

Lms10LED series



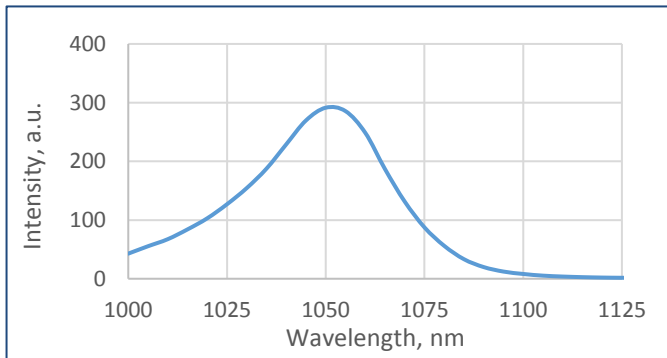
| Device parameters | Symbol | Value | Units |
|--|-----------|-----------|--------------------|
| Operating/ storage temperature | T_{stg} | -60..+90* | $^{\circ}\text{C}$ |
| Soldering temperature (can be applied for not more than 5 secs) | T_{sol} | +180 | $^{\circ}\text{C}$ |

*Temperature range may vary for different packaging types.

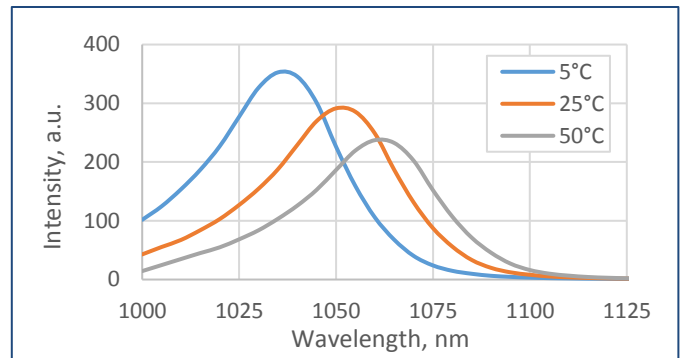
All parameters refer to LEDs in TO18 package with a cavity and operation at ambient temperature 25°C unless otherwise stated.

| LED parameters | Conditions | Symbol | Value | Units |
|--|--|-------------|-----------------|---------------|
| Peak emission wavelength ¹ | qCW mode ³ $I = 25 \text{ mA}$ | λ_p | 1.03 - 1.07 | μm |
| FWHM of the emission band ¹ | qCW mode ³ $I = 25 \text{ mA}$ | FWHM | 30 - 50 | nm |
| Average optical power (minimal / typical) ¹ | qCW mode ³ $I = 200 \text{ mA}$ | P_{qCW} | min 12 / typ 14 | mW |
| Peak optical power (minimal / typical) ² | Pulse mode ⁴ $I = 1 \text{ A}$ | P_{pul} | min 30 / typ 33 | mW |
| Maximum operating current | qCW mode ³ | I_{qCW} | 200 | mA |
| | Pulse mode ⁴ | I_{pul} | 1 | A |
| | DC mode ⁵ | I_{DC} | 100 | mA |
| Forward voltage ¹ | qCW mode ³ $I = 200 \text{ mA}$ | V | 1.1 - 1.4 | V |

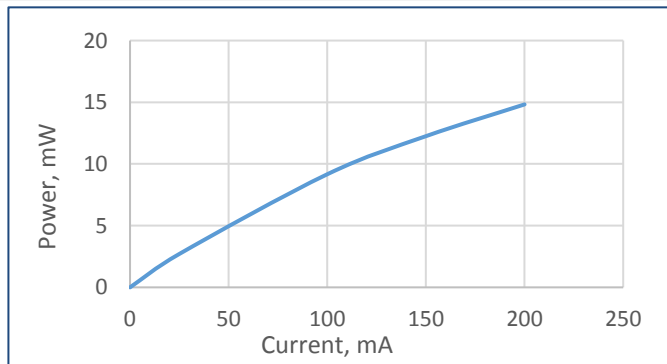
Typical spectrum (qCW³, 25 mA)



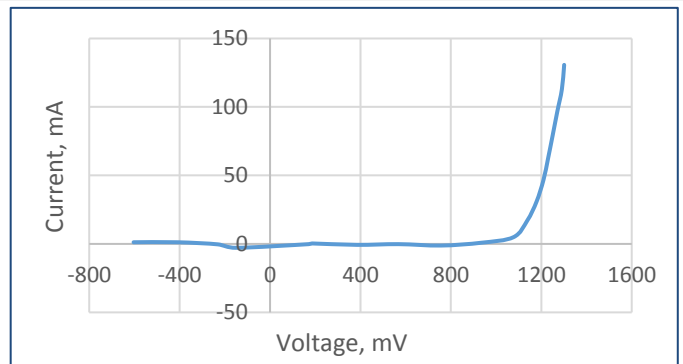
Spectra at different temperatures (qCW³, 25 mA)



Typical optical power characteristic (qCW³)



Typical current-voltage characteristic (qCW³)



¹ Parameter tested for each device.

² Parameter tested for representative sampling.

³ qCW mode: repetition rate: 0.5 KHz, pulse duration: 1 ms, duty cycle: 50%.

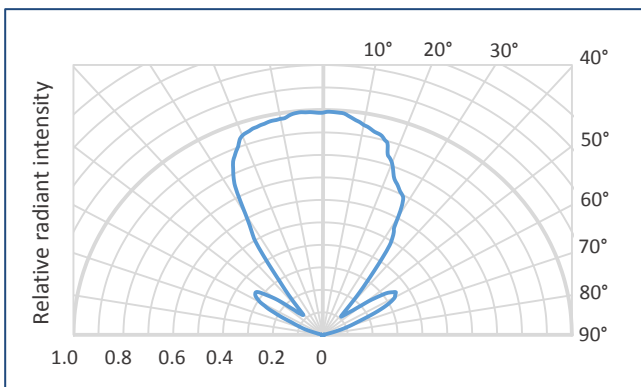
⁴ Pulse mode: repetition rate: 0.5 KHz, pulse duration: 20 μs , duty cycle: 1%.

⁵ DC mode: direct current.

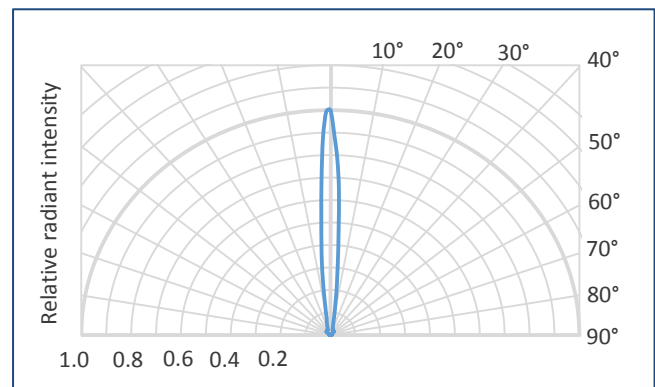
| Packages | Model |
|--|----------------|
| TO-18 with a cap with a glass window | Lms10LED |
| TO-18 with a parabolic reflector without a glass window | Lms10LED-R |
| TO-18 with a parabolic reflector with a glass window | Lms10LED-RW |
| TO-5 with a built-in thermocooler and thermoresistor, covered by a cap with a glass window | Lms10LED-TEM |
| TO-5 with a built-in thermocooler and thermoresistor, covered by a parabolic reflector with a glass window | Lms10LED-TEM-R |

Radiant characteristics (far-field pattern)

TO-18 package with a cap



TO-18 package with a parabolic reflector

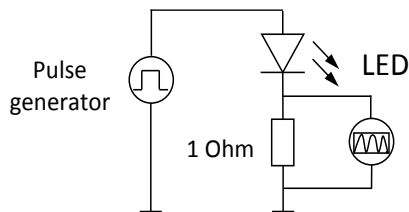


Related products:

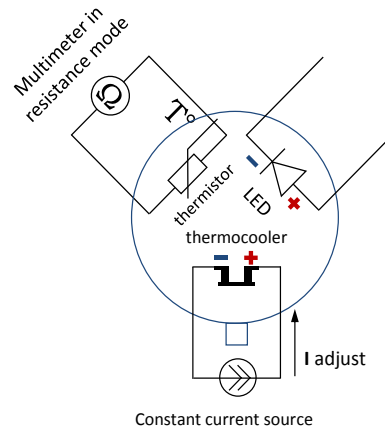
- **LED drivers (D-41i, D-51i, minidrivers mD-1c, mD-1p)** - provide LED power supply in pulse modes.

To drive the LED we recommend the following basic circuit connections:

LED basic circuit connection

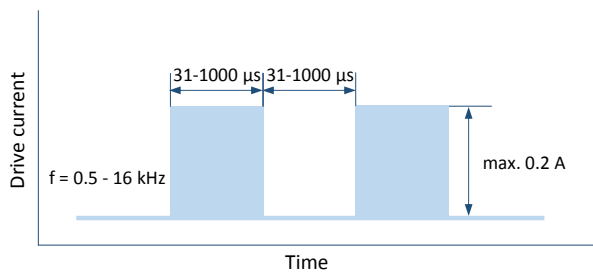


LED with thermoelectric module basic circuit connection

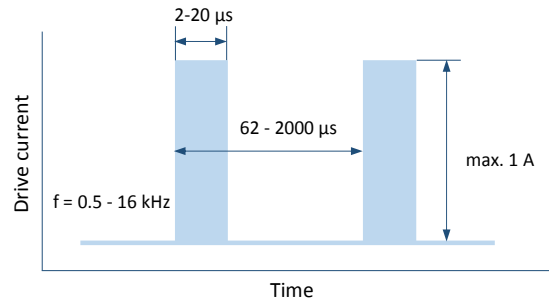


We recommend using **Quasi Continuous Wave (qCW) mode** with a duty cycle 50% or 25% to obtain maximum average optical power and short **Pulse modes** to obtain maximum peak power.

Quasi Continuous Wave (qCW) mode



Pulse mode

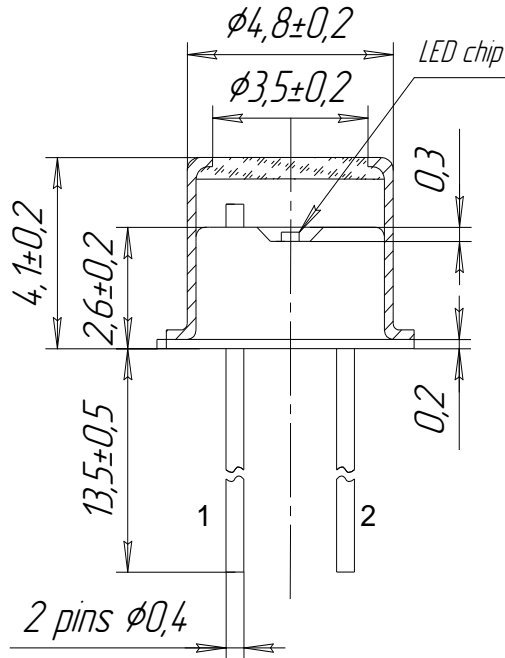


IMPORTANT CAUTIONS:

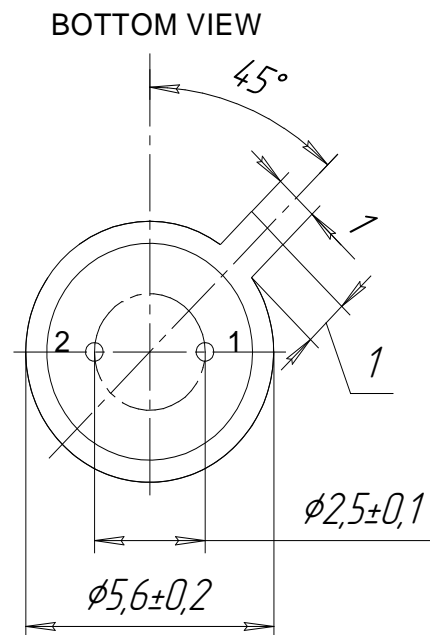
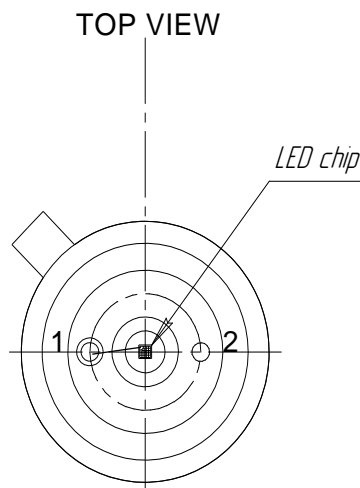
- please check your connection circuit before turning on the LED;
- please mind the LED polarity: anode is marked with a RED dot; REVERSE voltage applying is FORBIDDEN;
- please do not connect the LED to the multimeter;
- please control the CURRENT applied to the LED in order NOT to EXCEED the maximum allowable values.

Technical Drawings

Lms10LED

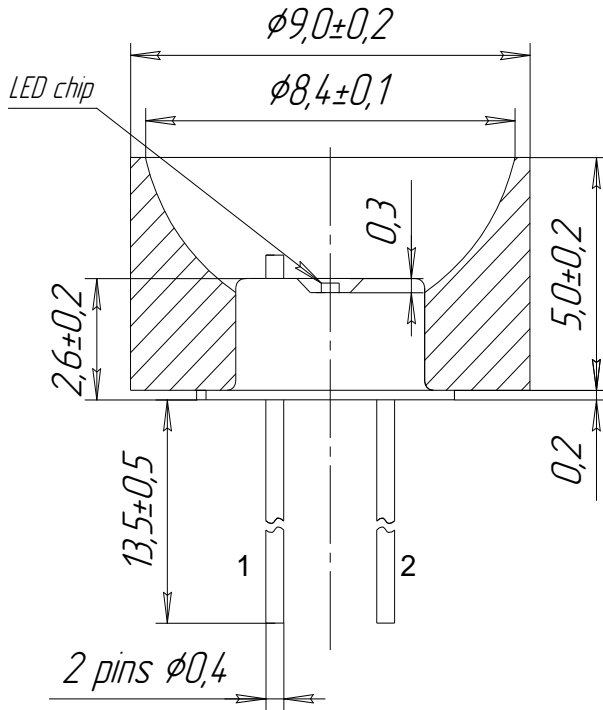


1 - LED anode
2 - LED cathode



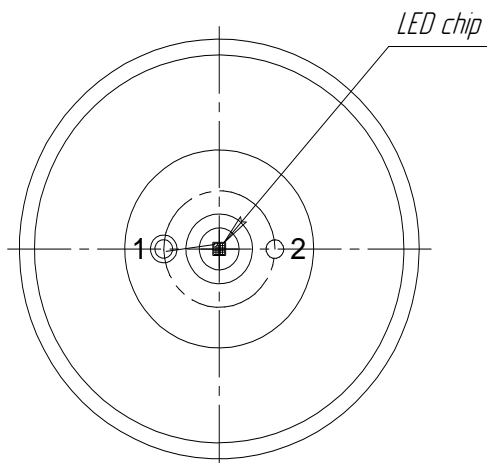
Technical Drawings

Lms10LED-R

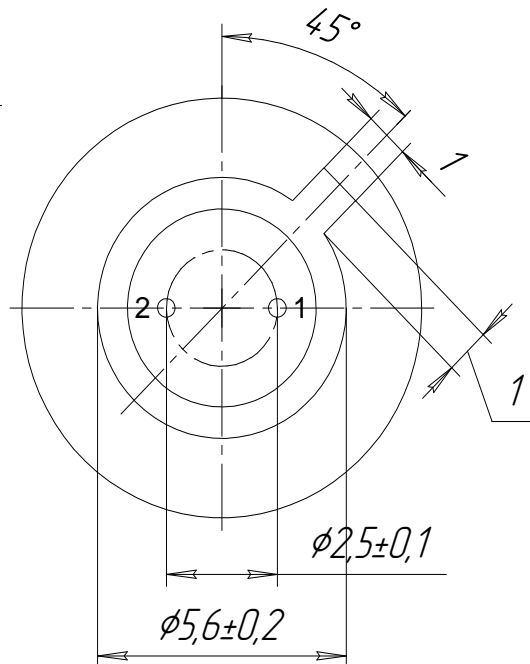


1 - LED anode
2 - LED cathode

TOP VIEW

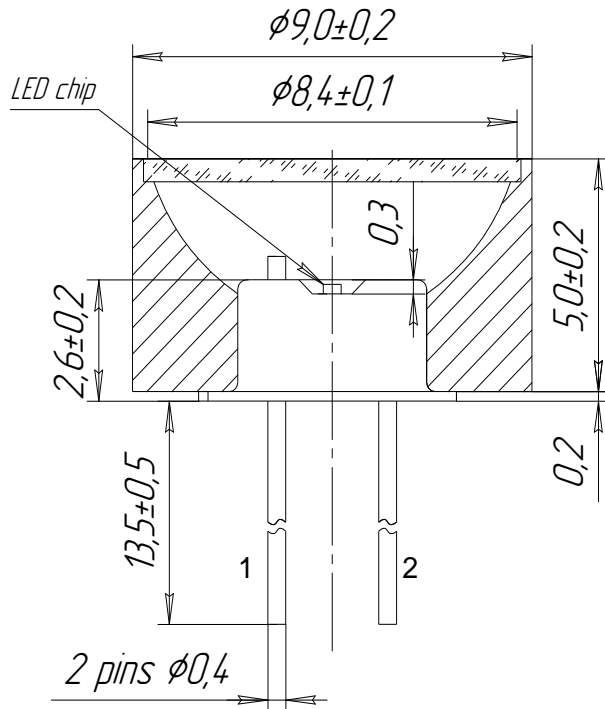


BOTTOM VIEW



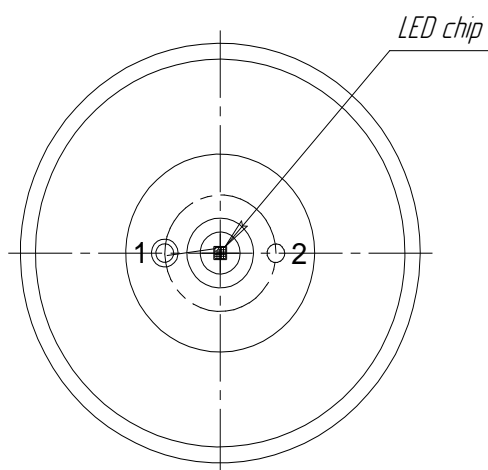
Technical Drawings

Lms10LED-RW

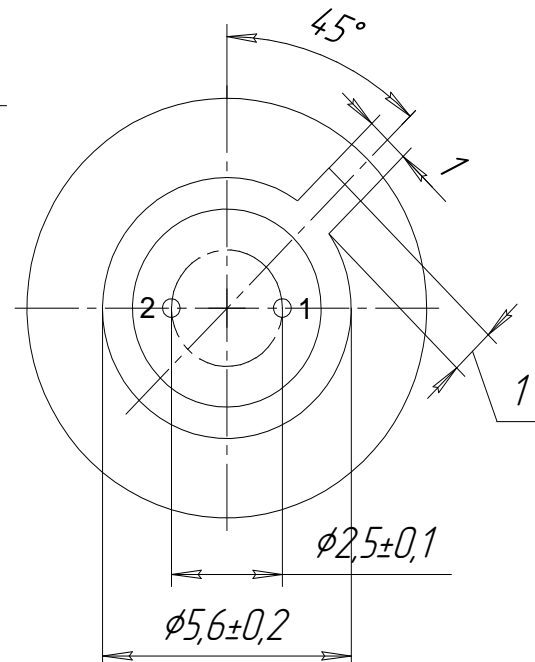


1 - LED anode
2 - LED cathode

TOP VIEW

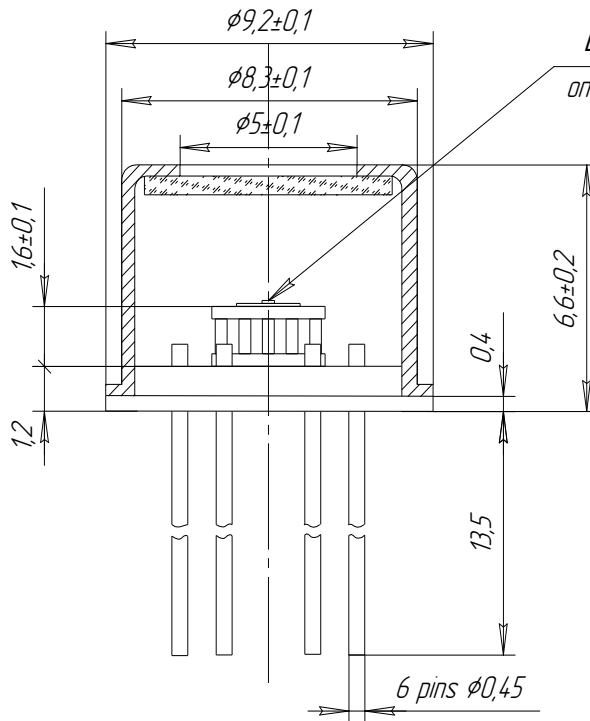


BOTTOM VIEW



Technical Drawings

Lms10LED-TEM

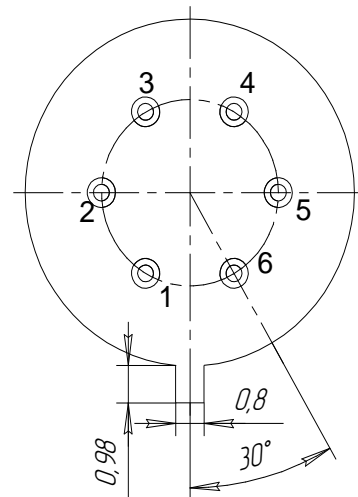
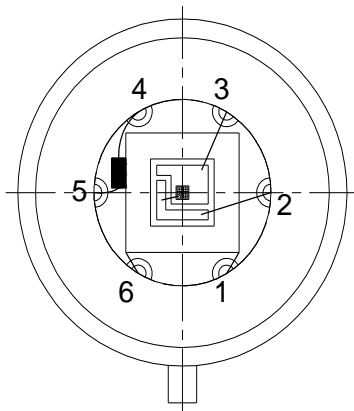


LED chip
on Si substrate

- 1 - TEC +
- 2 - LED anode
- 3 - LED cathode
- 4 - thermistor
- 5 - thermistor
- 6 - TEC -

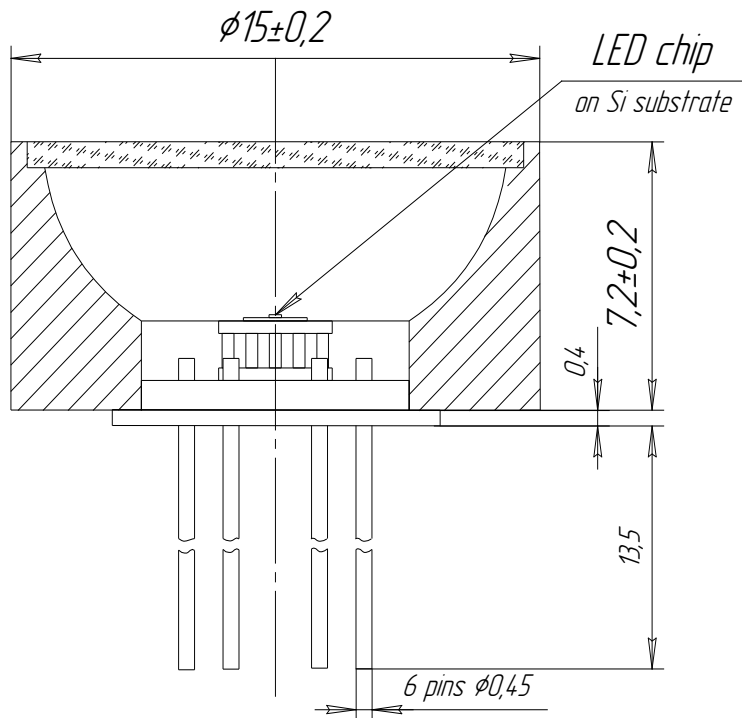
TOP VIEW

BOTTOM VIEW



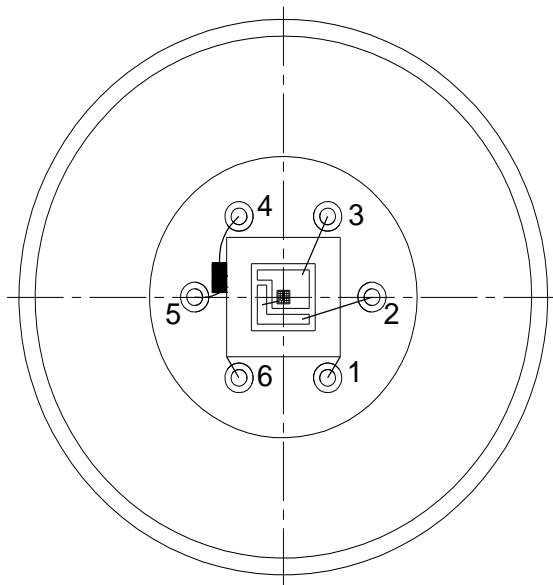
Technical Drawings

Lms10LED-TEM-R



- 1 - TEC +
- 2 - LED anode
- 3 - LED cathode
- 4 - thermistor
- 5 - thermistor
- 6 - TEC -

TOP VIEW



BOTTOM VIEW

