

# BOLLARD LP

DARK SKY-COMPLIANT LED ARCHITECTURAL BOLLARD



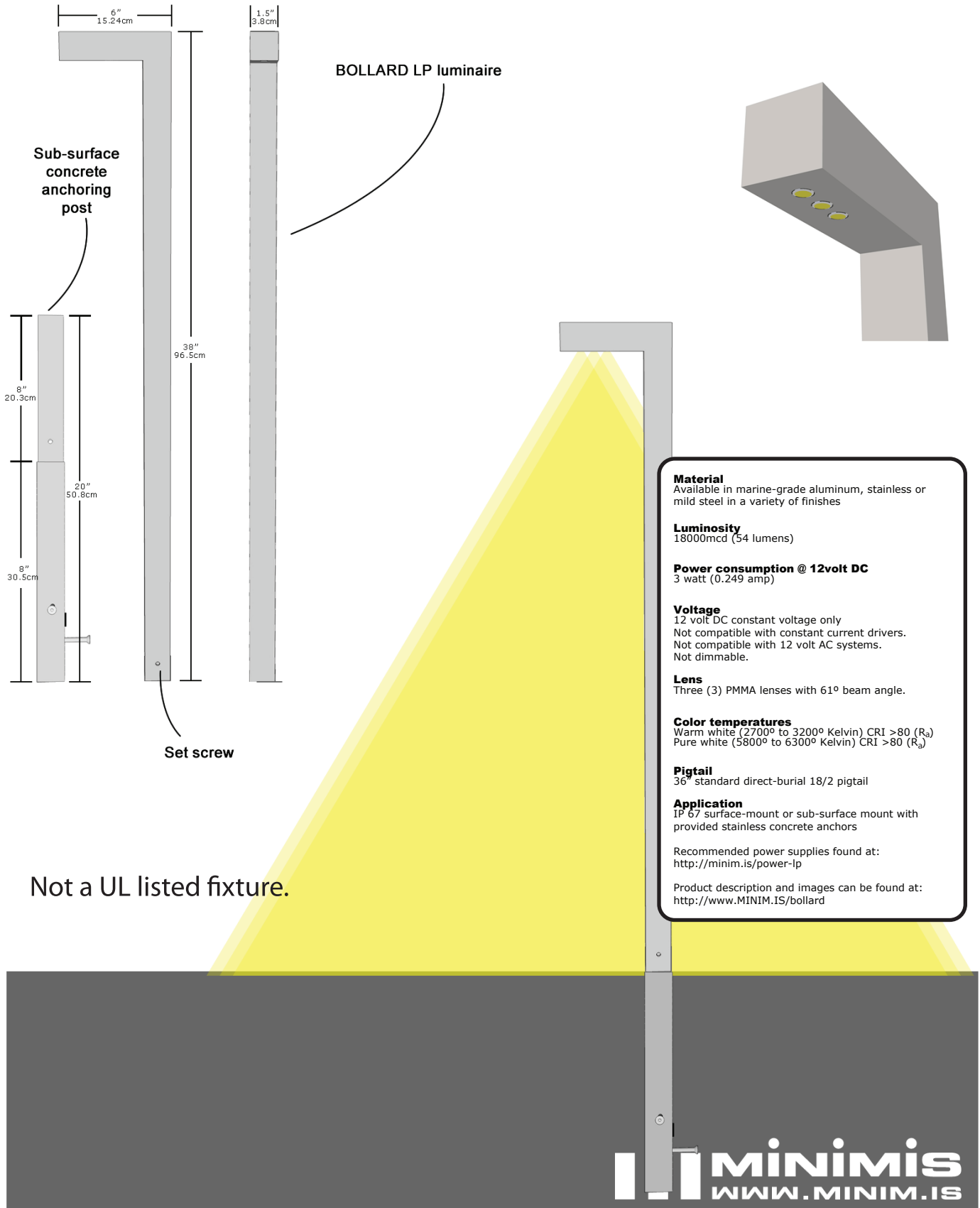
Patent pending.

**SPECIFICATIONS**  
PER-DIODE ELECTRICAL AND OPTICAL CHARACTERISTICS

**ii minimis**  
WWW.MINIM.IS

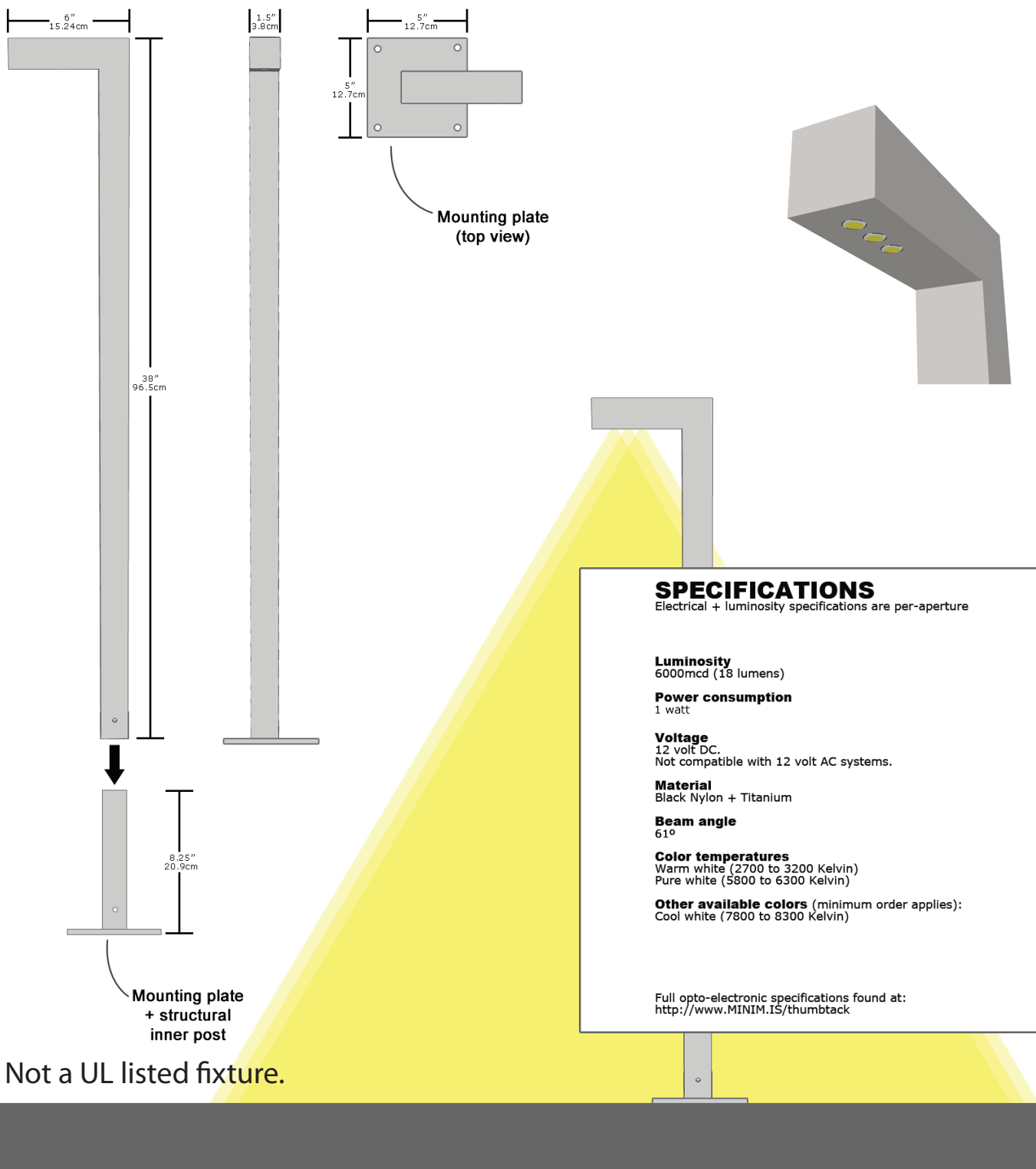
# BOLLARD LP - BOLP90DNXX-XX

DARK SKY-COMPLIANT LED ARCHITECTURAL BOLLARD - 90° HEAD - SUB-SURFACE CONCRETE ANCHORING



# BOLLARD LP - BOLP90UPXX-XX

DARK SKY-COMPLIANT LED ARCHITECTURAL BOLLARD - 90° HEAD - SURFACE MOUNT



Not a UL listed fixture.



## WARM WHITE

### BOLLARD LP - BOLPXXWW-XX - WARM WHITE

absolute maximum ratings: (TA=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Power Dissipation	Pd	1.05	W
Continuous Forward Current	IF	83	mA
Peak Forward Current (1/10th duty cycle, 0.1ms pulse width)	IFP	150	mA
Reverse Voltage	VR	15	V
Operating Temperature	Ta	-20 to 80	°C
Storage Temperature	Tstg	-40 to 85	°C

### Optoelectric characteristics

PARAMETER	SYMBOL	MAX	TYPICAL	UNIT
View Angle of Half Power	2θ <sub>1/2</sub>		60	Degree
Forward Voltage	V <sub>F</sub>	15.0	12	V
Dominant Wavelength	λ <sub>D</sub>		Warm White	nm
Luminous Intensity	I <sub>v</sub>		6000	mcd

## PURE WHITE

### BOLLARD LP - BOLPXXPW-XX - PURE WHITE

absolute maximum ratings: (TA=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Power Dissipation	Pd	1.05	W
Continuous Forward Current	IF	83	mA
Peak Forward Current (1/10th duty cycle, 0.1ms pulse width)	IFP	150	mA
Reverse Voltage	VR	15	V
Operating Temperature	Ta	-20 to 80	°C
Storage Temperature	Tstg	-40 to 85	°C

### Optoelectric characteristics

PARAMETER	SYMBOL	MAX	TYPICAL	UNIT
View Angle of Half Power	2θ <sub>1/2</sub>		60	Degree
Forward Voltage	V <sub>F</sub>	15.0	12	V
Dominant Wavelength	λ <sub>D</sub>		Pure White	nm
Luminous Intensity	I <sub>v</sub>		6000	mcd

## ● Electrical and Optical Characteristics - Per-aperture (Ta=25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Forward Voltage	$V_F$	$I_F=83mA$	9.0	12	15	V
Luminous Intensity	$I_V$	$I_F=83mA$	5000	6000	7000	mcd
Reverse Current	$I_R$	$V_R=12V$			10	$\mu A$
Dominant Wavelength	$\lambda_D$	$I_F=83mA$		Warm White		nm
Color Temperature	CCT	$I_F=83mA$	2800	range	3200	K
Viewing Angle	$2\theta_{1/2}$	$I_F=83mA$		61		deg

## ● Typical Electro-Optical Characteristics Curves (subject to change)

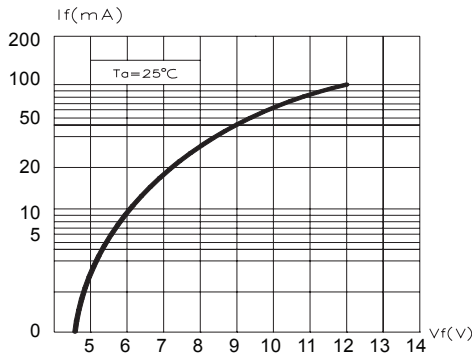


Fig.1 Forward Current vs. Forward Voltage

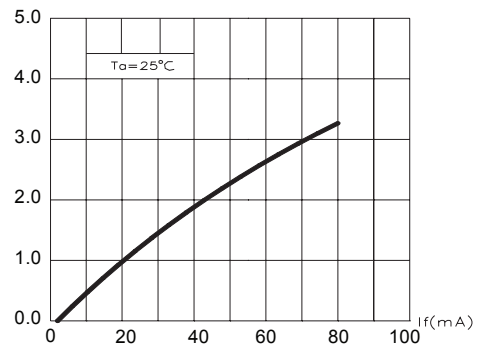


Fig.2 Relative Luminous Intensity vs. Forward Current

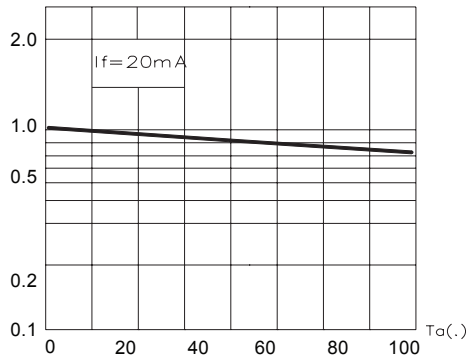


Fig.3 Relative Luminous Intensity vs. Ambient Temperature

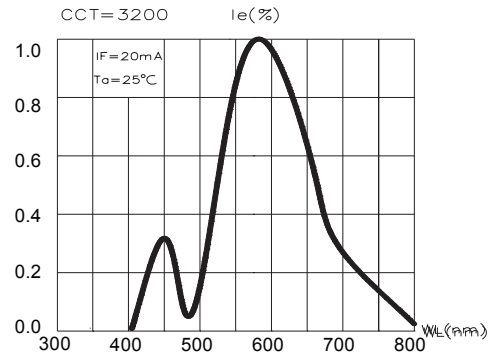


Fig.4 Intensity Vs. Wavelength.

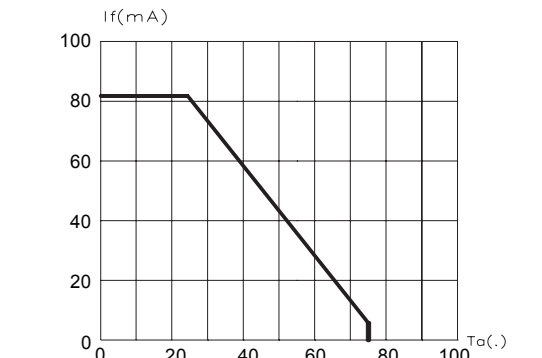


Fig.5 Maximum Forward Current vs. Ambient Temperature

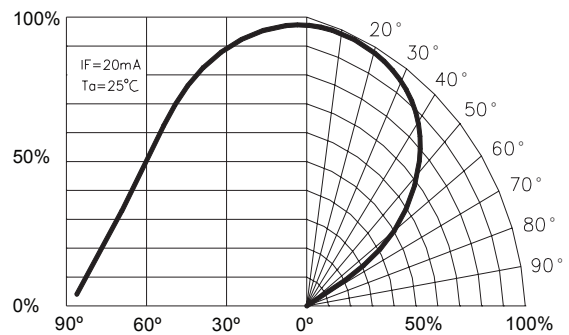


Fig.6 Relative Luminous Intensity vs. Radiation Angle

● **Electrical and Optical Characteristics - per-aperture (Ta=25°C)**

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Forward Voltage	$V_F$	$I_F=83mA$	9.0	12	15	V
Luminous Intensity	$I_v$	$I_F=83mA$	5000	6000	7000	mcd
Reverse Current	$I_R$	$V_R=12V$	-		10	$\mu A$
Dominant Wavelength	$\lambda_D$	$I_F=83mA$		Pure White		nm
Color Temperature	CCT	$I_F=83mA$	5800	range	6300	K
Beam Angle	$2\theta_{1/2}$	$I_F=83mA$		61		deg

● **Typical Electro-Optical Characteristics Curves** (subject to change)

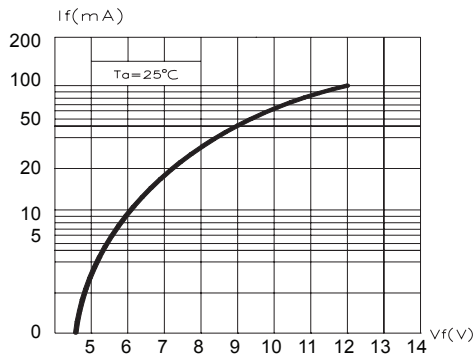


Fig.1 Forward Current vs. Forward Voltage

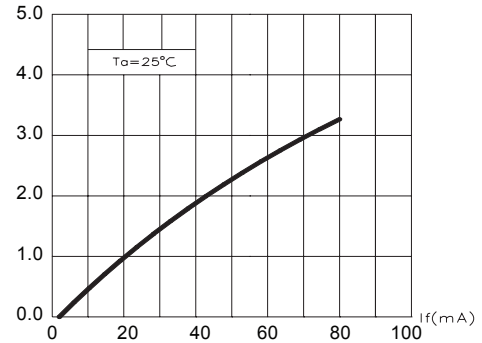


Fig.2 Relative Luminous Intensity vs. Forward Current

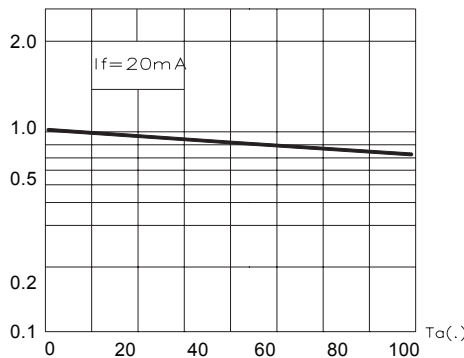


Fig.3 Relative Luminous Intensity vs. Ambient Temperature

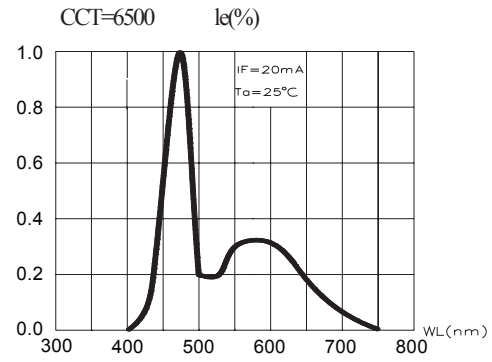


Fig.4 Intensity vs. Wavelength.

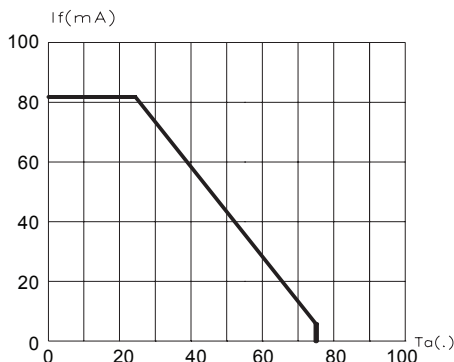


Fig.5 Maximum Forward Current vs. Ambient Temperature

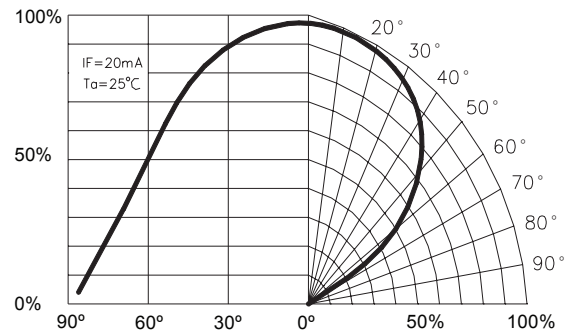


Fig.6 Relative Luminous Intensity vs. Radiation Angle