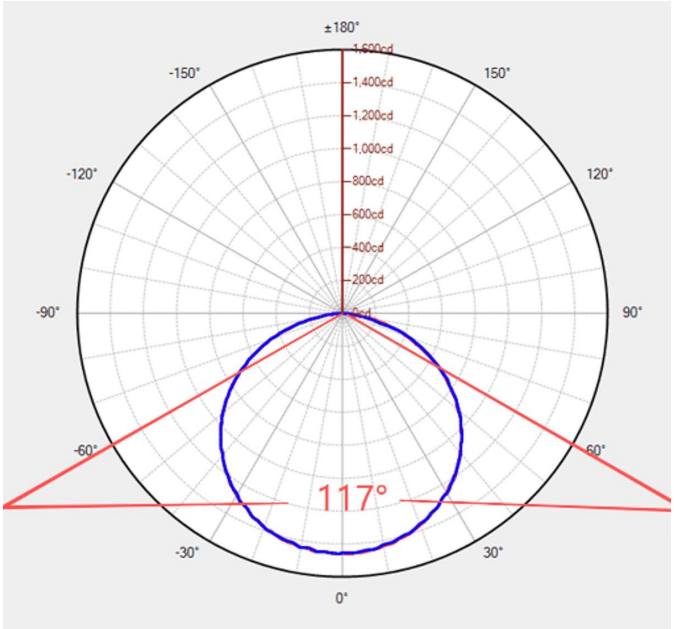
BRIGHTLX
Better Choice of PCBA

Module 2x8-5050-PCBA

The BrightLX 2x8 LED Module is designed for outdoor lighting applications requiring high efficiency, reliable thermal performance and flexible optical configurations

The module is compatible with secondary optics and suitable for street lighting, area lighting and industrial luminaires.



Key Features

- High-efficiency outdoor LED module
- Suitable for harsh and humid outdoor environments
- Wide operating temperature range from -40 °C to +85 °C
- Compatible with surge protection solutions up to 6 kV (system dependent)
- Optimized thermal management for long-term reliability
- Compatible with standard 2×8 secondary optical lenses
- Push-in terminals for fast and reliable wiring
- Long operating lifetime up to 100,000 hours (system dependent)

Optical Properties

- Available in 2200 K, 2700 K, 3000 K, 4000 K, 5000 K, 5700 K and 6500 K
- Module efficacy up to 195 lm/W under standard test conditions
- Available with CRI >70 and CRI >80 options
- Typical colour consistency ≤3 SDCM
- Tight luminous flux tolerances

Mechanical Properties

- Module dimensions: 220 x 50 mm
- Aluminum PCB construction
- Designed for installation with M3 screws
- Compatible with standard outdoor optical systems
- Compact design for easy luminaire integration

Applications

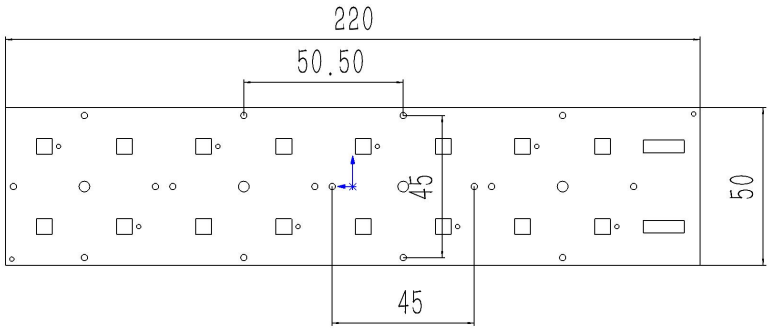
- Street Lighting
- Area Lighting
- Flood Lighting
- High Bay Lighting
- Industrial Lighting

Specific Technical Data

Operating Mode HE	Article Number	CCT	Lumen Value	Output Current	Input Voltage	Efficacy	CRI
2x8 6170 lm	1110901012	3,000K	6170 lm	1A	48 V	128 lm/W	>70
2x8 7496 lm	1110901013	3,000 K	7496 lm	1A	48 V	156 lm/W	>70
2x8 8439 lm	1110901014	4,000 K	8439 lm	1A	48 V	175 lm/W	>70
2x8 8496 lm	1110901015	5,700 K	8496 lm	1A	48 V	177 lm/W	>70
2x8 9401 lm	1110901016	3,000 K	9401 lm	1A	48 V	195 lm/W	>70

Module 2x8-5050-PCBA

Module 2D



Tolerance & Measurement Specification

1. If mounted with M3 countersunk screws.
2. Integral measurement over the complete module.
3. The detailed explanation, see data sheet section 1.1.
4. Tolerance of useful light flux - 0 % / + 15 %. Measurement uncertainty ± 10 %.
5. Measurement uncertainty ± 10 %. Based on calculation.
6. Tolerance of power consumption Pon ± 10 %. Measurement uncertainty ± 5 %.

1. Standards

Tested according to：IEC 62031 / IEC 62778 / IEC 62471 / IEC 61000-4-2 / IEC 60068-2-52 / UL 8750 (for dry and damp locations) GR-1217-CORE

1.1 Energy classification

Type	Colour Temperature	Forward Current	Energy Classification	Energy Consumption
2x8 6170 lm	3,000 K	1A	C	48 kWh / 1,000 h
2x8 7496 lm	3,000 K	1A	C	48 kWh / 1,000 h
2x8 9401 lm	3,000 K	1A	B	48 kWh / 1,000 h
2x8 8439 lm	4,000 K	1A	B	48 kWh / 1,000 h
2x8 8496 lm	5,700 K	1A	B	48 kWh / 1,000 h

Additional technical information, product documentation and test reports are available on the corresponding product page at:
www.brightlx.com

2. Thermal details

2.1 tc point, ambient temperature and lifetime

The temperature at tp reference point is crucial for the light output and lifetime of a LED product.

For BrightLX LED modules a tp temperature of 85 °C has to be complied in order to achieve an optimum between heat sink requirements, light output and lifetime.

Compliance with the maximum permissible reference temperature at the tc 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 BrightLX are measured at the same reference point.

2.2 Storage and humidity

Storage temperature：-40 ... +85 °C

Operation only in non condensing environment.

Humidity during processing of the module should be between 0 to 70 %.

2.3 Thermal design and heat sink

The rated life of LED products depends to a large extent on the temperature. If the permissible temperature limits are exceeded, the life of the BrightLX LED modules will be greatly reduced or the BrightLX LED modules may be destroyed.

2.4 Heat sink values

BRIGHTLX LED 2x8 module

ta	tp	Forward Current	Rth, hs-a	Cooling Area
25 °C	85 °C	1A	6.69 K/W	176 cm²

Notes
The actual cooling surface can differ because of the material, the structural shape, outside influences and the installation situation. Depending on the heat sink a heat conducting paste or heat conducting film might be necessary to keep the specified tp temperature

3. Installation / wiring

3.1 Electrical supply/choice of LED driver

BrightLX LED modules are not protected against overvoltage, overcurrent, overload or short-circuit conditions. Safe and reliable operation can only be achieved when used with a suitable constant-current LED driver complying with applicable standards.

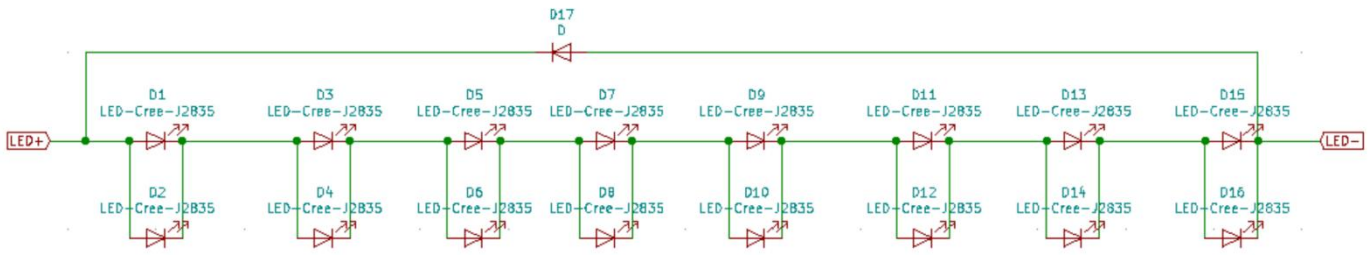
The selected LED driver should provide:
• Short-circuit protection
• Overload protection
• Over-temperature protection
• Surge protection where required

BrightLX LED modules are designed for constant-current operation only. Operation with constant-voltage drivers may cause irreversible damage to the module.

3.2 Integrated protection

The basic protection level consists of protection against reverse polarity.

3.3 Wiring examples



3.4 Mounting instruction

No part including substrates, LEDs and other electronic elements shall bear any tension or compression loads.

The maximum permitted tightening torque is limited to 0.5 Newton meters.

M3 flat head screws complying with DIN 965 and ISO 7046 standards shall be adopted to attach LED modules to heat sinks.
Exposure to chemical agents poses risks to LED modules; chemical interactions are likely to trigger color deviation, lumen depreciation, or complete module breakdown resulting from corroded electrical contacts.

All materials applied in LED assemblies such as sealants and adhesives must not release solvent vapors. They are prohibited from adopting condensation-curing or acetate-curing systems, nor can they contain sulfur, chlorine or phthalate substances.

Corrosive ambient conditions shall be avoided both in operational use and storage periods.

4. Lifetime

4.1 Lifetime, lumen maintenance and failure rate

LED modules experience gradual light attenuation throughout their service life, a performance metric quantified by the L rating. The L70 rating indicates a light source retains 70 percent of its original luminous output. This parameter is tied to operating runtime and serves as the benchmark for an LED module's service lifespan.

The L rating is a statistically derived index, so lumen retention performance differs across individual LED modules from the same batch.

The B rating represents the proportion of units that fail to meet the designated L threshold. For instance, L70B10 signifies 10% of all modules deliver less than 70% of their starting luminous flux, while the remaining 90% maintain output above that threshold. Separately, the C rating quantifies the share of modules suffering complete catastrophic breakdowns.

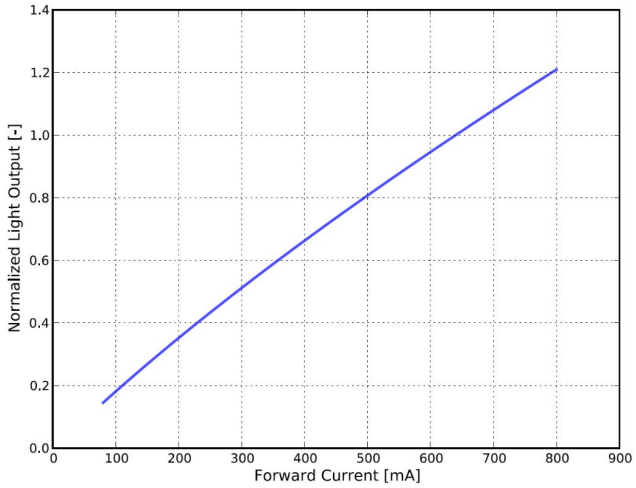
All stated lifespan figures are calculated from lab test results and statistical forecasting, conducted under standardized operating parameters.

4.2 Switching capability

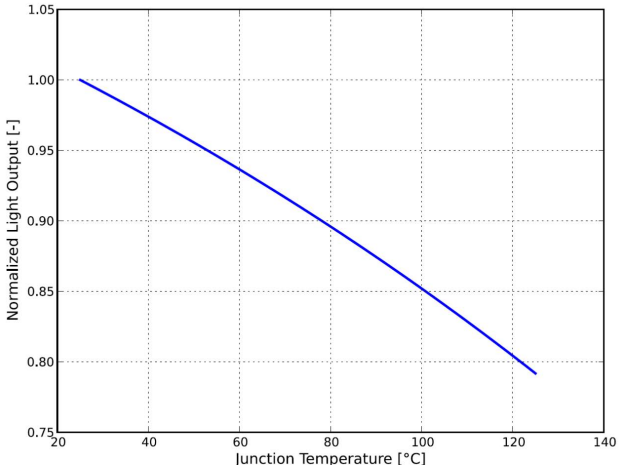
100,000 cycles
Test according to IEC 62717
30 s on / 30 s off at a forward current of 1000 mA

5. Electrical values

5.1 Typ. forward voltage vs. forward current



5.2 Forward voltage vs. tc temperature



The diagrams are based on statistic values.
The real values can be different.

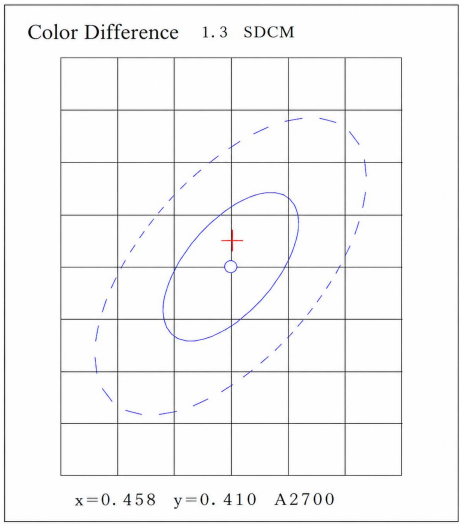
6. Photometric characteristics

6.1 Coordinates and tolerances according to CIE 1931

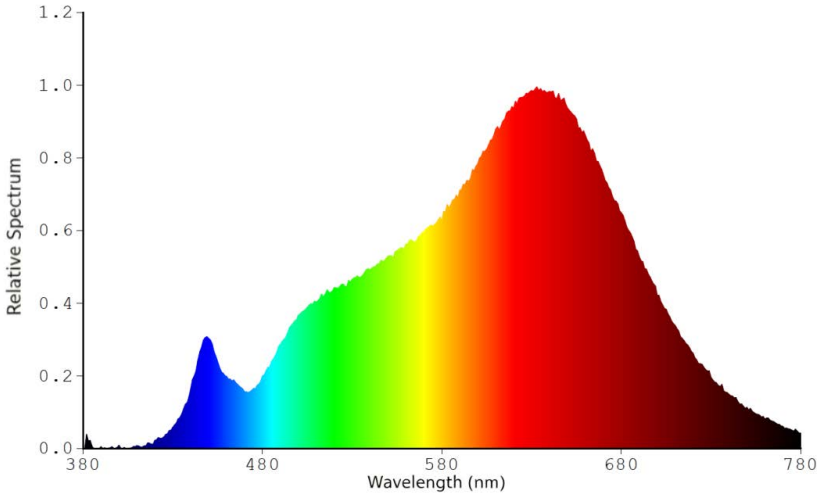
The specified colour coordinates are integral measured by current impulse of 540 mA and a duration of 100 ms.
The ambient temperature of the measurement is 25 °C.
The measurement tolerance of the colour coordinates are ± 0.01.

2700 K, CRI 95

	x0	y0
Centre	0.458	0.410

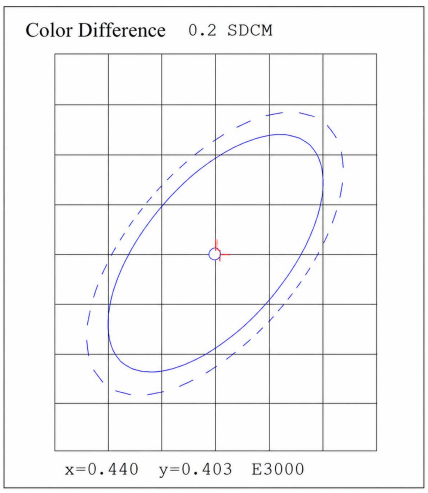


MacAdam Ellipse: 3SDCM

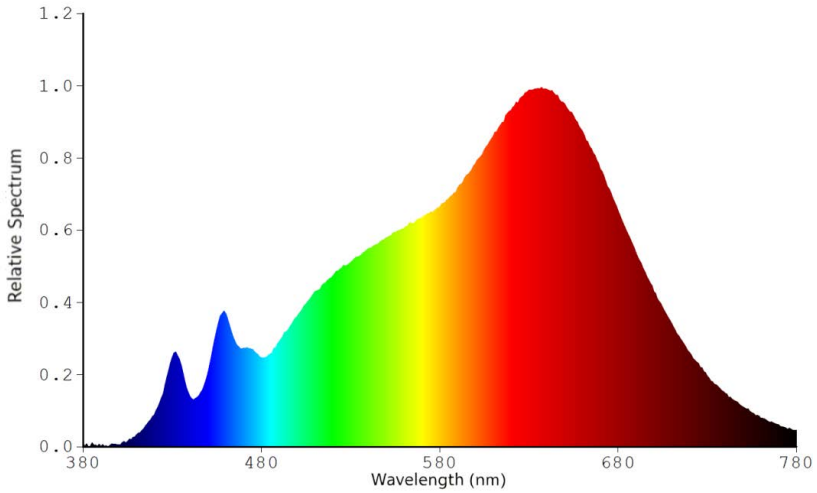


3000 K, CRI 90

	x0	y0
Centre	0.440	0.403

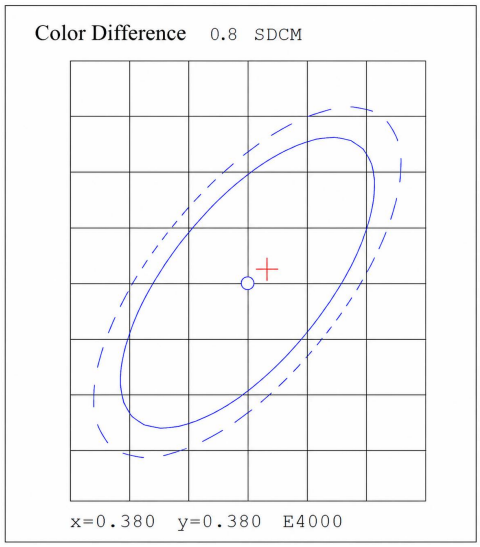


MacAdam Ellipse: 3SDCM

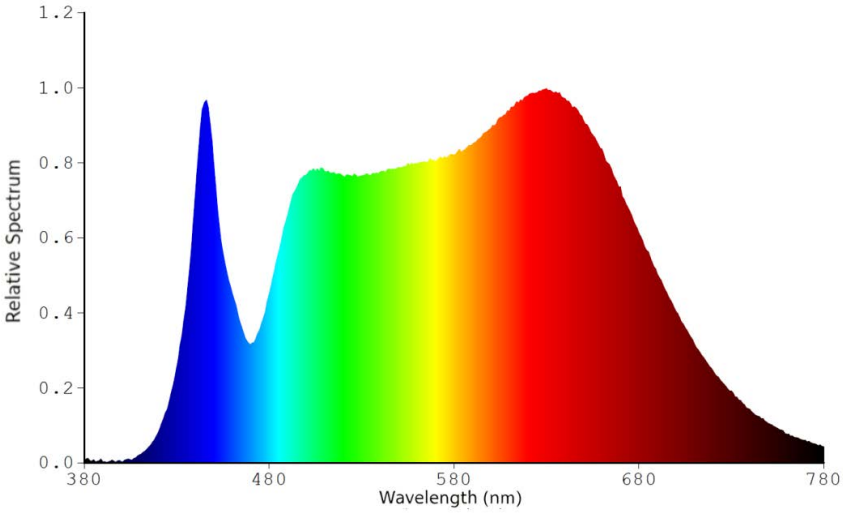


4000 K, CRI 85

	x0	y0
Centre	0.4339	0.4032

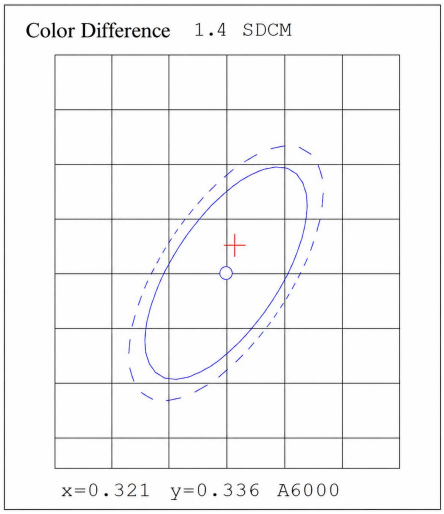


MacAdam Ellipse: 3SDCM

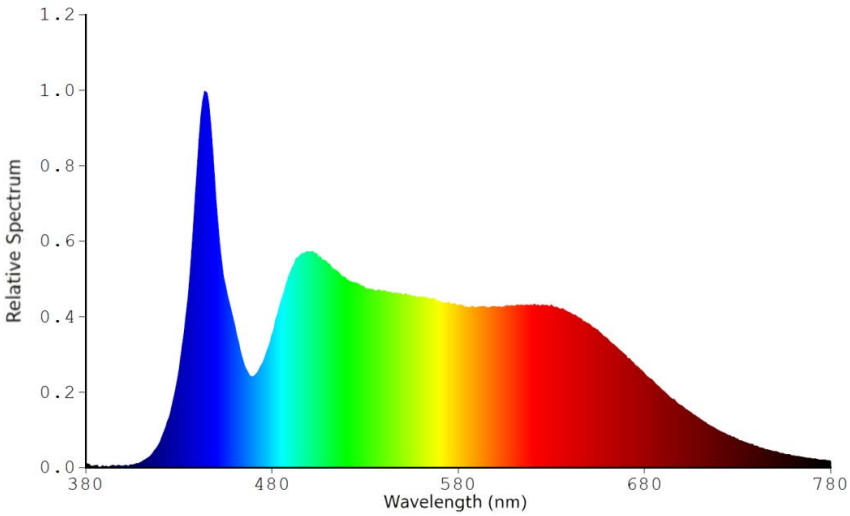


6000 K, CRI 80

	x0	y0
Centre	0.321	0.336



MacAdam Ellipse: 3SDCM



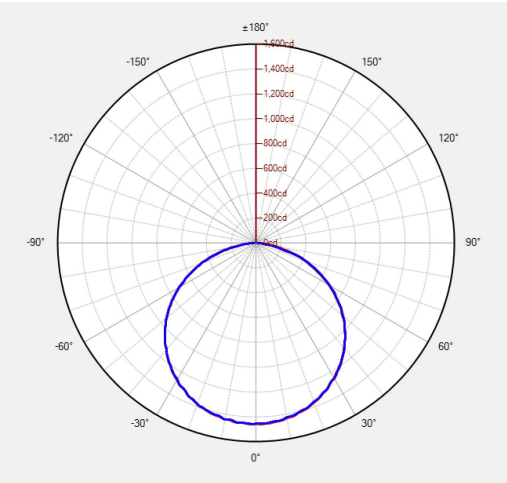
6.2 Spectral G-Index

CCT	CRI	G-Index
2,700 K	70	1.7
3,000 K	70	1.4
3,500 K	70	1.3
4,000 K	70	1.0
5,000 K	70	0.7
2,700 K	80	1.7
3,000 K	80	1.5
3,500 K	80	1.3
4,000 K	80	1.0
5,000 K	80	0.7

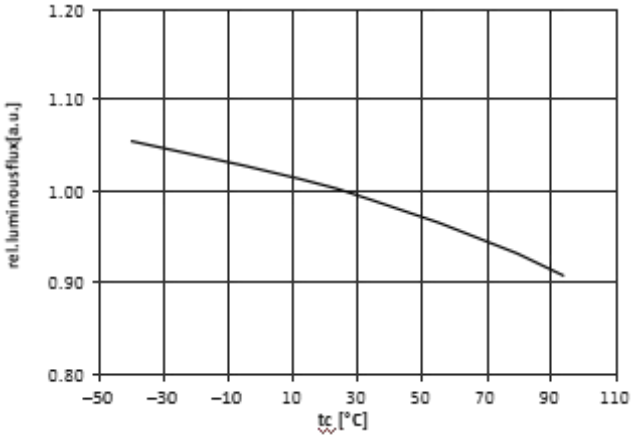
Based on typical spectral distribution measured at 25°C and Irated.

6.3 Light distribution

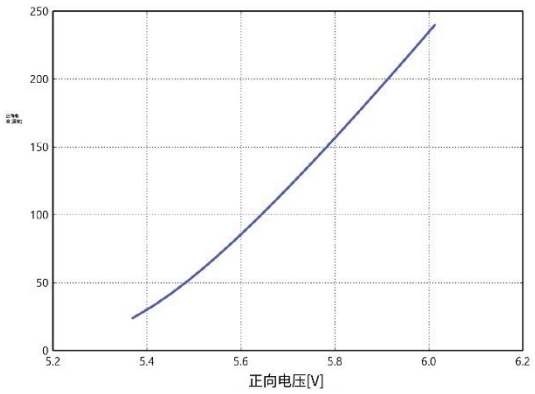
2x8 lens 9400lm 2x8-5050-PCBA modules are designed to be compatible with IP6x lenses. This allows multiple light distributions.



6.4 Relative luminous flux vs. tc temperature



6.5 Relative luminous flux vs. operating current



The diagrams are based on statistic values. The real values can be different.

7. Miscellaneous

7.1 Additional Information

For the latest version of this document and additional technical information, please visit:www.brightlx.com

7.2 Disclaimer

The information contained in this document is believed to be accurate and reliable. However, BrightLX reserves the right to make changes to specifications and product descriptions without prior notice.

Performance values are measured under controlled laboratory conditions and may vary depending on operating environment and system configuration.