

DRAGONtape®

Data Sheet



Benefits

- 6 High-Flux GoldenDRAGON® LEDs in series on flexible board
- Self-adhesive back for easy assembly

Applications

- In-ground mounted luminaires
- Emergency / rescue signs
- Backlighting of diffusing glass and plastics
- Development of prototypes

Technical Operating Data

Product	Color	Number of LEDs	Current [mA]*	Power [W]*	Radiance Angle [°]*	Wavelength [nm] Color Temp [K]*	Lum. Flux [lm]*
DT6-W4F-854	white	6	350	7,2	120	5400 K	430
DT6-W3F-827	white	6	350	7,2	120	2700 K	275
DT6-A2	red	6	350	4,8	120	616 nm	285
DT6-A1**	red	6	350	4,8	120	616 nm	85
DT6-Y2	yellow	6	350	4,8	120	589 nm	230+)
DT6-Y1**	yellow	6	350	4,8	120	589 nm	100
DT6-T2**	green	6	350	7,2	120	531 nm	280
DT6-B1**	blue	6	350	7,2	120	470 nm	50
DT6-B2	blue	6	350	7,2	120	468 nm	70

*) All Data are related to the entire module

Due to the special conditions of the manufacturing processes of LED the typical data of technical parameters can only reflect statistical figures and do not necessarily correspond to the actual parameters of each single product which could differ from the typical data.

+) Preliminary Data

**) Discontinued

Technical Features

- Operation only with OPTOTRONIC® constant current devices (see page 3)
- Separable in units between 1-6 LEDs
- Easy separable by cutting after each LED subunit
- Size of DRAGONtape® (L x W x H): 150 mm x 25 mm x 2 mm
- Size of smallest unit (L x W): 25 mm x 25 mm
- To obtain maximum LED lifetime please read the recommended procedures concerning thermal management before beginning design and construction of luminaires.
- Electrical connection by soldering of wires
- UL classification of the PCB: Self-extinguishing according UL94: V0
- Up to 60,000 h lifetime

Minimum and Maximum Ratings

Product	Operating Temperature at Tc-Point [°C] *	Storage Temperature [°C] *	Max. Current [A dc] *	Reverse Voltage [V dc] *
DT6-W4F-854	-30 ... 85	-30 ... 85	0,5	0
DT6-W3F-827	-30 ... 85	-30 ... 85	0,5	0
DT6-A2	-30 ... 85	-30 ... 85	0,5	0
DT6-A1**	-30 ... 85	-30 ... 85	0,5	0
DT6-Y2	-30 ... 85	-30 ... 85	0,5	0
DT6-Y1**	-30 ... 85	-30 ... 85	0,5	0
DT6-T2**	-30 ... 85	-30 ... 85	0,5	0
DT6-B1**	-30 ... 85	-30 ... 85	0,5	0
DT6-B2	-30 ... 85	-30 ... 85	0,5	0

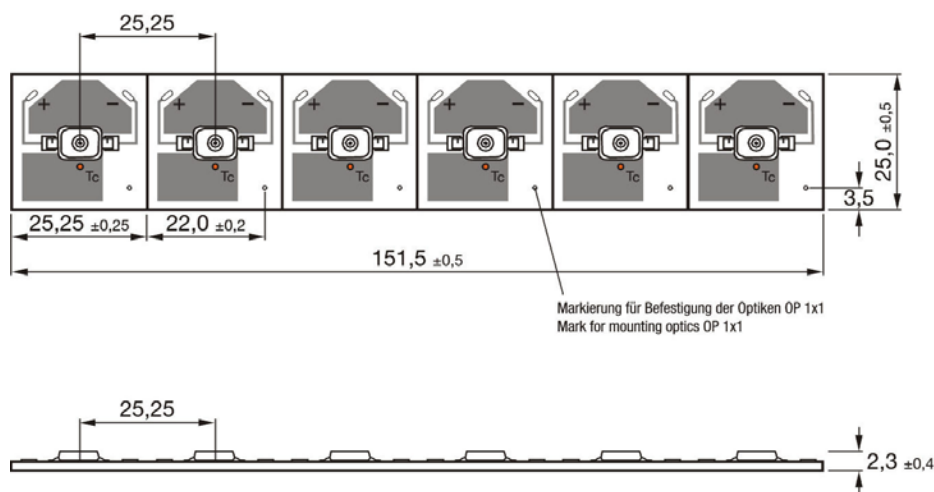
The module is designed to work with current sources. The maximum output voltage may not exceed 100 V DC. Reverse operation is not allowed and may destroy the module.

*) Exceeding maximum ratings for operating and storage temperature will reduce expected life time or destroy the LED Module.

Exceeding maximum ratings for operating current will cause hazardous overload and will likely destroy the LED Module. Several modules may be connected in series up to the maximum voltage of 100 V DC (outside SELV limits).

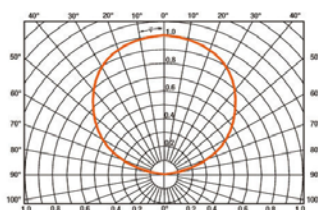
The temperature of the LED module must be measured at the Tc-point according to EN60598-1 in a thermally constant status with a temperature sensor or a temperature sensitive label. For exact location of the Tc-point see drawing below.

Drawings



Abstrahlcharakteristik (Einzel-LED) Radiation Characteristic (Single-LED)

$$I_{\text{rel}} = f(\varphi); T_A = 25^\circ\text{C}$$



Alle Angaben in mm
All values in mm

Safety Information

- The LED module itself and all its components must not be mechanically stressed.
- Assembly must not damage or destroy conducting paths on the circuit board.

In order to drive OSRAM LED-Modules safely, it is absolutely necessary to operate them with an electronically stabilised power supply protecting against short circuits, overload and overheating.

To also ease the luminaire/installation approval, electronic control gear for LED or LED modules should carry the CE mark and be ENEC certified. In Europe the declarations of conformity must include the following standards:
CE: EC 61374-2-13, EN 55015, IEC 61547 and IEC 61000-3-2 - ENEC: 61374-2-13 and IEC/EN 62384.
Also check for the mark of an independent authorized certification institute.
Please see the relevant brochure for more detailed information (see "Related and Further Information")

OSRAM OPTOTRONIC® electronic control gear complies to all relevant standards and guarantees safe operation.

- Installation of LED modules (with power supplies) needs to be made with regard to all applicable electrical and safety standards. Only qualified personnel should be allowed to perform installations.
- Observe correct polarity!
Depending on the product incorrect polarity will lead to emission of red or no light. The module can be destroyed! Correct polarity immediately! (see "reverse voltage", page 2)
- Serial connection is highly recommended as safe electrical operation mode.
Parallel connection is not recommended. Unbalanced voltage drop can cause hazardous overload and damage the LED module.
- Recommended power supply:
 - OT 9/200-240/350 or OT 9/100-120/350(E) for 350 mA constant current operation
 - OT 9/10-24/350 DIM, OT 9/10-24/350 DIM(E) for 350 mA constant current, 1..10V interface (dimming with PWM)
 - OT 9/200-240/350 DIM for 0-350 mA constant current operation, 1..10 V interface (dimming) and strain relief
 - OT 18/200-240/700 DIM for 0-500 mA constant current operation, 1..10V interface (Dimming with PWM) and strain relief
- Maximum number of LEDs for all OT9 or OT18: White/Blue/Green: 6; Red/Yellow: 9
- The OT18 comes with preset limitation to 500mA, thus giving 12W due to SELV ($\leq 25V$)
- When mounting the module on a metallic or otherwise conductive surface, care should be taken to provide electrical isolation between subunits (coupons) and the mounting surface.
- Pay attention to standard ESD precautions when installing the module. For further information see the ESD application notes, you can find them in the internet.
- To fix the additional optics OP1x1 on the DRAGONtape® it is only allowed to drive screws through the PCB in the marked sections (see drawing). Mounting the optics at the end of the module the use of a washer with 1.9 mm to 2 mm height it is recommended; the washer is used for the mounting hole of the optics and compensates the difference in height between module and mounting surface.
- For 500 mA the Luminous flux increases to 130%.
- The module, as manufactured, has no conformal coating and therefore offers no inherent protection against corrosion.
- Damage by corrosion will not be honored as a materials defect claim. It is the user's responsibility to provide suitable protection against corrosive agents such as moisture and condensation and other harmful elements.
- For applications involving exposure to humidity and dust the module must be protected by a fixture or housing with a suitable protection class. The module can be protected against condensation water by treatment with an appropriate circuit board grade conformal coating. The conformal coating should have the following features:
 - Optical transparency
 - UV-resistance
 - thermal expansion matching the thermal expansion of the module $15-30 \cdot 10^{-6} \text{ cm/cm/K}$
 - low permeability of steam for all climatic conditions
 - resistance against corrosive environmentThe lacquer APL of the company Electrolube <http://www.electrolube.com> met the conditions for the LINEARlight Flex in our tests.

Assembly Information

- The mounting of the module is facilitated by means of the double-sided adhesive on the back-surface of the module. Care must be taken to provide a clean even and dry mounting surface, free of oils or silicone coatings as well as dirt particles. The mounting substrate must have sufficient structural integrity. Take care to completely remove the adhesive backing. Once the module is appropriately positioned, press on the module with about 20 N/cm² (refer to application techniques of 3M adhesive transfer tapes).
- Solder connections should only be performed on designated solder pads at the end of the unit (marked " +/-"). During soldering, do not exceed the maximum soldering time of 10 seconds and the maximum soldering temperature of 260°C. Please take notice of soldering the cables after mounting the module.
- The module should only be adhered to flat surfaces. Installation to curved surfaces may turn the LED off the PCB.

Ordering Guide

Productgroup	Productname	EAN *	S-Unit *
DRAGONtape®	DT6-W4F-854	4008321365224	25
DRAGONtape®	DT6-W3F-827	4008321368461	25
DRAGONtape®	DT6-A2	4008321150141	25
DRAGONtape®	DT6-A1**	4008321015747	25
DRAGONtape®	DT6-Y2	4008321150165	25
DRAGONtape®	DT6-Y1**	4008321015860	25
DRAGONtape®	DT6-T2**	4008321150189	25
DRAGONtape®	DT6-B1**	4008321015761	25
DRAGONtape®	DT6-B2	4008321150127	25

*) EAN: Ordering number per single module
S-Unit: Modules per shipping unit

Note: Typical performance data are subject to change without any further notice, particularly as LED technology evolves.

Sales and Technical Support

OSRAM GmbH

Hellabrunner Strasse 1
D - 81536 München
Germany
www.osram.com
+49 (0)89 6213-0

Sales and technical support is given by the local OSRAM subsidiaries.
On our world wide homepage all OSRAM subsidiaries are listed with complete address and phone numbers.

Related and Further Information

- New creativity in lighting design
LED Modules for illuminated signs
 - OPTOTRONIC® Technical Guide
 - OPTOTRONIC® Data Sheets
 - Datasheet Optics for DRAGON Modules OP1x1/
Application Note DRAGONtape® und Optics
 - New standards for LED control gear
- 138 W002 GB
- 130 T008 GB www.osram.com/ecg-downloads
<http://catalog.myosram.com>
www.osram.com/led-systems-downloads
- 130 W011 GB
www.osram.com/ecg-download