



## Engine DLA G1 ready2apply SNC

Engine DLA ESSENCE

### Product description

- Downlight module suitable for direct installation in ceilings (ready2apply)
- Module with integrated electronics and heatsink
- 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  $t_p = 65\text{ }^\circ\text{C}$
- Optional reflector solution with  $60^\circ$  and  $90^\circ$
- 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 SNC



DLA G1 150mm 2000lm 8xx R SNC



DLA G1 100mm 1000lm 8xx R SH SNC



DLA G1 150mm 2000lm 8xx R SH SNC



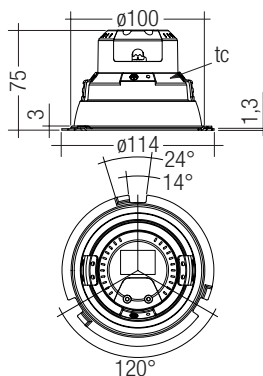


## Engine DLA G1 ready2apply SNC

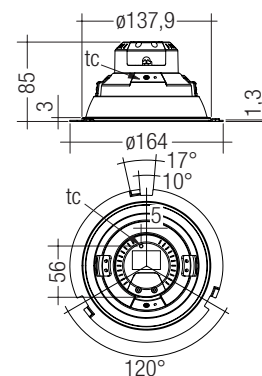
Engine DLA ESSENCE

### Technical data

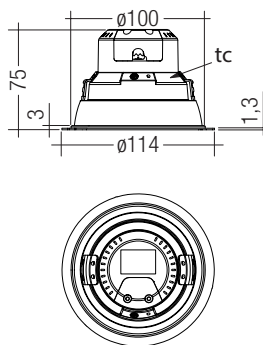
Rated supply voltage	220 – 240 V
Input voltage range	198 – 264 V
Mains frequency	50 / 60 Hz
Typ. $\lambda$	0.9
THD	< 20 %
Flicker	< 20 %
Output LF current ripple (< 120 Hz)	< 20 %
Beam characteristic (with reflector)	110° (60°/90°)
Ambient temperature $t_a$	-20 ... +40 °C
Typ. $t_p$ temperature <sup>①</sup>	65 °C
Max. $t_p$ temperature (100 mm) <sup>①</sup>	75 °C
Max. $t_p$ temperature (150 mm) <sup>①</sup>	85 °C
Type of protection	IP20



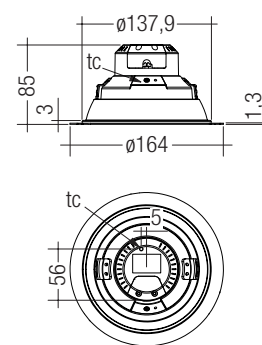
DLA G1 100mm 1000lm 8xx R SNC



DLA G1 150mm 2000lm 8xx R SNC



DLA G1 100mm 1000lm 8xx R SH SNC



DLA G1 150mm 2000lm 8xx R SH SNC

### Ordering data

Type	Article number	Colour temperature	Casing	Packaging	Weight per pc.
DLA G1 100mm 1000lm 830 R SNC	28001090	3,000 K	yes	36 pc(s).	0.109 kg
DLA G1 100mm 1000lm 840 R SNC	28001091	4,000 K	yes	36 pc(s).	0.109 kg
DLA G1 100mm 1000lm 865 R SNC	87500479	6,500 K	yes	36 pc(s).	0.109 kg
DLA G1 150mm 2000lm 830 R SNC	28001092	3,000 K	yes	36 pc(s).	0.210 kg
DLA G1 150mm 2000lm 840 R SNC	28001093	4,000 K	yes	36 pc(s).	0.210 kg
DLA G1 150mm 2000lm 865 R SNC	87500480	6,500 K	yes	36 pc(s).	0.210 kg
DLA G1 100mm 1000lm 830 R SH SNC	28001264	3,000 K	yes	36 pc(s).	0.109 kg
DLA G1 100mm 1000lm 840 R SH SNC	28001265	4,000 K	yes	36 pc(s).	0.109 kg
DLA G1 150mm 2000lm 830 R SH SNC	28001266	3,000 K	yes	36 pc(s).	0.210 kg
DLA G1 150mm 2000lm 840 R SH SNC	28001267	4,000 K	yes	36 pc(s).	0.210 kg

### Specific technical data

Type	Photometric Luminous flux at Luminous flux with 60°/90° Input power <sup>③</sup>		Luminous efficacy at Luminous efficacy with 60°/90°		Colour rendering index CRI	Energy classification		
	code	$t_p = 65\text{ °C}$ <sup>②</sup>	reflector at $t_p = 65\text{ °C}$ <sup>②</sup>	$t_p = 65\text{ °C}$			reflector at $t_p = 65\text{ °C}$	
DLA G1 100mm 1000lm 830 xxx SNC	830/459	1,000 lm	1,020 lm	11.6 W	86 lm/W	88 lm/W	80	A+
DLA G1 100mm 1000lm 840 xxx SNC	840/459	1,050 lm	1,070 lm	11.6 W	90 lm/W	92 lm/W	80	A+
DLA G1 100mm 1000lm 865 R SNC	865/459	1,050 lm	1,070 lm	11.6 W	91 lm/W	92 lm/W	80	A+
DLA G1 150mm 2000lm 830 xxx SNC	830/459	2,000 lm	2,040 lm	22.7 W	88 lm/W	90 lm/W	80	A
DLA G1 150mm 2000lm 840 xxx SNC	840/459	2,100 lm	2,140 lm	22.7 W	92 lm/W	94 lm/W	80	A+
DLA G1 150mm 2000lm 865 R SNC	865/459	2,130 lm	2,160 lm	22.7 W	93 lm/W	95 lm/W	80	A+

<sup>①</sup> 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  $t_p$ -point is to be measured in the thermally stable state with a temperature sensor or temperature-sensitive sticker as per EN 60598-1. For the precise position of the  $t_p$  point see the drawing on page 4.

<sup>②</sup> Tolerance range for optical data:  $\pm 10\%$ .

<sup>③</sup> All values at  $t_p = 65\text{ °C}$ .

ACD REFLECTOR

Product description

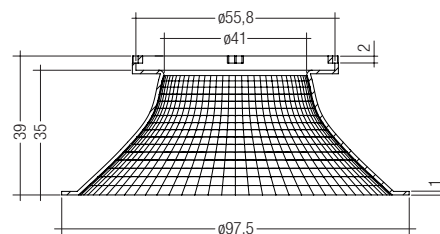
- Reflector for DLA modules with 60° or 90°



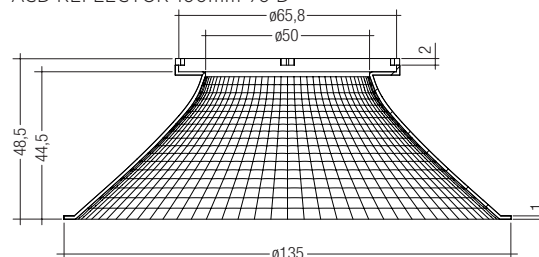
ACD REFLECTOR 100mm



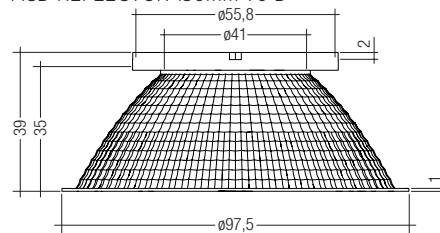
ACD REFLECTOR 150mm



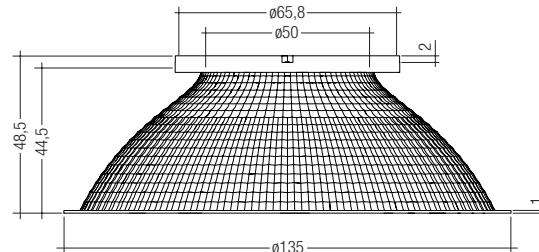
ACD REFLECTOR 100mm 90 D



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  
IEC 61000-3-2  
IEC 61000-3-3

### 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

1 <sup>st</sup> digit	2 <sup>nd</sup> + 3 <sup>rd</sup> digit	4 <sup>th</sup> digit	5 <sup>th</sup> digit	6 <sup>th</sup> digit	
Code	CRI	Colour temperature in Kelvin x 100	McAdam after 25% of the life-time (max.6000h)	Luminous flux after 25% of the life-time (max.6000h)	
7	70 – 79	Kelvin x 100	McAdam initial	Code	Luminous flux
8	80 – 89			7	≥ 70 %
9	≥90			8	≥ 80 %
				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<sub>DC</sub> 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<sub>AC</sub> (or 1.414 x 1500 V<sub>DC</sub>). 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.

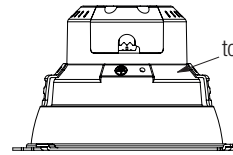
The thermal limits can be checked at the tp/tc point.

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.

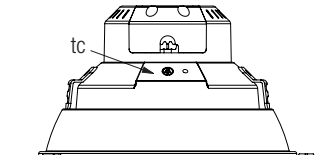
For the DLA G1 SNC a tp temperature of 75 / 85 °C has to be complied in order to achieve an optimum between heat sink requirements, light output and life-time.

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 SNC



DLA G1 150mm 2000lm 8xx xxx SNC

### 2.2 Thermal behaviour

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

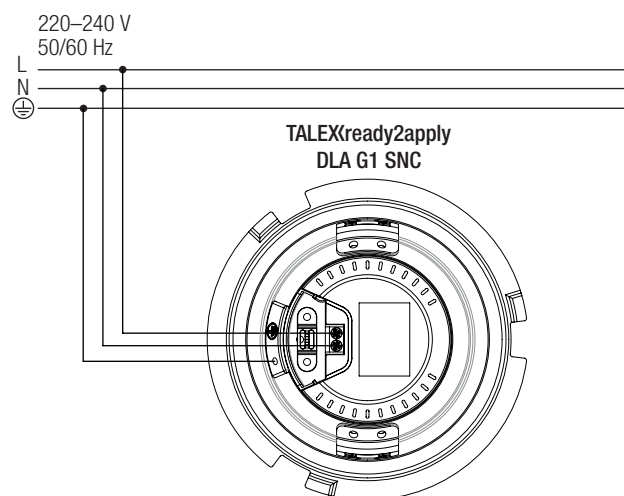
## 3. Installation / wiring

### 3.1 Electrical supply/choice of LED Driver

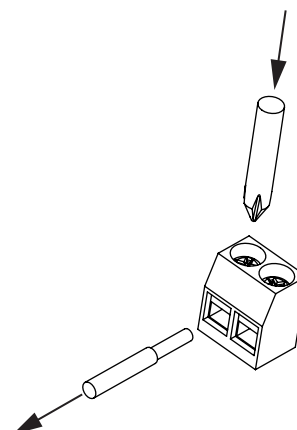
The DLA G1 SNC from Tridonic are protected against mains transients up to 1 kV.

The DLA G1 SNC has to operated with 230 V AC.

### 3.2 Wiring

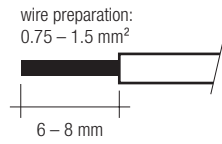


### 3.3 Release of the wiring



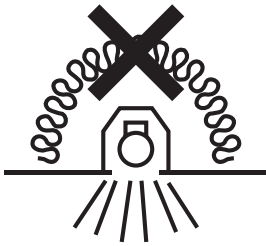
### 3.4 Wiring type and cross section

The wiring can be solid or stranded wires with a cross section of 0.75 to 1.5 mm<sup>2</sup>.  
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 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	I <sub>max</sub>	time
<b>DLA G1 100mm 1000lm 8xx SNC</b>	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 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	I <sub>max</sub>	time
<b>DLA G1 150mm 2000lm 8xx SNC</b>	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 maintenance 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 initial luminous flux, respectively 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

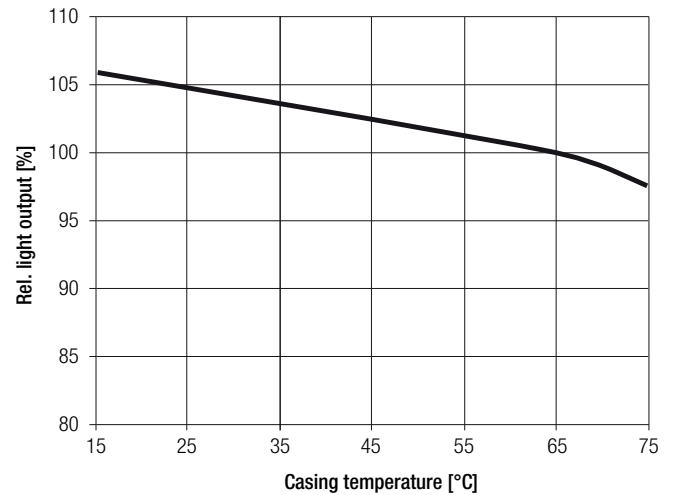
Life-time declarations are informative and represent no warranty claim.

Type	tp temperature	L70 / F50	failure rate at 30,000 h
DLA G1 100mm 1000lm 8xx R xx SNC	65 °C	30,000 h	1.8 %
DLA G1 150mm 2000lm 8xx R xx SNC	65 °C	30,000 h	3.1 %

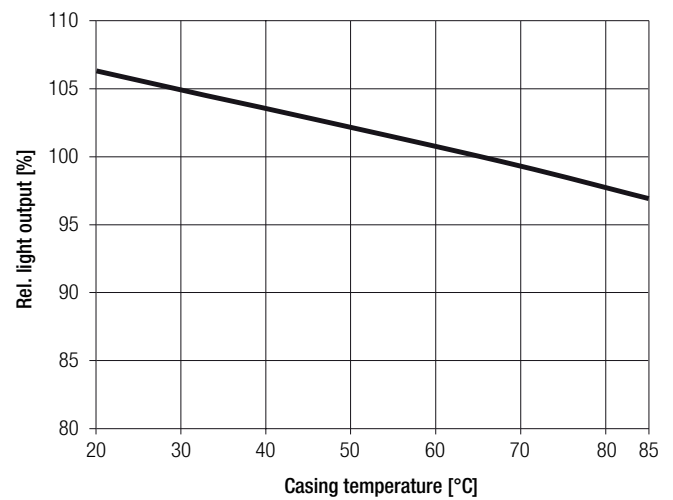
## 5. Optical values

### 5.1 Typ. light output vs. tc temperature

#### DLA G1 100mm 1000lm 8xx xxx SNC



#### DLA G1 150mm 2000lm 8xx xxx SNC



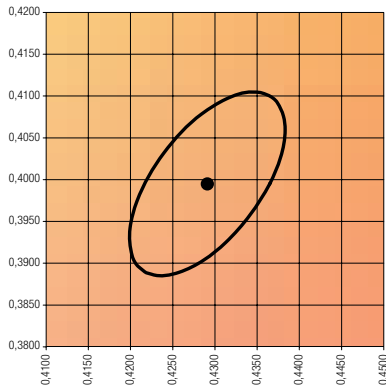
## 6. Photometric characteristics

### 6.1 Coordinates and tolerances according to CIE 1931

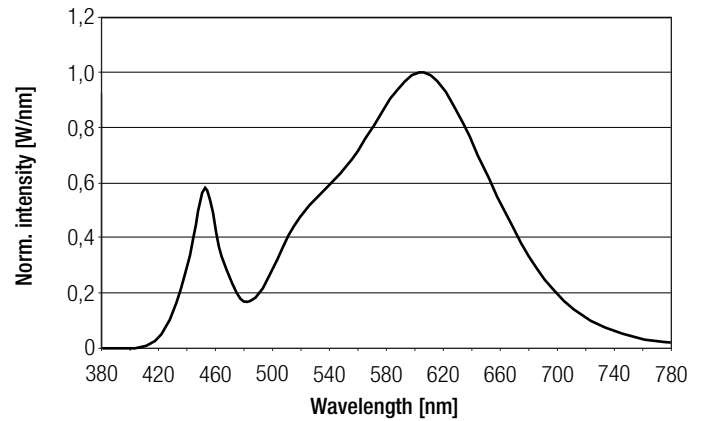
The specified colour coordinates are measured integral after a settling time of 100 ms. The current impuls depends on the module type. The ambient temperature of the measurement is  $t_a = 25^\circ\text{C}$ . The measurement tolerance of the colour coordinates are  $\pm 0.01$ .

#### 3,000 K

	x0	y0
Centre	0.4287	0.3940

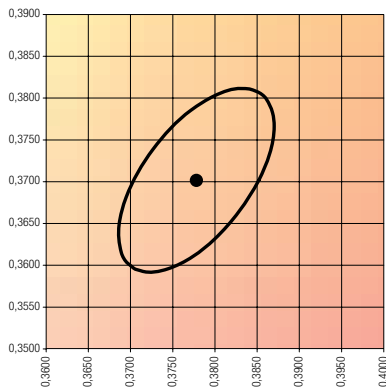


MacAdam ellipse: 4SDCM

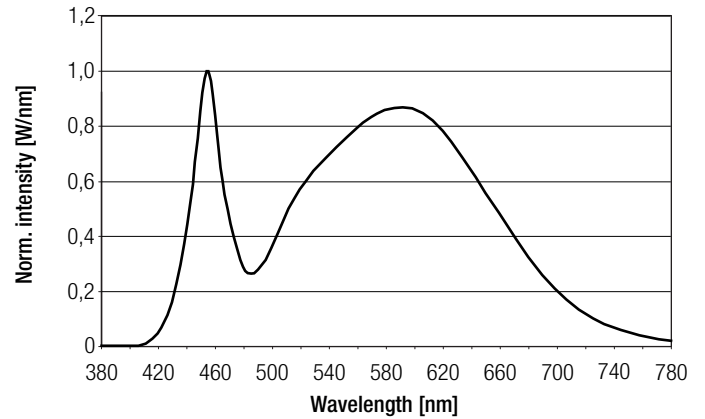


#### 4,000 K

	x0	y0
Centre	0.3767	0.3702

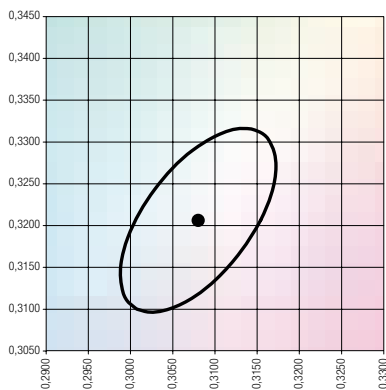


MacAdam ellipse: 4SDCM

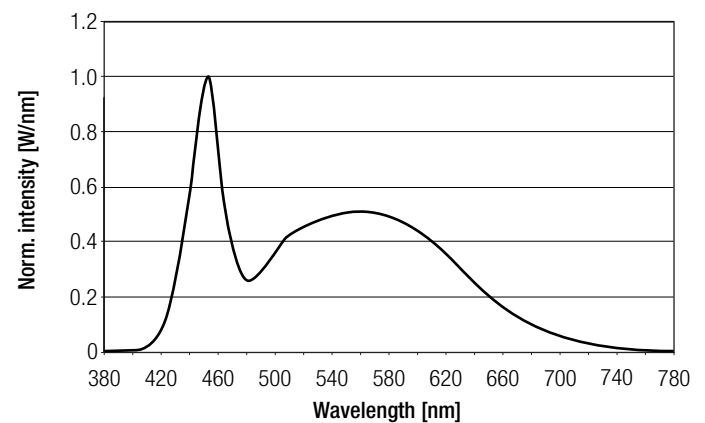


#### 6,500 K

	x0	y0
Centre	0.3081	0.3204

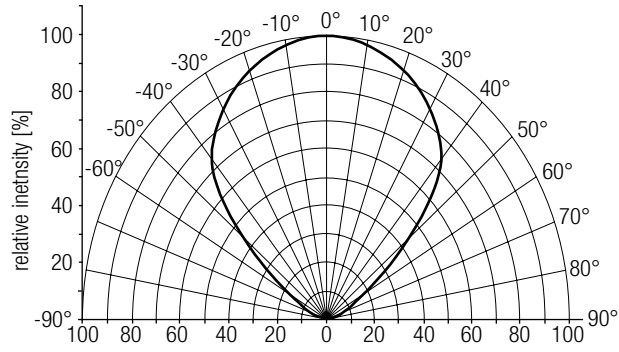


MacAdam ellipse: 4SDCM

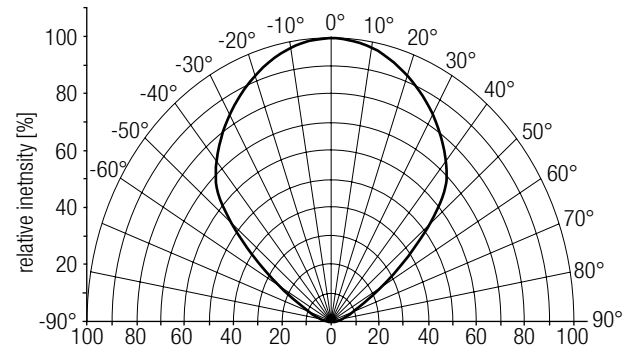


## 6.2 Light distribution

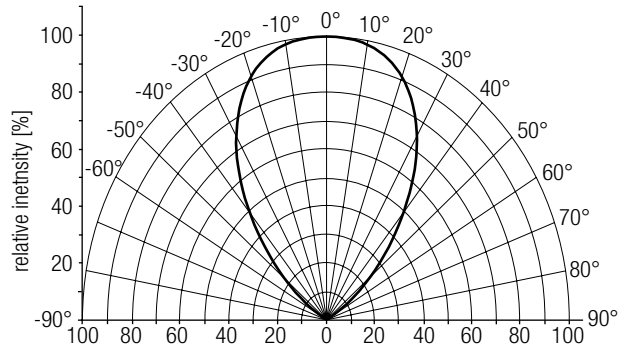
DLA G1 100mm 1000lm 8xx xxx SNC



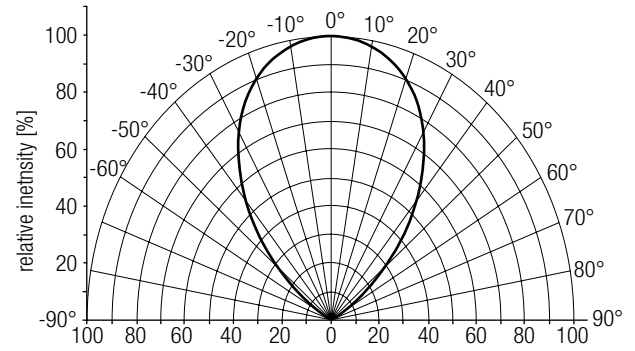
DLA G1 150mm 2000lm 8xx xxx SNC



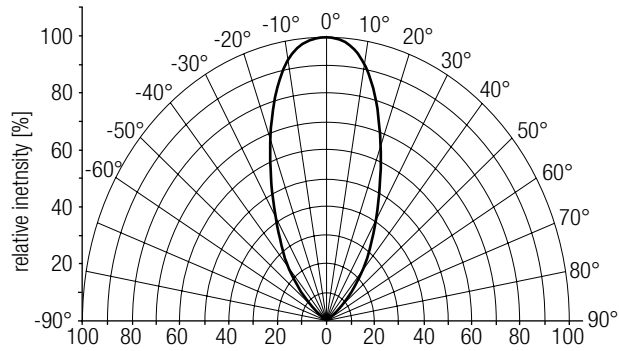
DLA G1 100mm 1000lm 8xx xxx SNC with 90° reflector



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



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



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

