



CIEL LIGHT CO., LTD.

PRODUCT SPECIFICATION

Customer: _____

Customer's Model No.: _____

Customer's Drawing No.: _____

Model No.: CL-3019RIRC1A-940-CC

Drawing No.: _____

Features

Low power consumption

High Efficiency

Round type

T1 (3mm) diameter

With Flange

Solder leads without stand-off

Compliant with RoHS

Descriptions

Chip Material: AlGaAs/GaAs+AlGaInP/GaAs

Emitting Color: Infrared Emission+Red

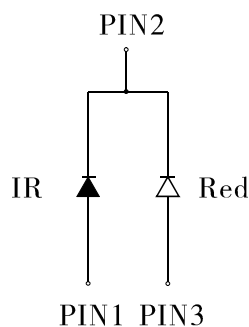
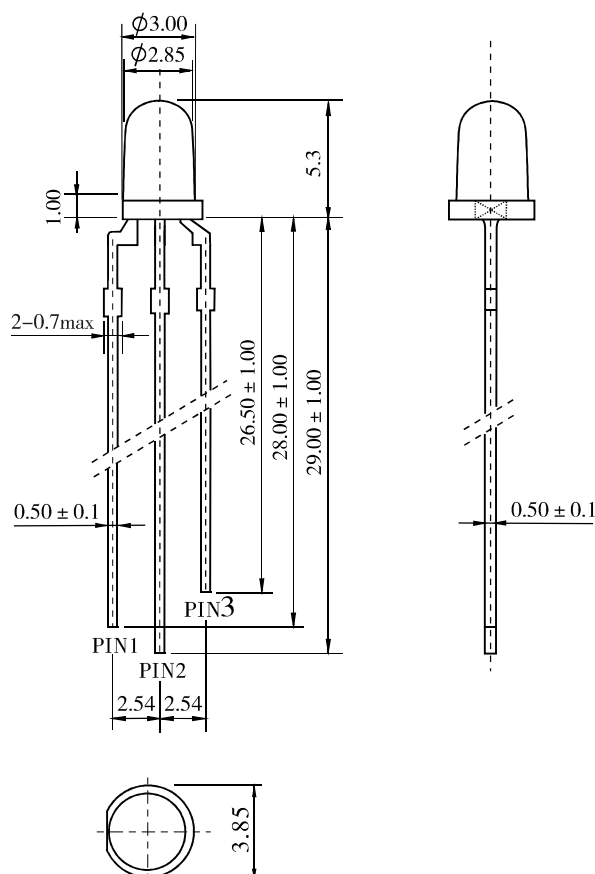
Lens Color: Water Clear

ATTENTION



OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

Outline Drawing



Tolerance is $\pm 0.25\text{mm}$
Unless Otherwise Specified.

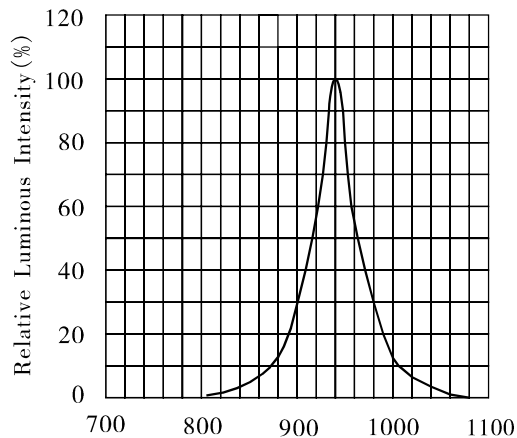
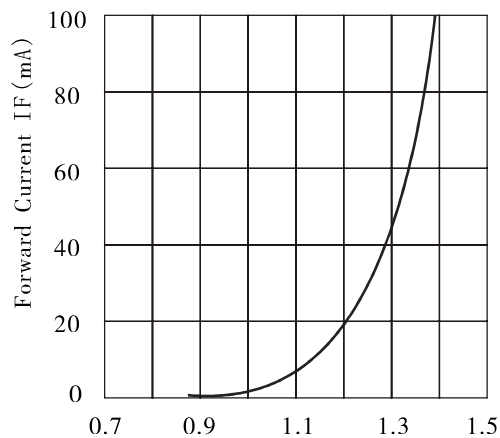
Electrical Optical Characteristics (Ta=25℃)

Parameter	Symbol	Infrared Emission			Unit	Test Condition
		Min	Typ	Max		
Forward Voltage	V_F	1.10	---	1.50	V	IF=20mA
Radiant Intensity	I_V	5.0	9.8	---	mW	IF=20mA
Peak Wavelength	λ_P	---	940	---	nm	IF=20mA
Spectral Line half-width	$\Delta \lambda$	---	50	---	nm	IF=20mA
Reverse Leakage Current	I_R	---	---	50	μA	VR=5V
Viewing Angle	$2\theta_{1/2}$	---	60	---	Deg	IF=20mA

Absolute Maximum Parameters (Ta=25℃)

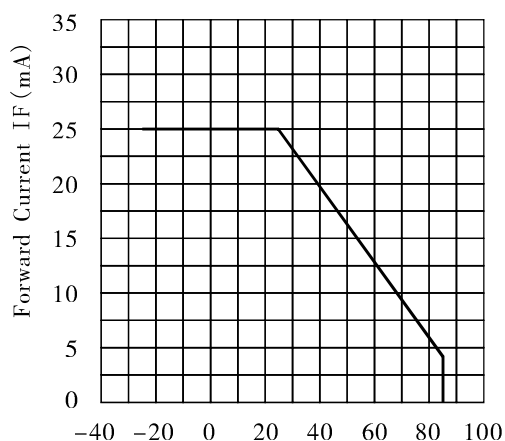
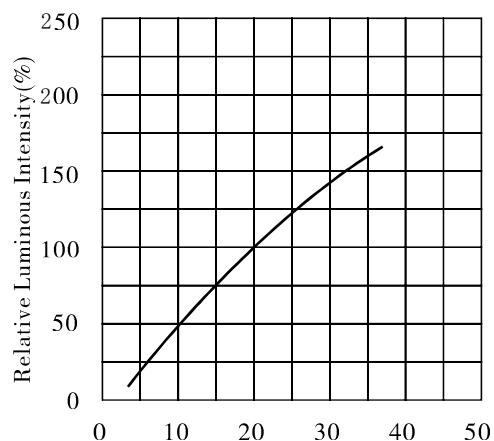
Parameter	Symbol	Condition	Rating	Unit
Power Dissipation	P_D	---	40	mW
Reverse Voltage	V_R	---	5	V
Forward Average Current	I_F	---	25	mA
Temperature Coefficient	I/C	---	0.33	mA/℃
Pulse Current	IFP	Duty=1/10,1kHz	100	mA
Operating Temperature Range	Topr	---	-25 ~ +85	℃
Storage Temperature Range	Tstg	---	-30 ~ +100	℃
Soldering Condition	Tsd	---	260℃/5sec	℃

Typical Electro/Optical Characteristic Curves ($T_a=25^{\circ}\text{C}$)



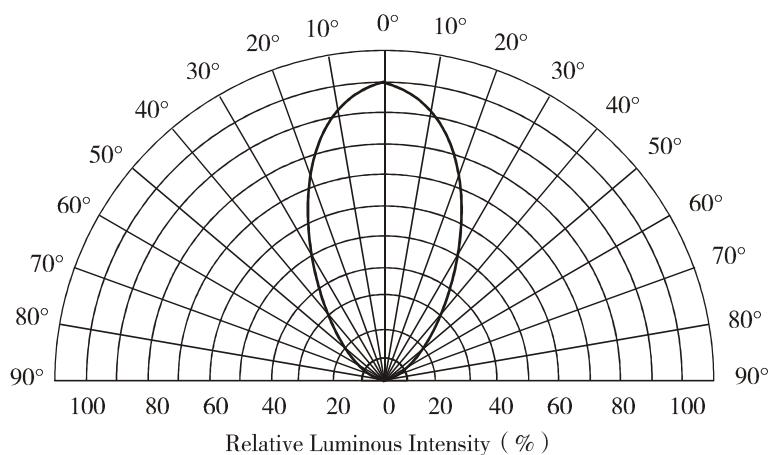
Forward Voltage V_F (V)

Peak Wavelength λ_p (nm)



Forward Current I_F (mA)

Ambient Temperature T_a ($^{\circ}\text{C}$)



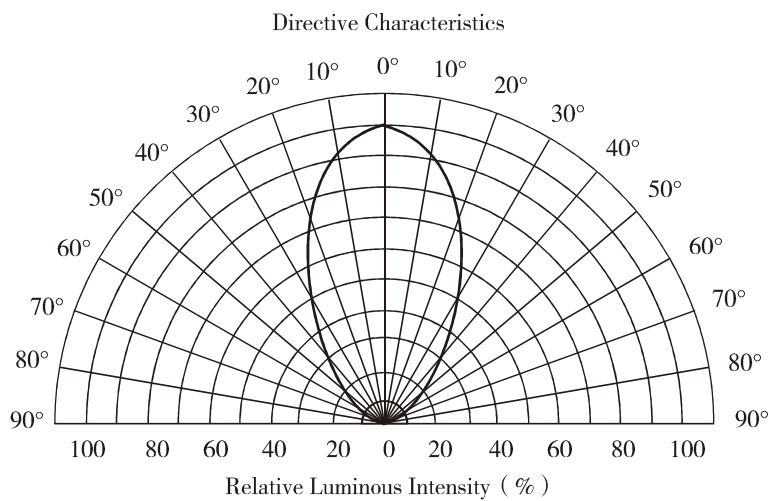
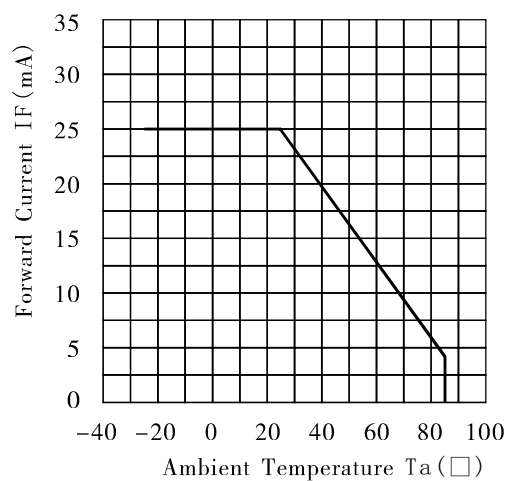
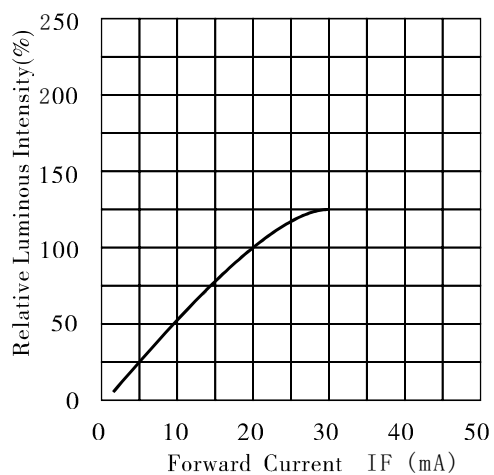
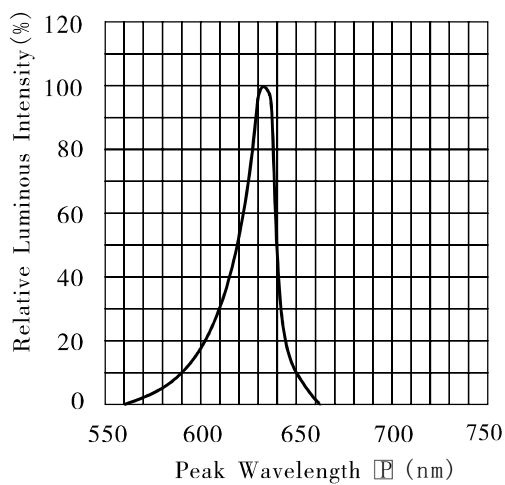
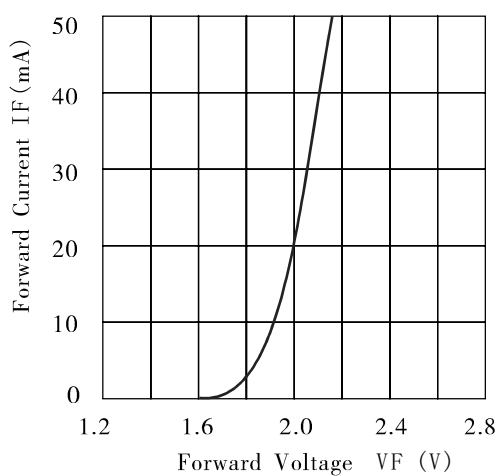
Electrical Optical Characteristics (Ta=25℃)

Parameter	Symbol	Red			Unit	Test Condition
		Min	Typ	Max		
Forward Voltage	V_F	---	2.00	2.40	V	IF=20mA
Luminous Intensity	I_V	770	1520	---	med	IF=20mA
Peak Wavelength	λ_P	---	632	---	nm	IF=20mA
Dominant Wavelength	λ_d	---	624	---	nm	IF=20mA
Spectral Line half-width	$\Delta \lambda$	---	20	---	nm	IF=20mA
Reverse Leakage Current	I_R	---	---	50	μA	VR=5V
Viewing Angle	$2\theta_{1/2}$	---	60	---	Deg	IF=20mA

Absolute Maximum Parameters (Ta=25℃)

Parameter	Symbol	Condition	Rating	Unit
Power Dissipation	P_D	---	60	mW
Reverse Voltage	V_R	---	5	V
Forward Average Current	I_F	---	25	mA
Temperature Coefficient	I/C	---	0.33	mA/℃
Pulse Current	IFP	Duty=1/10,1kHz	100	mA
Operating Temperature Range	Topr	---	-25 ~ +85	℃
Storage Temperature Range	Tstg	---	-30 ~ +100	℃
Soldering Condition	Tsd	---	260℃/5sec	℃

Typical Electro/Optical Characteristic Curves ($T_a=25^{\circ}\text{C}$)



Reliability Test Conditions

Test Item	Test Condition	Result	Judgment Criteria
Consecutive operating life test	IF=20mA, T=25℃, t=168h	0/100	Forward Voltage $V_F(V) = \text{Upper Limit} \times 1.2$ Reverse Leakage Current $I_R(\mu A) = \text{Upper Limit} \times 2.0$ Luminous Intensity IV $(\text{mcd}) = \text{Lower Limit} \times 0.7$
High temperature storage life test	T=100℃, t=168h	0/100	
Low temperature storage life test	T=25℃, t=168h	0/100	
High temperature humidity storage life test	T=85 ± 2℃, RH=85% ± 3, t=168h	0/100	
Temperature cycle test	-25℃~25℃~100℃ 30min 5min 30min 10cycles	0/100	
Thermal shock test	100℃ 0℃ 5min 5min 20cycles	0/100	
Soldering heat test	T=260 ± 5℃, t=10s ± 1s	0/100	
Solderability test	T=235 ± 5℃, t=5s ± 0.5s	0/100	Steeped Part ≥ 95%
Fall test	h=100cm, 50times	0/100	Surface Appearance Photoelectric Properties Intact
Terminal strength test	W=9.8N, t=30 ± 5s	0/100	
Lead bending test	W=4.9N, 2times	0/100	