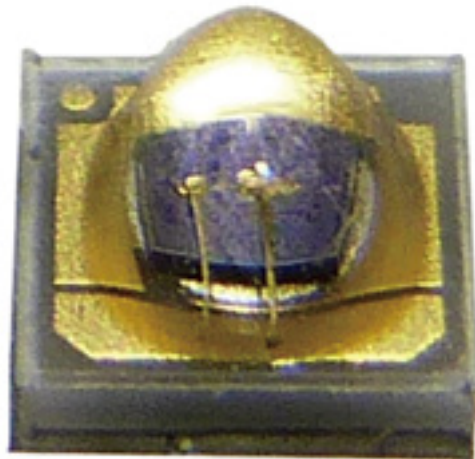


NMOP-10100-850-1A-LSx

SURFACE MOUNT LED TAPE AND REEL



Product Series Model:

Part No.	Viewing Angle
NMOP-10100-850-1A-LS60	60°
NMOP-10100-850-1A-LS90	90°
NMOP-10100-850-1A-LS130	130°
NMOP-10100-850-1A-LSA	(X)150° (Y)100°
NMOP-10100-850-1A-LSB	(X)48° (Y)30°
NMOP-10100-850-1A-LSC	45°
NMOP-10100-850-1A-LSD	(X)100° (Y)60°
NMOP-10100-850-1A-LSE	57°

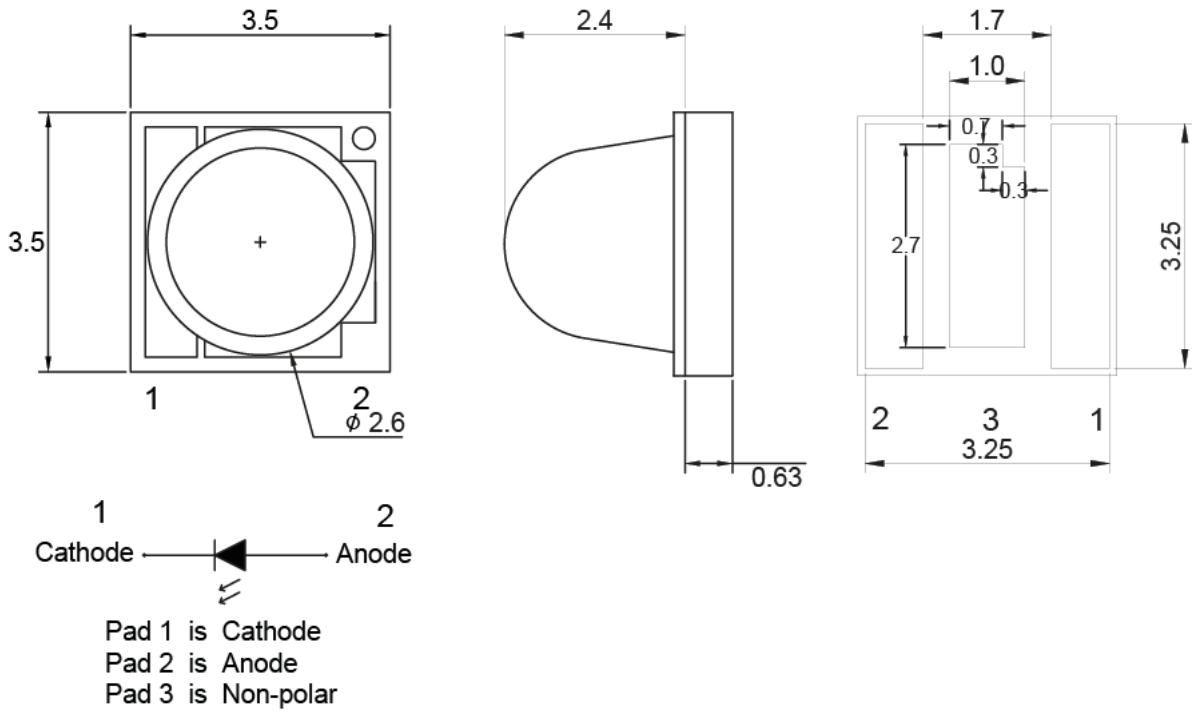
Device Selection Guide

Material	Color	
	Emitted	Lens
AlGaAs	Infrared	Water Clear

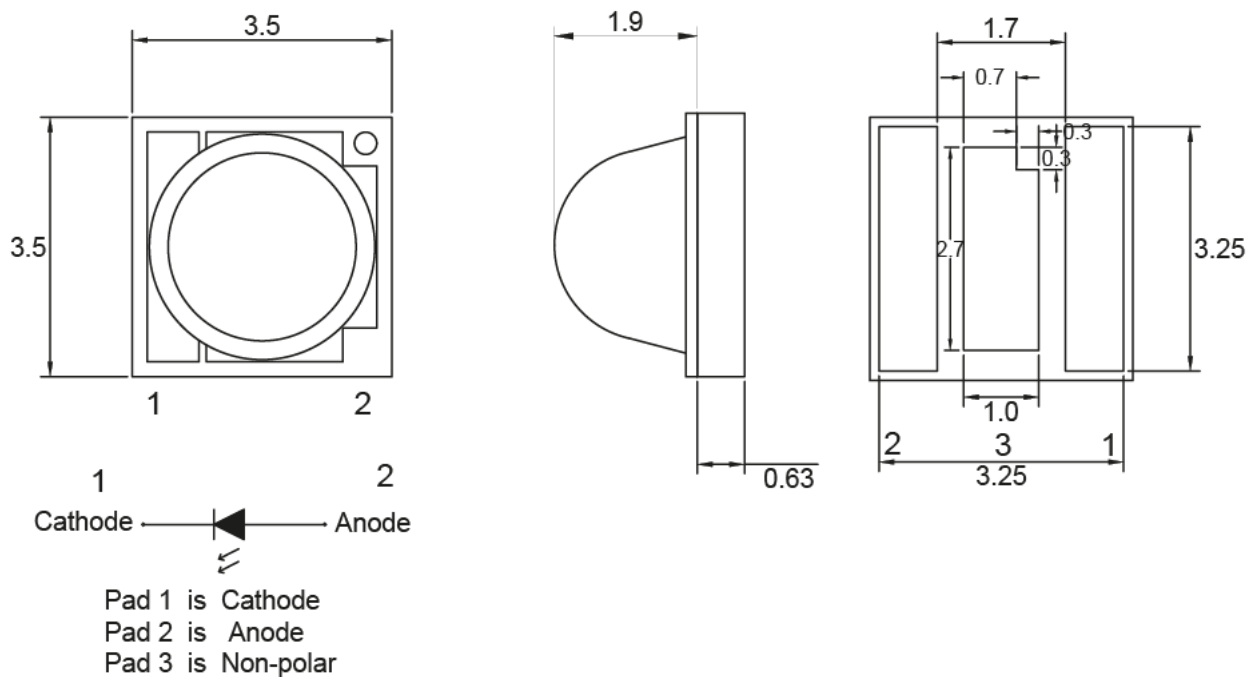
NMOP-10100-850-1A-LSx

Package Dimensions

NMOP-10100-850-1A-LS60



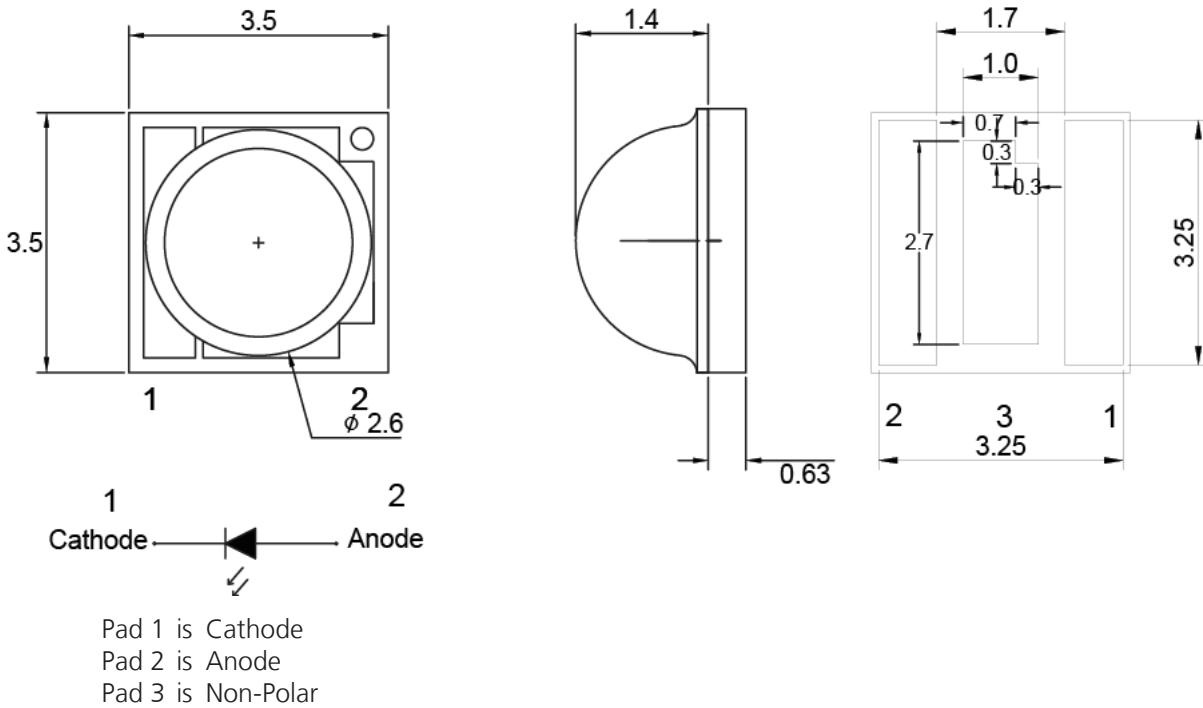
NMOP-10100-850-1A-LS90



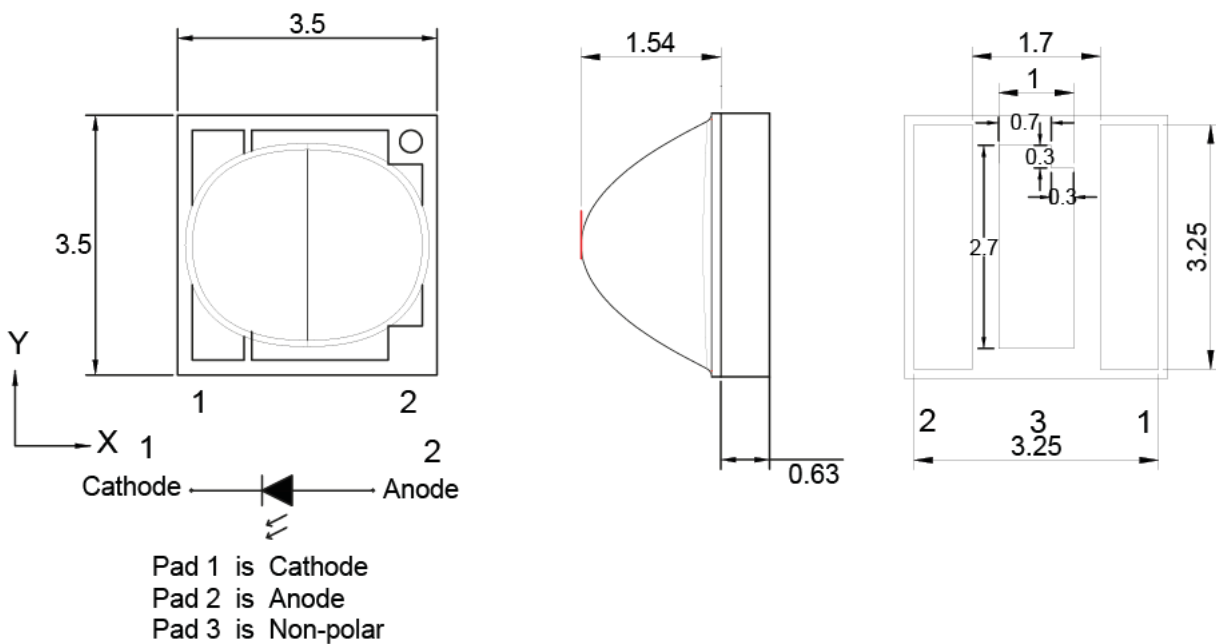
Note : 1. All dimension are in millimeter tolerance is ± 0.2 mm unless otherwise noted.
 2. Specifications are subject to change without notice.

NMOP-10100-850-1A-LSx

NMOP-10100-850-1A-LS130



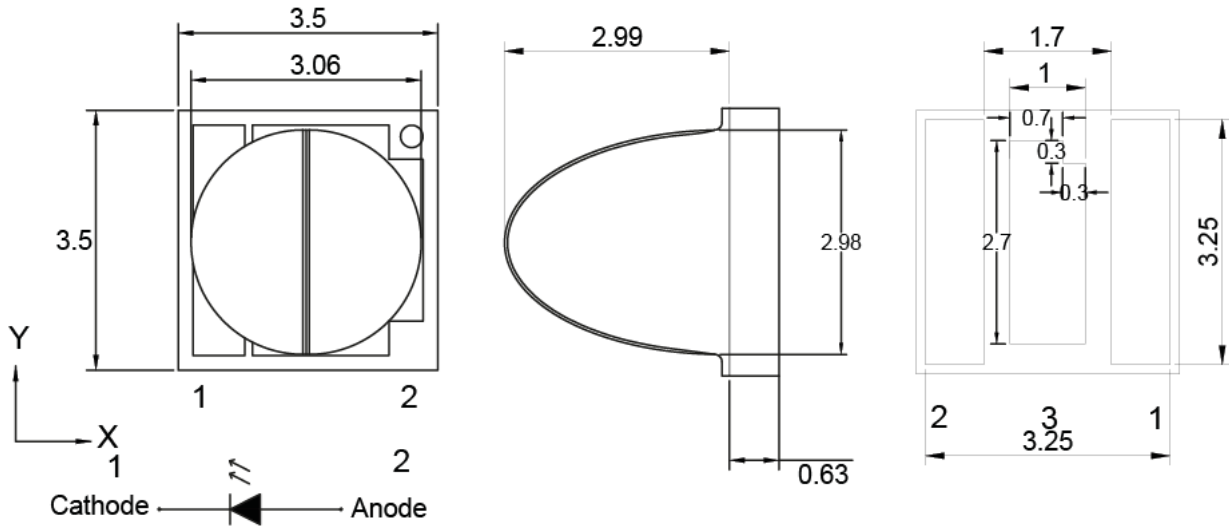
NMOP-10100-850-1A-LSA



Note : 1. All dimension are in millimeter tolerance is ± 0.2 mm unless otherwise noted.
2. Specifications are subject to change without notice.

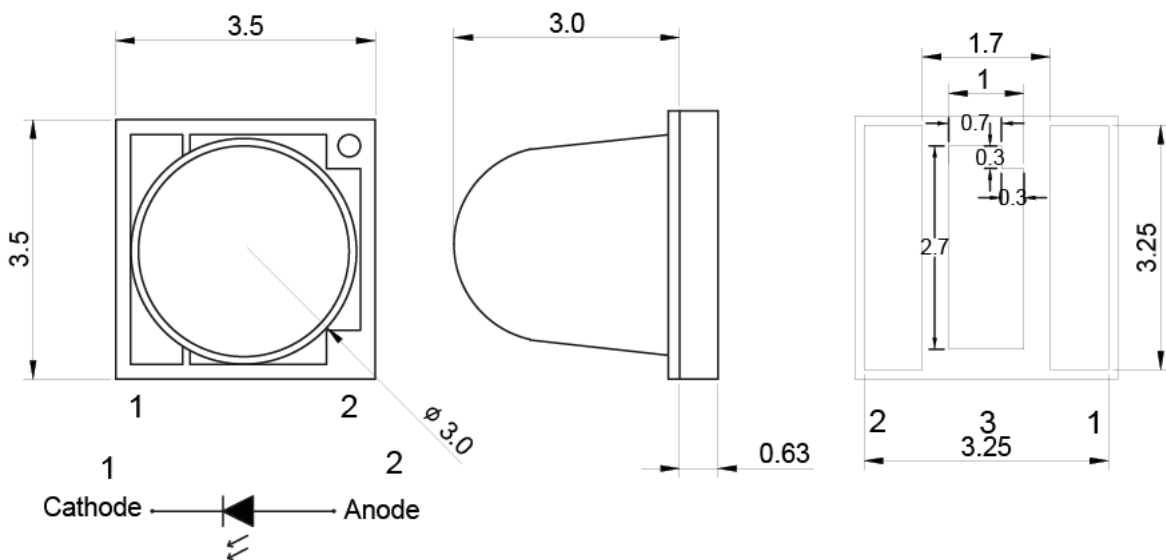
NMOP-10100-850-1A-LSx

NMOP-10100-850-1A-LSB



Pad 1 is Cathode
 Pad 2 is Anode
 Pad 3 is in conductivity or anode

NMOP-10100-850-1A-LSC

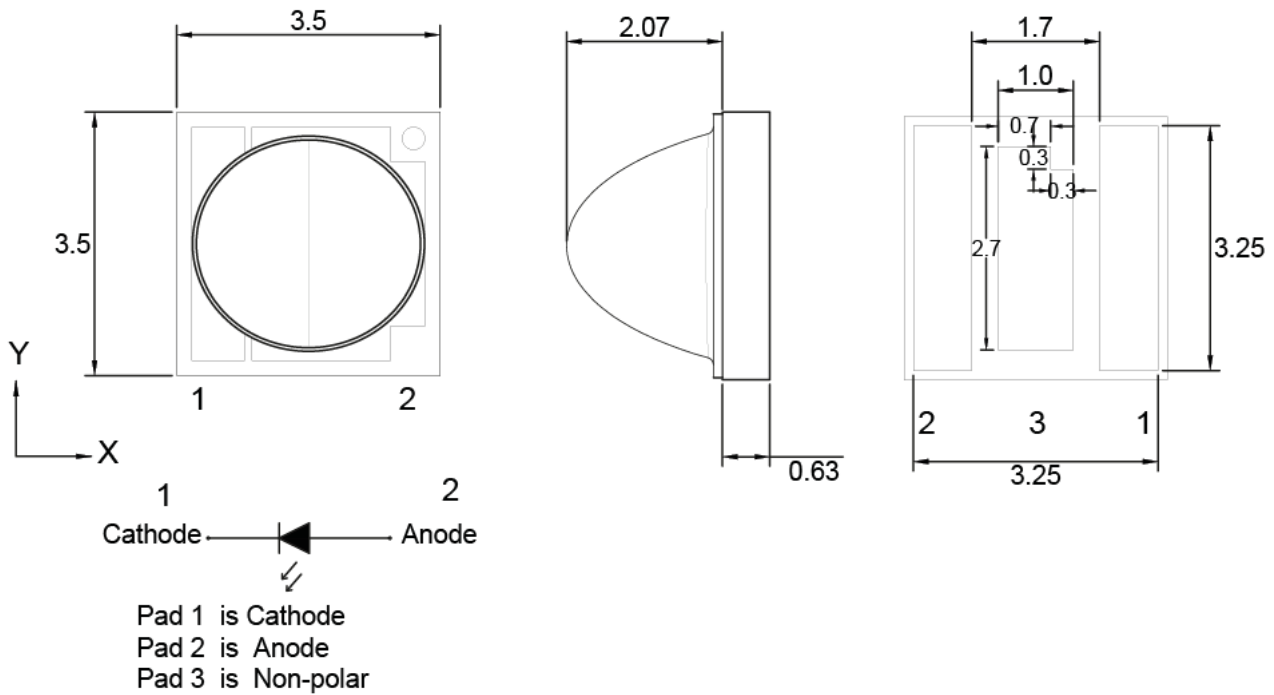


Pad 1 is Cathode
 Pad 2 is Anode
 Pad 3 is Non-polar

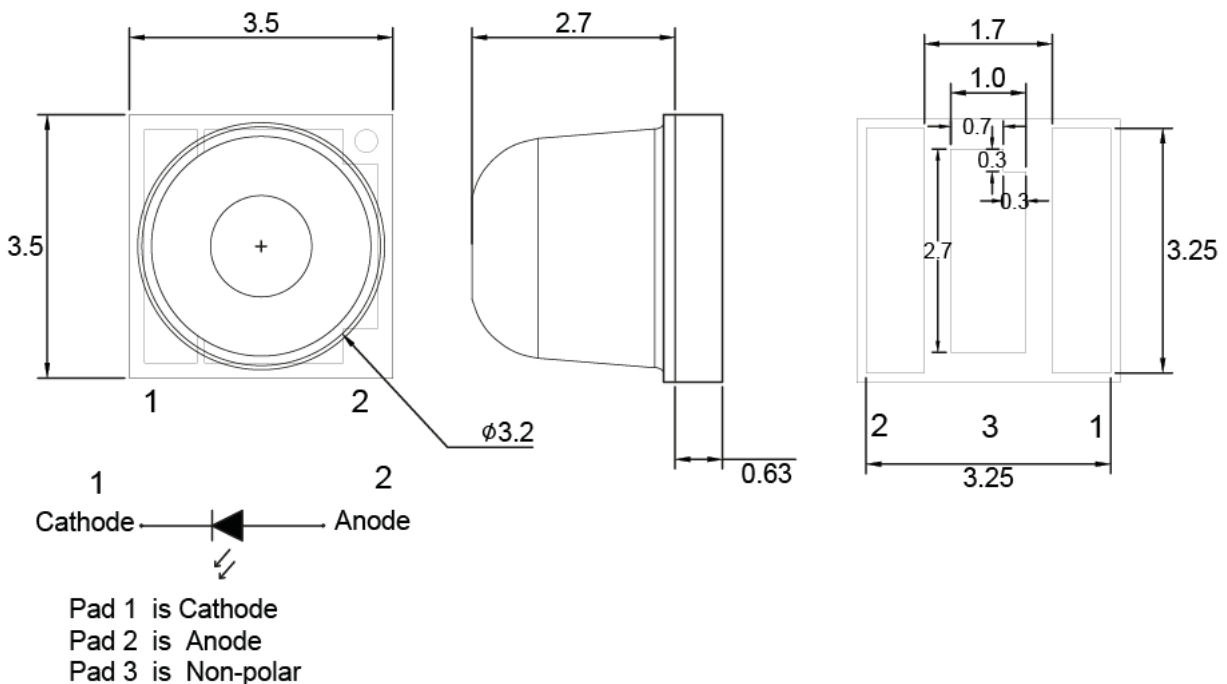
Note : 1. All dimension are in millimeter tolerance is ± 0.2 mm unless otherwise noted.
 2. Specifications are subject to change without notice.

NMOP-10100-850-1A-LSx

NMOP-10100-850-1A-LSD

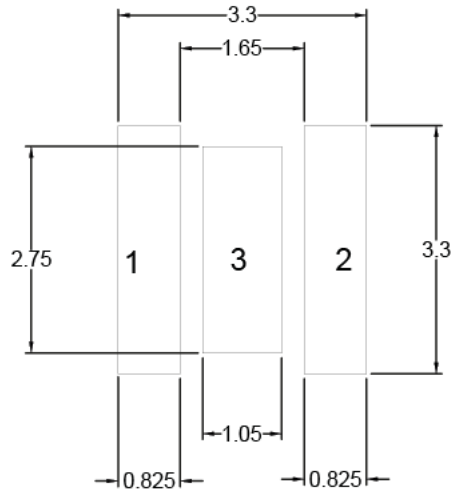


NMOP-10100-850-1A-LSE



Note : 1. All dimension are in millimeter tolerance is $\pm 0.2\text{mm}$ unless otherwise noted.
 2. Specifications are subject to change without notice.

Recommended Soldering Pad Dimensions



Note : The tolerances unless mentioned is ± 0.1 mm,Unit=mm.

Absolute Maximum Ratings at Ta=25° C

Parameter	Symbol	Ratings	UNIT
Power Consumption	P_{tot}	2.3	W
DC Forward Current	I_F	1000	mA
Reverse Current (VR=5V)	I_r	10	μ A
Peak pulse current Duty 1/10@10KHz	I_{FP}	2000	mA
ESD Sensitivity	HMB 100pf/1.5K Ω	2000	V
	MM 200pf/0 Ω	150	V
LED junction Temperature	T_j	145	$^{\circ}$ C
Thermal resistance	Rth j-s	8	$^{\circ}$ C/W
Operating Temperature	Topr	-40 ~ +125	$^{\circ}$ C
Storage Temperature	Tstg	-40 ~ +125	$^{\circ}$ C
Soldering Temperature	T_p	260	$^{\circ}$ C

Typical Electrical & Optical Characteristics (Ta=25° C)

Radiant Intensity	Symbol	Min.	Typ.	Max.	Unit	Condition
NMOP-10100-850-1A-LS60	le	300	400	---	mW/sr	IF=1A
NMOP-10100-850-1A-LS90	le	250	330	---	mW/sr	IF=1A
NMOP-10100-850-1A-LS130	le	140	210	---	mW/sr	IF=1A
NMOP-10100-850-1A-LSA	le	120	170	---	mW/sr	IF=1A
NMOP-10100-850-1A-LSB	le	520	700	---	mW/sr	IF=1A
NMOP-10100-850-1A-LSC	le	430	560	---	mW/sr	IF=1A
NMOP-10100-850-1A-LSD	le	210	280	---	mW/sr	IF=1A
NMOP-10100-850-1A-LSE	le	300	375	---	mW/sr	IF=1A

Note : 1.The forward voltage data did not including $\pm 0.1V$ testing tolerance.
 2.The radiant intensity data did not including $\pm 15\%$ testing tolerance.

Typical Electrical & Optical Characteristics (Ta=25° C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiant Flux	Φ_e	---	700	---	mW	IF=1A
Peak Emission Wavelength	λ_P	---	850	---	nm	IF=1A
Spectral Bandwidth at 50% of I _{max}	$\Delta\lambda$	---	40	---	nm	IF=1A
Forward Voltage	V _F	1.4	---	2:3	V	IF=1A

Viewing Angle	Symbol	Value	Unit	Condition
NMOP-10100-850-1A-LS60	2θ 1/2	60	deg	IF=1A
NMOP-10100-850-1A-LS90		90		IF=1A
NMOP-10100-850-1A-LS130		130		IF=1A
NMOP-10100-850-1A-LSA		(X)150 (Y)100 45		IF=1A
NMOP-10100-850-1A-LSB		(X)48 (Y)30		IF=1A
NMOP-10100-850-1A-LSC		45		IF=1A
NMOP-10100-850-1A-LSD		(X)100 (Y)60		IF=1A
NMOP-10100-850-1A-LSE		57		IF=1A

Note : 1.The forward voltage data did not including ±0.1V testing tolerance.
 2.The radiant intensity data did not including ±15% testing tolerance.

Typical Electro-Optical Characteristics Curve

Fig.1 Relative Intensity VS. Forward Current

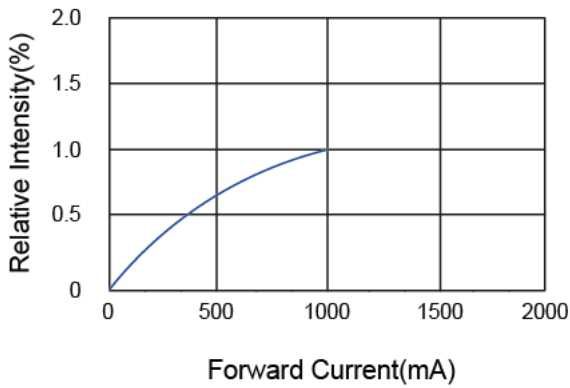


Fig.2 Forward Current VS. Ambient Temperature

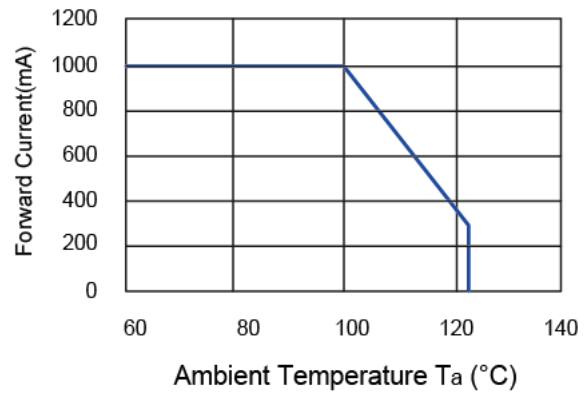


Fig.3 Relative Radiant Power VS. Wavelength

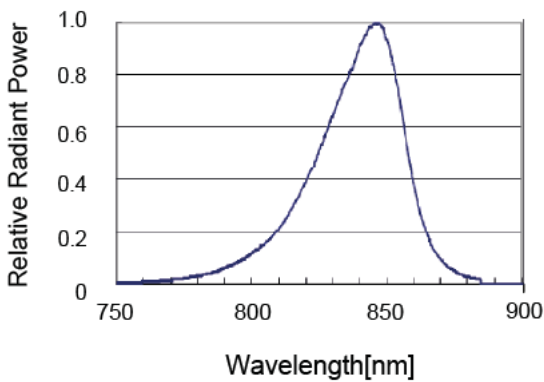
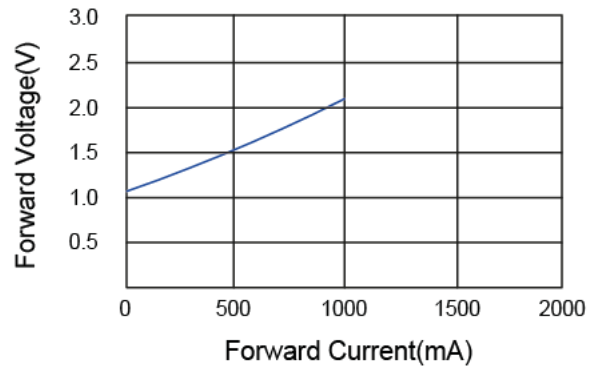
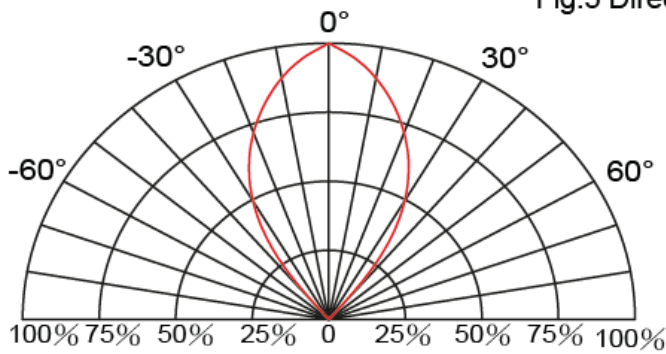


Fig.4 Forward Voltage VS. Forward Current

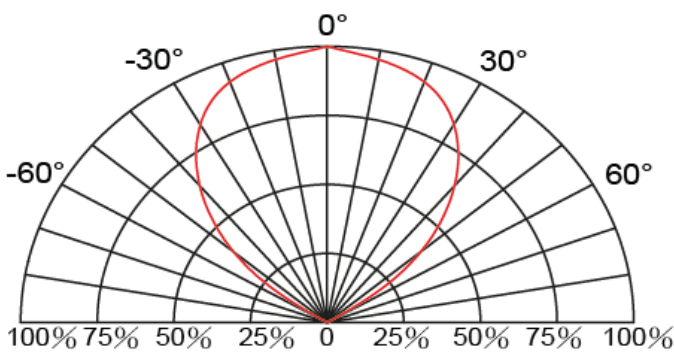


NMOP-10100-850-1A-LSx

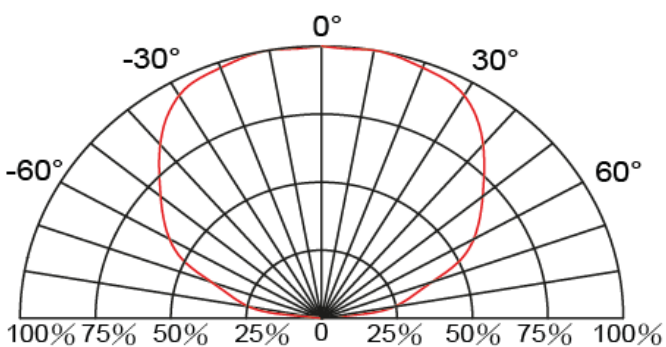
Fig.5 Directive Radiation



NMOP-10100-850-1A-LS60

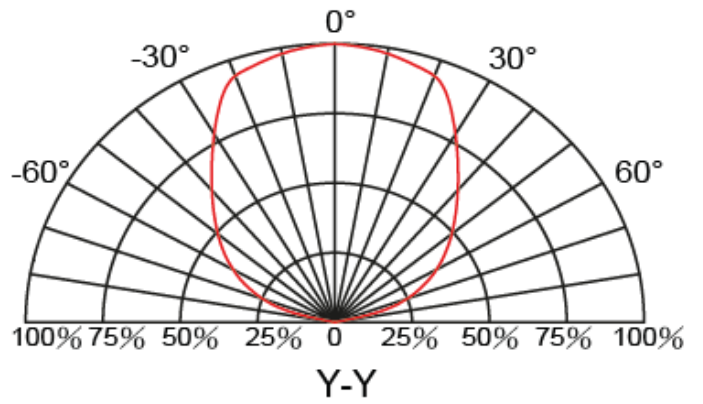
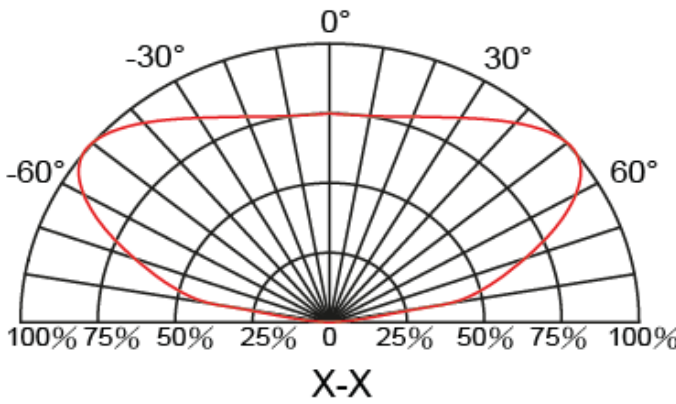


NMOP-10100-850-1A-LS90

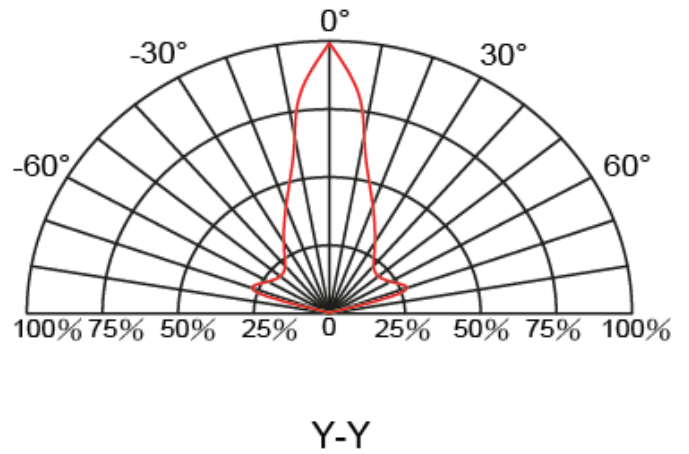
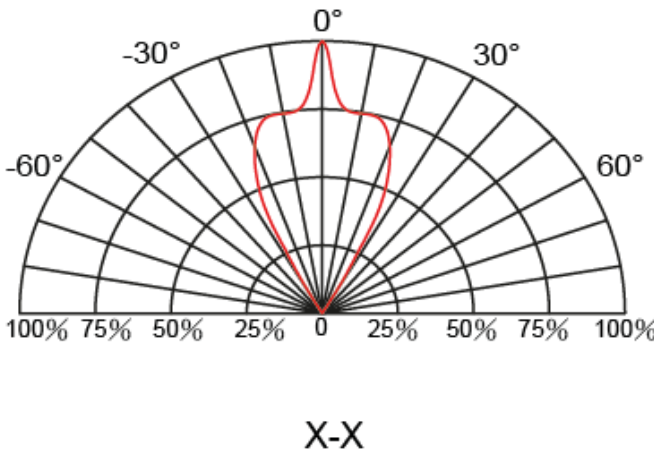


NMOP-10100-850-1A-LS130

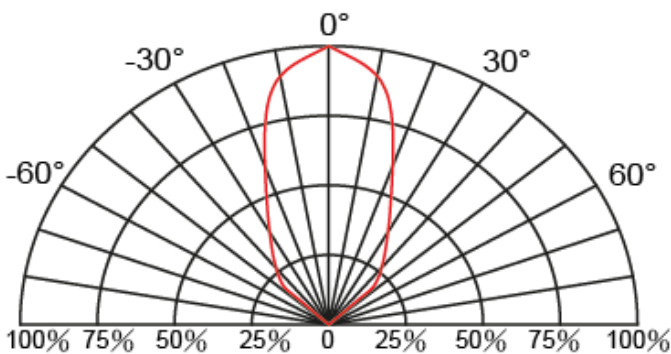
NMOP-10100-850-1A-LSx



NMOP-10100-850-1A-LSA

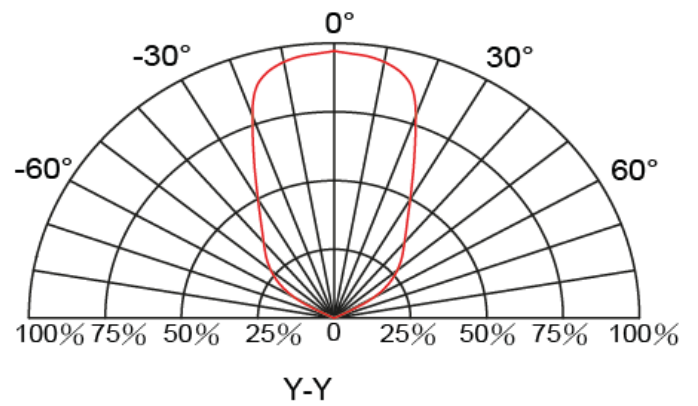
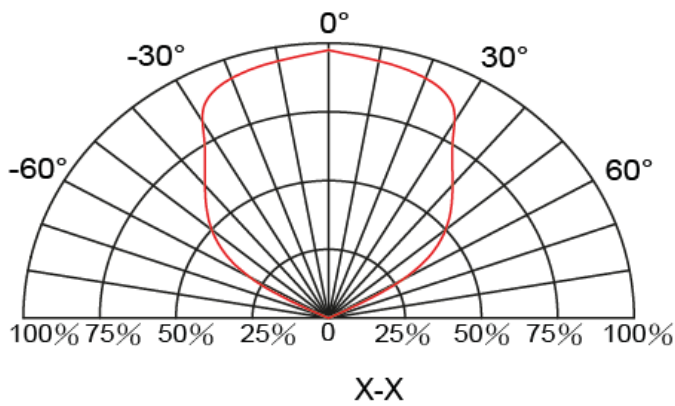


NMOP-10100-850-1A-LSB

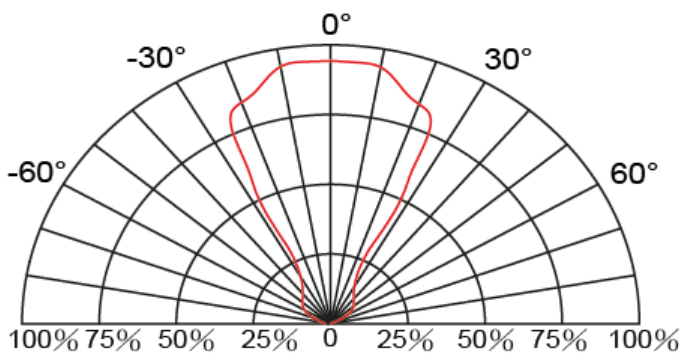


NMOP-10100-850-1A-LSC

NMOP-10100-850-1A-LSx



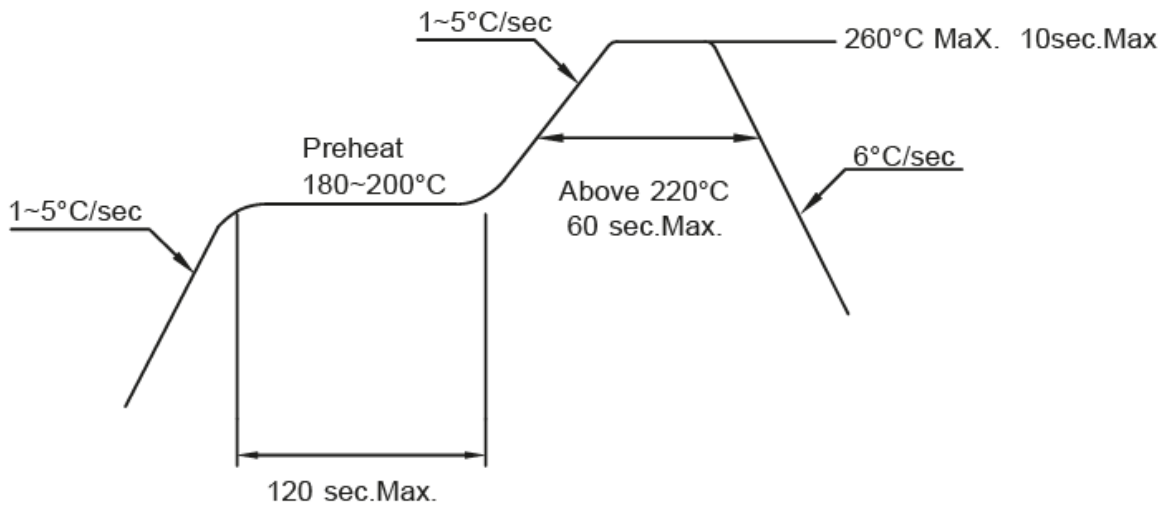
NMOP-10100-850-1A-LSD



NMOP-10100-850-1A-LSE

Recommended Soldering Conditions

PB-Free Reflow Solder



- Note:
1. Reflow soldering should not be done more than two times.
 2. When soldering, do not put stress on the LEDs during heating.
 3. After soldering, do not warp the circuit board.

Reliability Test:

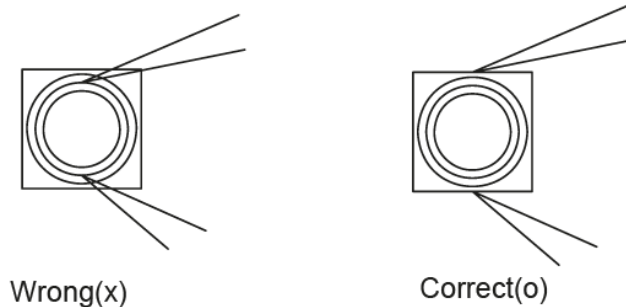
Classification	Test Item	Test Condition	Sample Size
Endurance Test	Operating Life Test	1. Ta=25°C 2. If=1A 3. t=1000 hrs (-24hrs,+72hrs)	22
	High Temperature Storage Test	1. Ta=100°C±5°C 2. t=1000 hrs (-24hrs,+72hrs)	22
	Low Temperature Storage Test	1. Ta=-40°C±5°C 2. t=1000 hrs (-24hrs,+72hrs)	22
	High Temperature High Humidity Storage Test	1. Ta=85°C 2. RH=85% 3. t=1000hrs(-24hrs,+72hrs)	22
Environmental Test	Thermal Shock Test	1. Ta=100°C±5°C ~ -40°C±5°C 20min/ 10sec / 20min 2. total 100 cycles	22
	Temperature Cycling	1. 100°C±5°C ~ -40°C±5°C 30mins / 5mins / 30mins 2. 100 Cyeles	22
	IR Reflow	1. T=260°C Max. 10sec.Max. 2. 6 Min	22

Notes

Eye safety has been evaluated according to IEC 62471:2006 / EN 62471:2008 (Photobiological safety of lamps and lamp systems). Within the risk grouping system of this IEC standard, the device specified in this data sheet fall into the class exempt group (exposure time 10000 s).

Please follow the guideline to grab LEDs

- don't touch lens with the fingers
- use tweezers to grab LED
- don't apply more than 4N of lens(400G) directly onto the lens
- don't touch lens with the tweezers



Lens cleaning

in the case where a minimal level of dirt and dust particles can not be guaranteed, a suitable cleaning solution can be applied to the lens surface

- try a gentle swabbing using a lint-free swab
- if needed, the use of lint-free swab and isopropyl alcohol used gently removes dirt from the lens
- don't use other solvents as they may directly react with the led assembly.
- don't use ultrasonic cleaning that the led will be damaged

Disclaimer

The information in this data sheet subject to change without notice.
Always make sure to use the most recent release, or consult with us before your final selection.