

# Infrared Light Emitting Diode

## OP205CL



### Features:

- High power GaAlAs
- Narrow beam angle—near parallel beam
- 875 nm wavelength
- TO-46 package
- Wide operating temperature range



### Description:

The **OP205CL** is a high efficiency GaAlAs infrared LED mounted in a TO-46 metal can package. The device features a special dome lens that allows a very narrow beam angle. The result is a near parallel beam that is useful in applications that requires a collimated light source with a uniform intensity pattern.

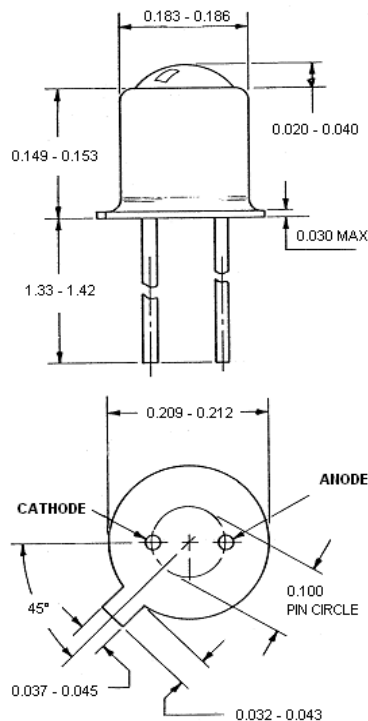
*OP205CL LED is mechanically and spectrally matched to OP800 series phototransistors.*

### Applications:

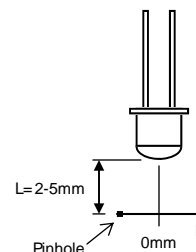
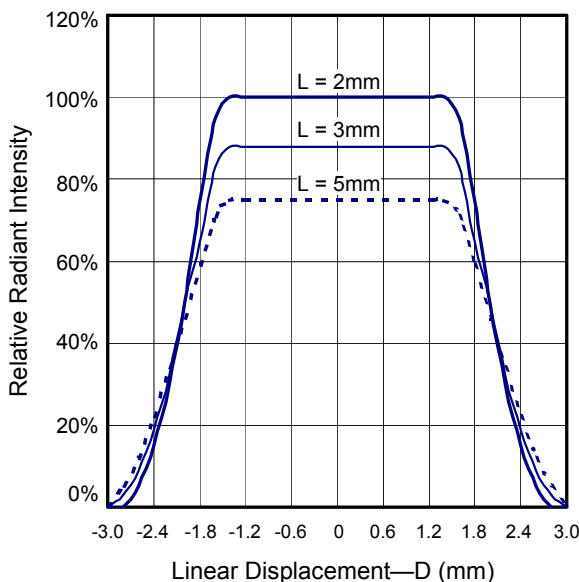
- Optical encoders
- Long distance sensing
- Triangulation sensors

### Ordering Information

Part Number	LED Peak Wavelength	Total Beam Angle	Lead Length
OP205CL	875 nm	10°	34mm



Relative Radiant Intensity vs. Linear Displacement



RoHS

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

### Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

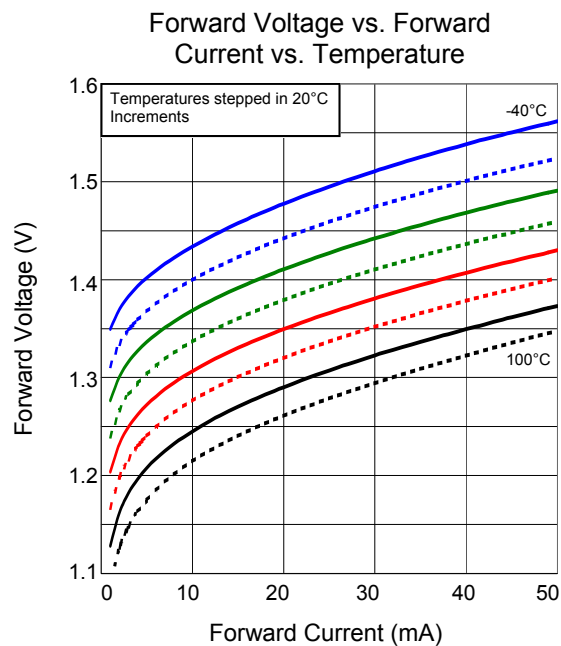
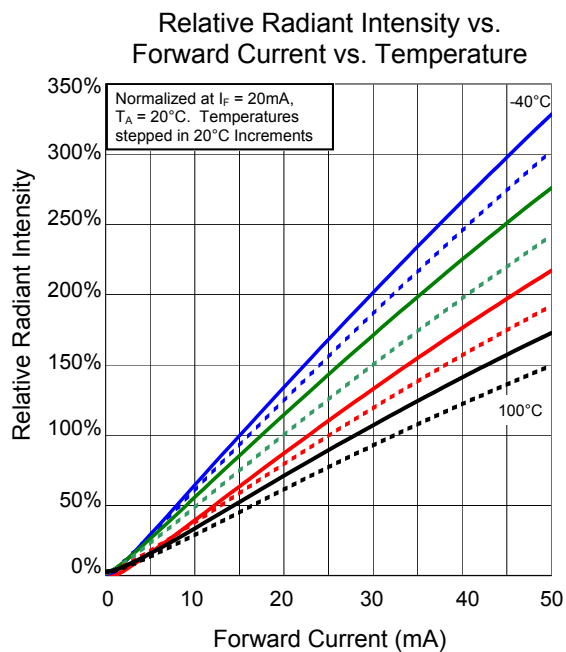
Storage Temperature Range	-40° C to +125° C
Operating Temperature Range	-40° C to +100° C
Lead Soldering Temperature	260° C <sup>(1)</sup>
Reverse Voltage	3.0 V
Continuous Forward Current	50 mA
Power Dissipation	160 mW <sup>(2)</sup>

### Electrical Characteristics $(T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
$P_O$	Radiant Intensity	8.5	12.0	-	mW	$I_F = 50\text{mA}$ <sup>(3)</sup>
$V_F$	Forward Voltage	-	-	2.0	V	$I_F = 50\text{mA}$
$I_R$	Reverse Current	-	-	10	$\mu\text{A}$	$V_R = 3.0\text{V}$
$\lambda_P$	Peak Emission Wavelength	-	875	-	nm	$I_F = 20\text{mA}$
$\Theta_{HP}$	Total Emission Angle at Half Power Points	-	6	10	Deg.	$I_F = 20\text{mA}$

#### Notes:

- Solder time less than 5 seconds at temperature extreme.
- De-rate linearly at 2.17 mW/° C above 25° C.
- Total Optical Power ( $P_O$ ) is measured by OPTeK Technology equipment.



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