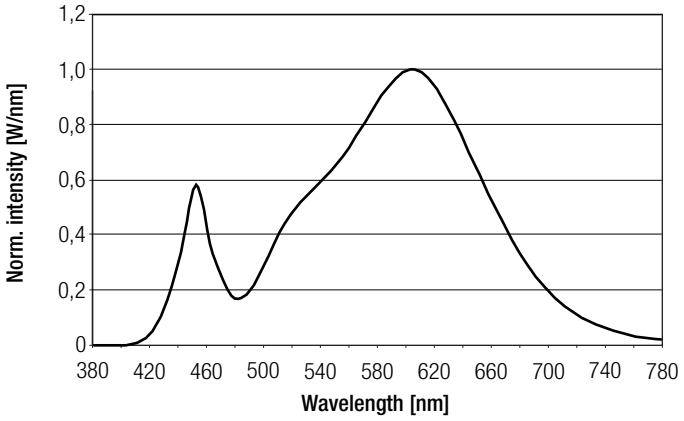
The specified colour coordinates are measured integral after a settling time of 100 ms. The current impuls depends on the module type.
The ambient temperature of the measurement is ta = 25 °C. The measurement tolerance of the colour coordinates are ± 0.01.

3,000 K

	x0	y0
Centre	0.4287	0.3940

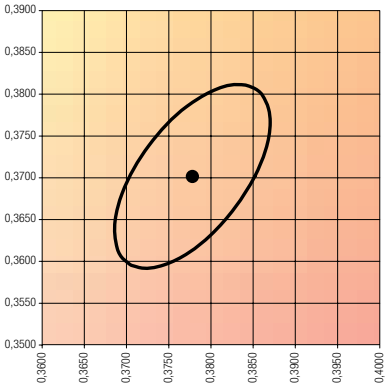


MacAdam ellipse: 4SDCM

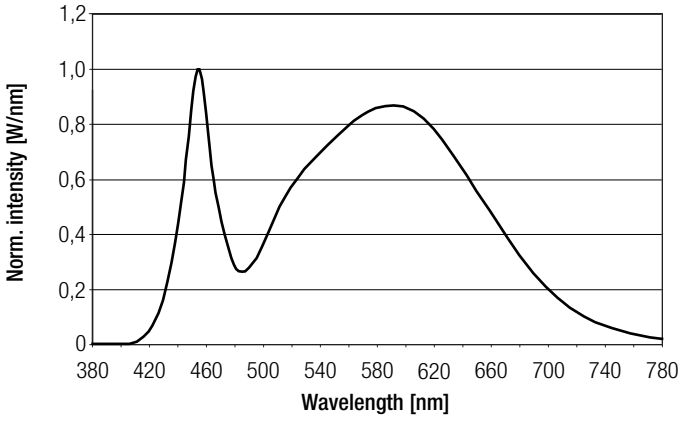


4,000 K

	x0	y0
Centre	0.3767	0.3702

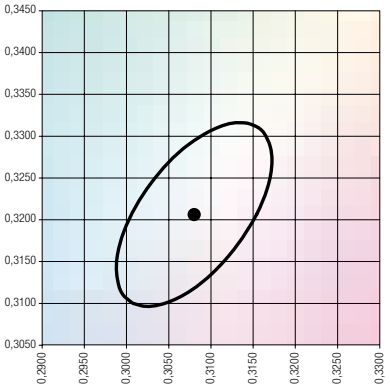


MacAdam ellipse: 4SDCM

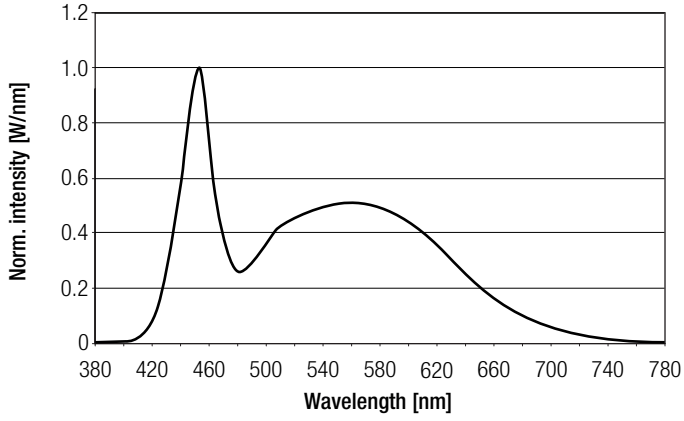


6,500 K

	x0	y0
Centre	0.3081	0.3204

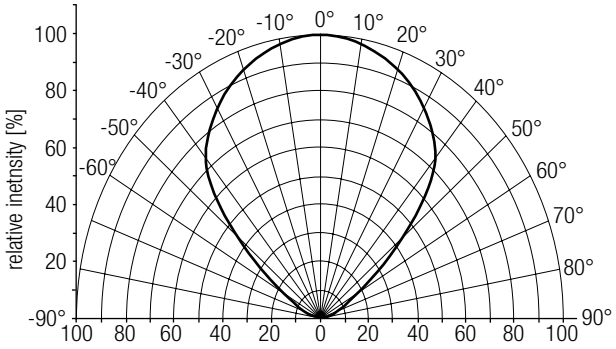


MacAdam ellipse: 4SDCM

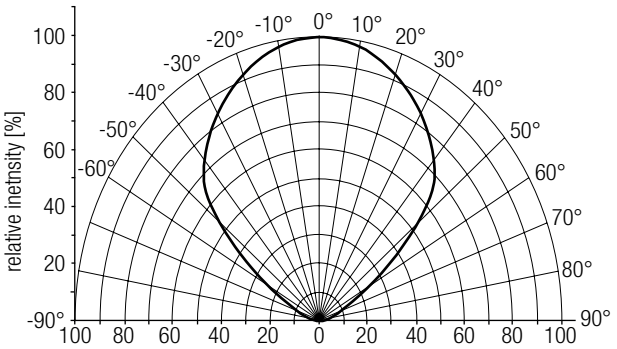


6.2 Light distribution

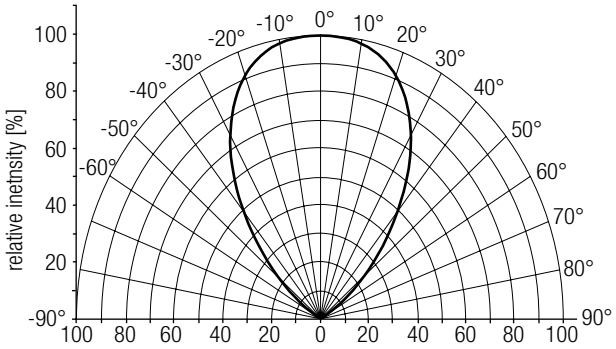
DLA G1 100mm 1000lm 8x0 xxx ClickD SNC



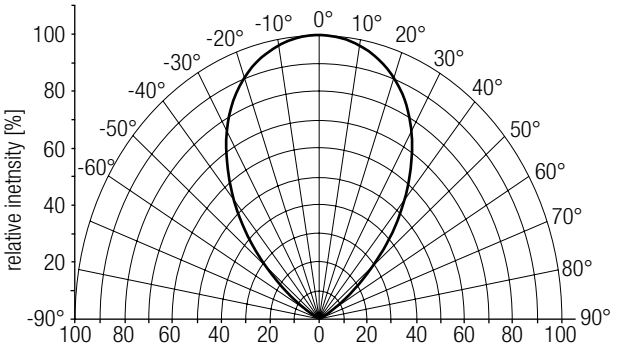
DLA G1 150mm 2000lm 8x0 xxx ClickD SNC



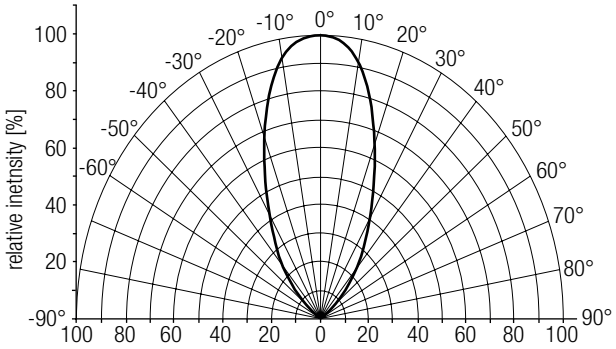
DLA G1 100mm 1000lm 8x0 xxx ClickD SNC with 90° reflector



DLA G1 150mm 2000lm 8x0 xxx ClickD SNC with 90° reflector



DLA G1 100mm 1000lm 8x0 xxx ClickD SNC with 60° reflector



DLA G1 150mm 2000lm 8x0 xxx ClickD SNC with 60° reflector