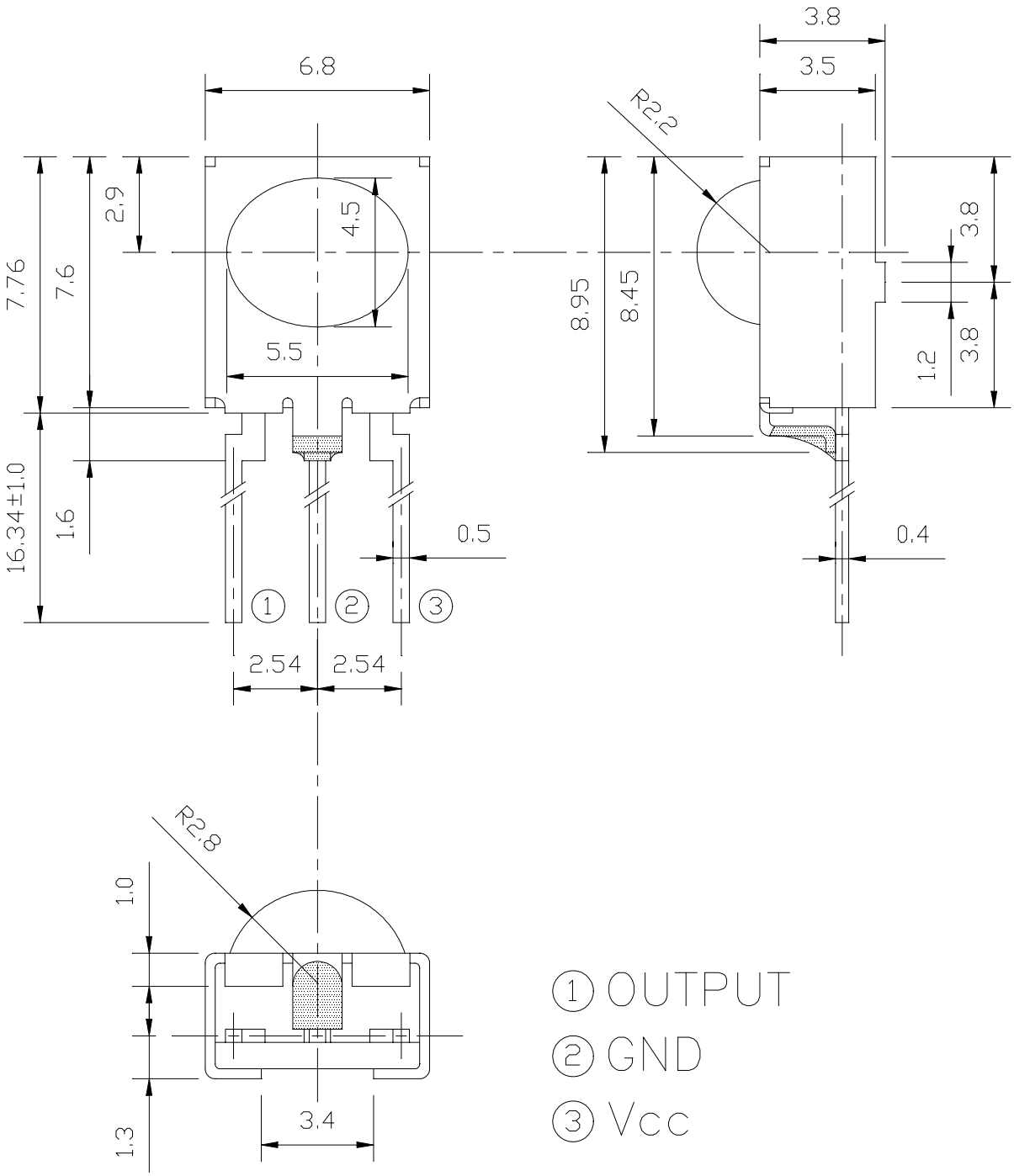
■ PACKAGE DIMENSIONS：



OFFICE: NO 25,Lane 76,Chung Yang Rd, Sec.3 Tucheng, Taipei 236, Taiwan, R.O.C.
TEL : 886-2-2267-2000,2266-9936 (22 Lines)
FAX : 886-2-2267-6189
http://www.everlight.com

■ NOTES：

1. This drawing measure is a standard value. All dimensions are in millimeter.
2. In case of designation is tolerance ± 0.3mm.
3. Lead spacing is measured where the lead emerge from the package.
4. Protruded resin under flange 1.0mm Max.
5. Lens color: Black.
6. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
7. These specification sheets include materials protected under copyright of EVERLIGHT corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT consent.
8. When using this produce, please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
9. Coverage:
   This specification is applied to the item of infrared receiving device marked "round" in the table below.

IR MODULE LIST

Items	Carrier Frequencies(Typ)
IRM-8601V-1	32.75 kHz
IRM-8601V-2	36.00 kHz
IRM-8601V	38.00 kHz
IRM-8601V-5	56.80 kHz

■ Description：

IRM-8601V series are small and high performance receiving devices for infrared remote control system. Regarding the transmission distance, IRM-8601V is longer than IRM-8601S. The pulse width of IRM-8601V series are stable relating to commander's power or distance between transmitter and receiver.

■ Feature：

1. High protection ability to EMI and metal case can be customized.
2. Mold type and metal case type to meet the design of front panel.
3. Elliptic lens to improve the characteristic against
4. Line-up for various center carrier frequencies.
5. Low voltage and low power consumption.
6. High immunity against ambient light.
7. Photodiode with integrated circuit.
8. TTL and CMOS compatibility.
9. Long reception distance.
10. High sensitivity.

■ Application：

1. Optical switch
2. Light detecting portion of remote control
   - AV instruments such as Audio, TV, VCR, CD, MD, etc.
   - Home appliances such as Air-conditioner, Fan , etc.
   - The other equipments with wireless remote control.
   - CATV set top boxes
   - Multi-media Equipment

■ Absolute maximum ratings：

(Ta=25℃)

Parameter	Symbol	Ratings	Unit	Notice
Supply Voltage	Vcc	0~6	V	
Operating Temperature	Topr	-30～+85	℃	
Storage Temperature	Tstg	-40～+85	℃	
Soldering Temperature	Tsol	260	℃	4mm from mold body less than 5 seconds

■ Electro Optical Characteristics：

(Ta=25℃)

Parameter	Symbol	MIN	TYP	MAX	Unit	Condition
Supply Voltage	Vcc	4.5	5	5.5	V	DC voltage
Supply Current	Icc	-	-	3	mA	No signal input
Peak Wavelength	λ p	-	940	-	nm	
Transmission Distance	L_0	10	-	-	m	At the ray axis *1
	L_{45}	5	-			
Half Angle (Horizontal)	θ h	-	45	-	deg	
Half Angle (Vertical)	θ v	-	35	-	deg	
High Level Pulse Width	T_H	400	-	800	μs	At the ray axis *2
Low Level Pulse Width	T_L	400	-	800	μs	
High Level Output Voltage	V_H	4.5	-	-	V	
Low Level Output Voltage	V_L	-	0.2	0.5	V	

*1:The ray receiving surface at a vertex and relation to the ray axis in the range of ϕ= 0° and ϕ=45°.

*2:A range from 30cm to the arrival distance. Average value of 50 pulses.

■ TEST METHOD：

The specified electro-optical characteristics is satisfied under the following Conditions at the controllable distance.

①Measurement place

A place that is nothing of extreme light reflected in the room.

②External light

Project the light of ordinary white fluorescent lamps which are not high Frequency lamps and must be less then 10 Lux at the module surface. (Ee≦10Lux)

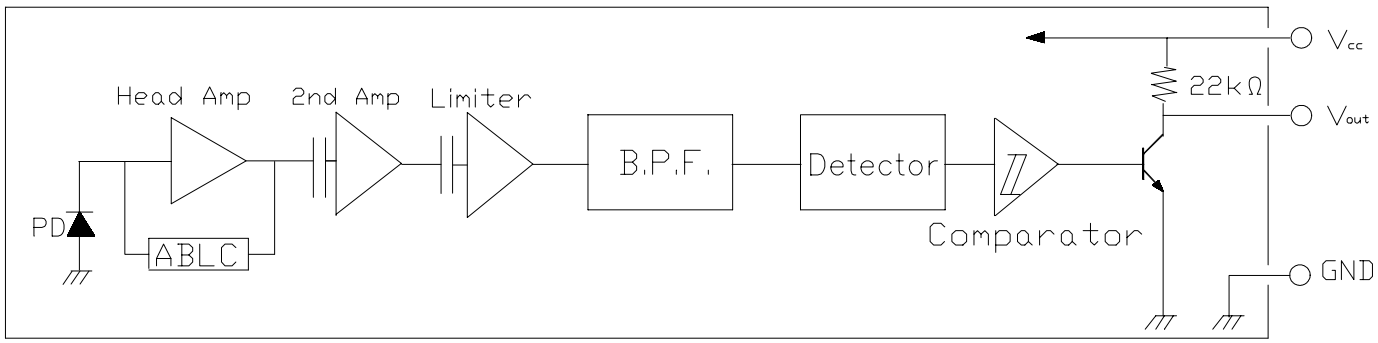
③Standard transmitter

A transmitter whose output is so adjusted as to **Vo=400mVp-p** and the output Wave form shown in Fig.-1.According to the measurement method shown in Fig.-2 the standard transmitter is specified.
However , the infrared photodiode to be used for the transmitter should be λp=940nm,Δλ=50nm. Also, photodiode is used of PD438B (V_R=5V).
(Standard light / Light source temperature 2856°K).

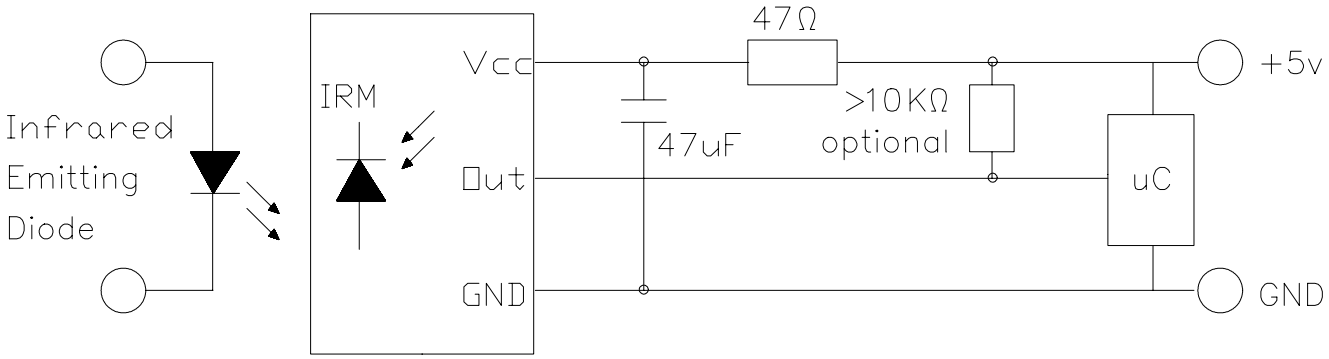
④Measuring system

According to the measuring system shown in Fig.-3

■ Block Diagram：

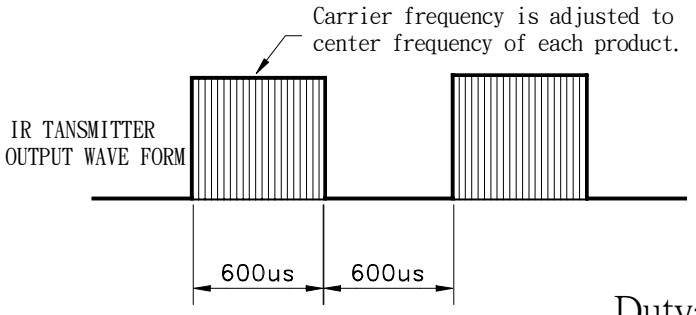


■ Application Circuit：



RC Filter should be connected closely between Vcc pin and GND pin.

Fig.-1 Transmitter Wave Form



Duty=0.5

D.U.T output Pulse

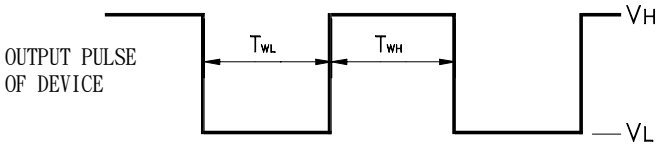


Fig.-2 Measuring Method

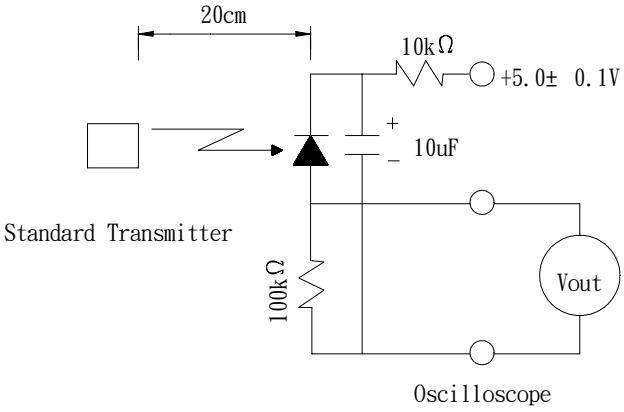
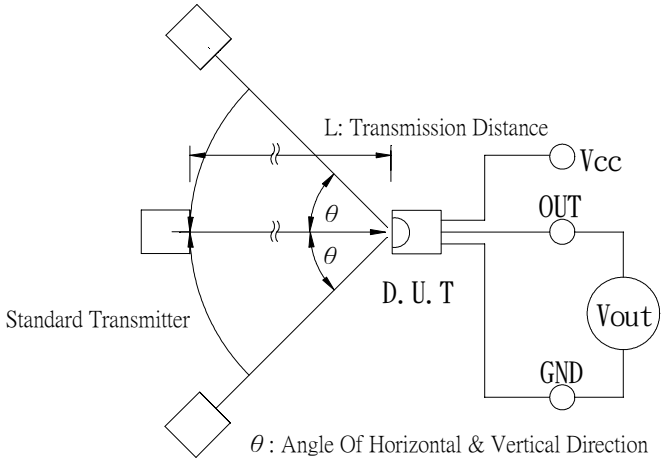


Fig.-3 Measuring System



TYPICAL ELECTRICAL/OPTICAL/CHARACTERISTICS CURVES

Fig.-4 Relative Spectral Sensitivity vs. Wavelength

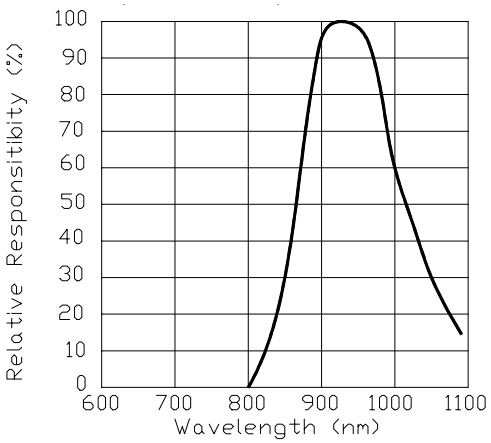


Fig.-5 Relative Transmission Distance vs. Direction

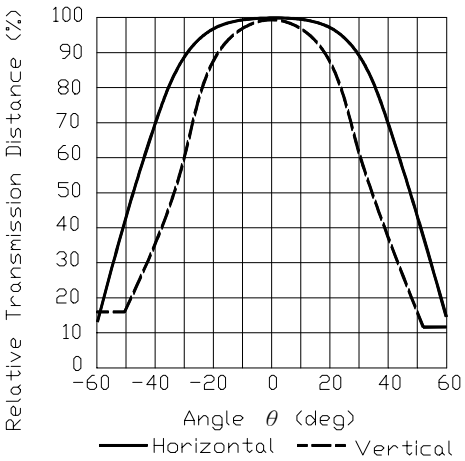


Fig.-6 Output Pulse Length vs. Arrival Distance

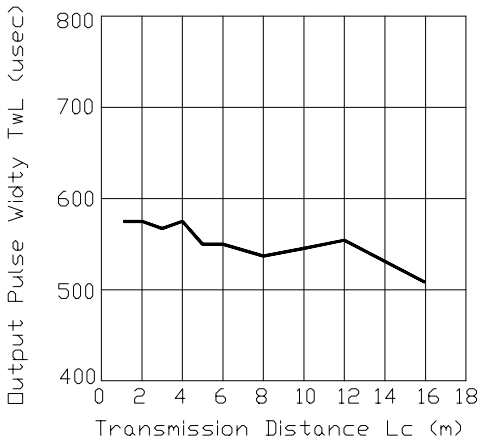


Fig.-7 Arrival Distance vs. Supply Voltage

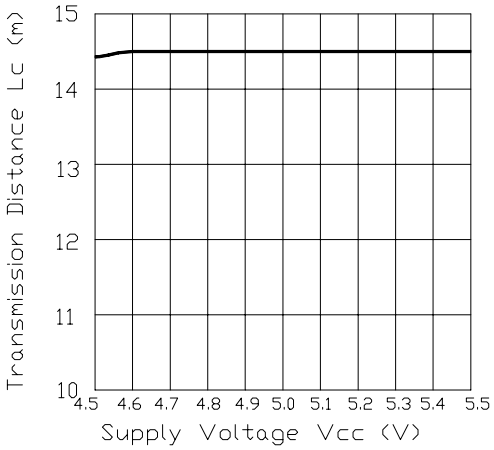


Fig.-8 Relative Transmission Distance vs. Center Carrier Frequency

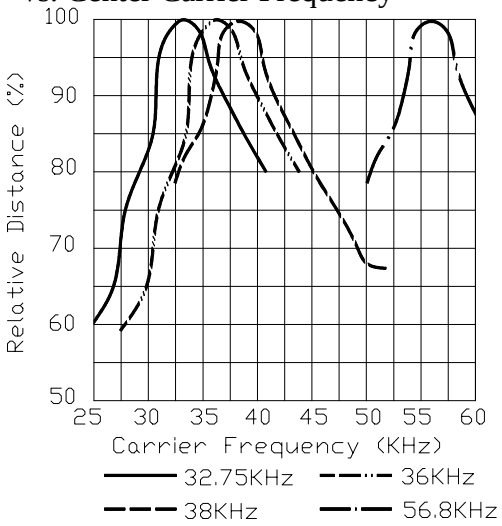
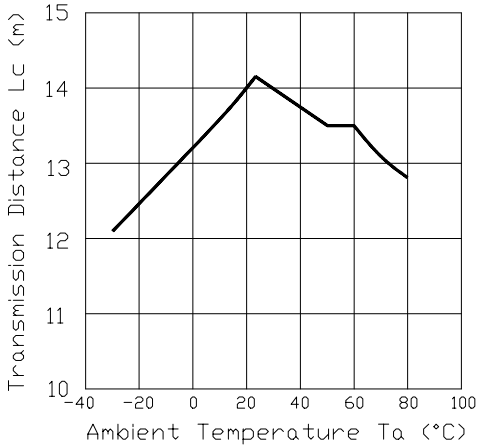


Fig.-9 Arrival Distance vs. Ambient Temperature



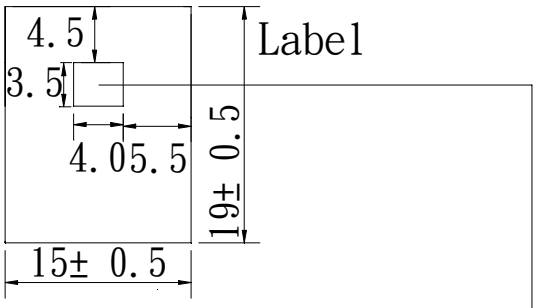
■ Reliability test item and condition：

The reliability of products shall be satisfied with items listed below.
Confidence level: 90%
LTPD: 10%

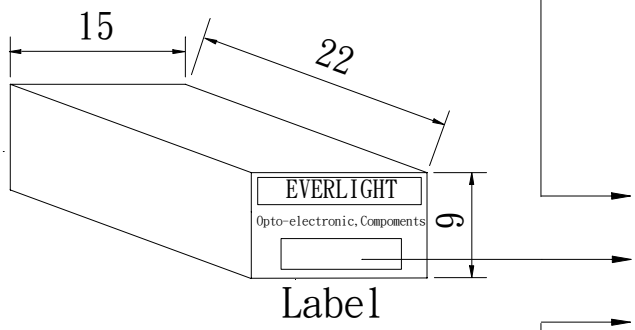
Test Items	Test Conditions	Failure Judgement Criteria	~~Samples(n)~~ Defective(c)
Operation life	Vcc=5V,Ta:25℃ 1000hrs	$L_0 \leqq$ Lx 0.8 $L_{45} \leqq$ Lx 0.8 L: Lower specification limit	n=22,c=0
Temperature cycle	1 cycle -40℃ to +85℃ (30min) 5min (30min) 50 cycle test		n=22,c=0
Thermal shock	-10℃ to +100℃ (5min) (10sec) (5min) 50 cycle test		n=22,c=0
High temperature storage	Temp: +85℃ 1000hrs		n=22,c=0
Low temperature	Temp: -40℃ 1000hrs		n=22,c=0
High temperature High humidity	Ta: 85℃ RH:85% 1000hrs		n=22,c=0
Solder heat	Temp: 260± 5℃ 5sec 4mm Form the bottom of the package.		n=22,c=0
Solderability	Temp: 230± 5℃ 5sec 4mm Form the bottom of the package.	More than 90% of Lead to be covered by soldering	n=22,c=0

Packing Specifications

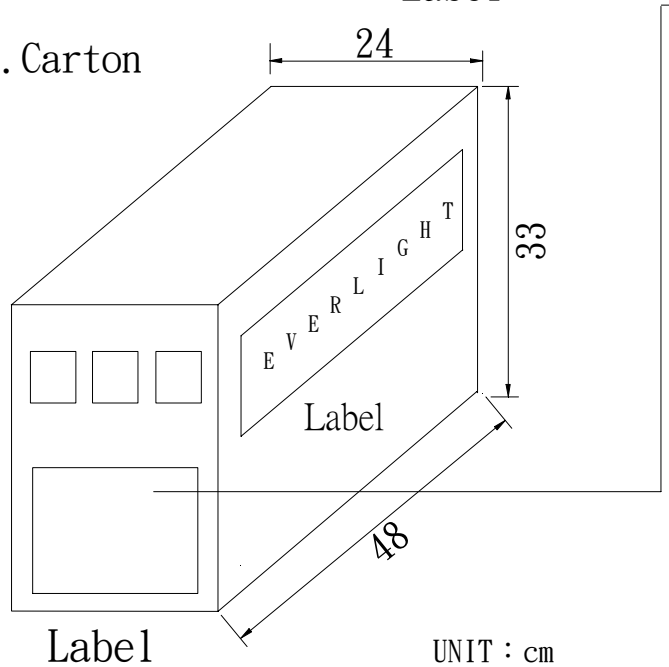
1. Bag



2. Box



3. Carton



UNIT：cm

CPN：Customer's Production Number
P/N：Production Number
QTY：Packing Quantity
CAT：Ranks
HUE：Peak Wavelength
REF：Reference
LOT NO：Lot Number
MADE IN TAIWAN：Production place

Packing Quantity Specification

1. 250 Pcs/1Bag，6 Bags/1Box
2. 10 Boxes/1Carton