

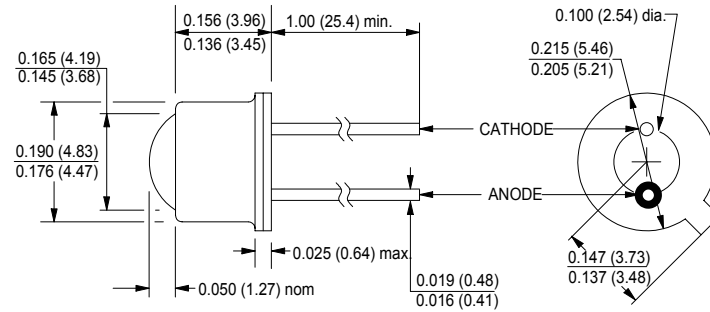
# CLE135, CLE130E, CLE130W

940nm High Efficiency  
GaAs/AlGaAs IREDS

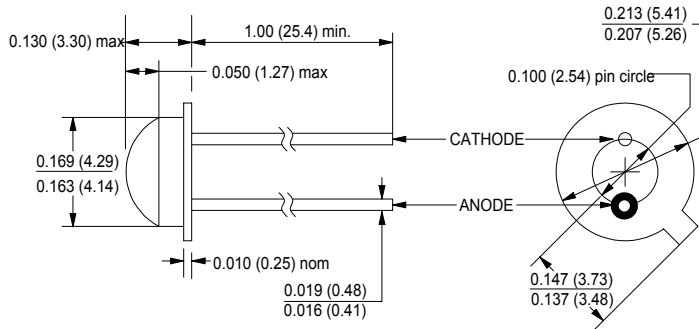
## UPGRADED SERIES



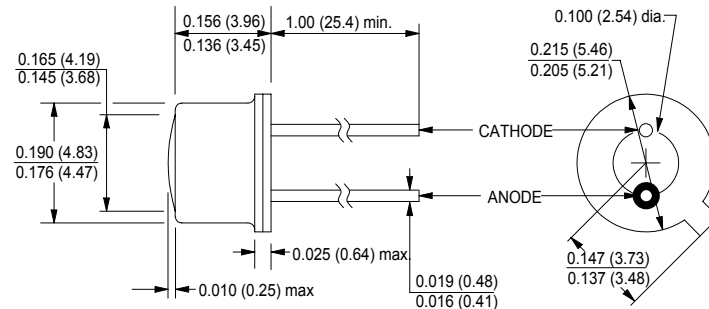
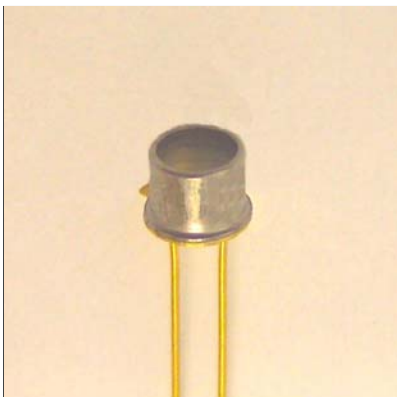
July, 2005



**CLE135**



**CLE130E**



**CLE130W**

ALL DIMENSIONS ARE IN  
INCHES (MILLIMETERS)

Clairex reserves the right to make changes at any time to improve design and to provide the best possible product.

REVISED 4/15/06

Clairex Technologies, Inc.  
Phone: 972-265-4900

1301 East Plano Parkway  
Fax: 972-265-4949

Plano, Texas 75074-8524  
www.clairex.com

# CLE135, CLE130E, CLE130W

## 940nm High Efficiency GaAs/AlGaAs IREDS



### features

- higher power output
- cathode connected to case
- TO-46 header with three lens options
- different package styles provide flexible design options

### description

The original Clairex CLE130 series has been upgraded. The new series features current state of the art GaAs/AlGaAs technology for increased quantum efficiency. The chip substrate is N type material resulting in the case being common to the cathode. The original configuration can still be supplied as a special order. Three different lens options are offered. Contact Clairex for other electrical and package options.

### absolute maximum ratings ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

storage temperature	
CLE135 and CLE130W .....	-65°C to +150°C
CLE130E .....	-40°C to +125°C
operating temperature	
CLE135 and CLE130W .....	-65°C to +125°C
CLE130E .....	-40°C to +100°C
lead soldering temperature <sup>(1)</sup> .....	260°C
continuous forward current <sup>(2)</sup> .....	100mA
peak forward current (1.0ms pulse width, 10% duty cycle).....	1A
reverse voltage .....	5V
continuous power dissipation <sup>(3)</sup> .....	200mW

### notes:

1. 0.06" (1.5mm) from the header for 5 seconds maximum.
2. Derate linearly 0.80mA/°C from 25°C free air temperature to  $T_A = +125^\circ\text{C}$ .
3. Derate linearly 1.60mW/°C from 25°C free air temperature to  $T_A = +125^\circ\text{C}$ .

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

symbol	parameter	min	typ	max	units	test conditions
<b>CLE130 Series</b>						
$V_F$	Forward voltage	-	1.5	1.8	V	$I_F = 100\text{mA}$
$I_R$	Reverse current	-	-	10	$\mu\text{A}$	$V_R = 3\text{V}$
$\lambda_p$	Peak wavelength	-	940	-	nm	$I_F = 100\text{mA}$
BW	Spectral bandwidth	-	50	-	nm	$I_F = 20\text{mA}$
$t_r, t_f$	Output rise and fall time	-	700	-	ns	$I_F = 100\text{mA}$
<b>CLE130E</b>						
$P_O$	Total output power	-	12.5	-	mW	$I_F = 100\text{mA}$
$P_O$	Total output power	2.0	2.5	-	mW	$I_F = 20\text{mA}$
$\theta_{HP}$	Emission angle at half power points	-	80	-	deg.	$I_F = 20\text{mA}$
<b>CLE130W</b>						
$P_O$	Total output power	-	10	-	mW	$I_F = 100\text{mA}$
$P_O$	Total output power	1.5	2.0	-	mW	$I_F = 20\text{mA}$
$\theta_{HP}$	Emission angle at half power points	-	70	-	deg.	$I_F = 20\text{mA}$
<b>CLE135</b>						
$P_O$	Total output power	-	10	-	mW	$I_F = 100\text{mA}$
$E_e$	Irradiance <sup>(4)</sup>	-	2.0	-	$\text{mW}/\text{cm}^2$	$I_F = 100\text{mA}$
$E_e$	Irradiance <sup>(4)</sup>	0.4	0.5	-	$\text{mW}/\text{cm}^2$	$I_F = 20\text{mA}$
$\theta_{HP}$	Emission angle at half power points	-	22	-	deg.	$I_F = 20\text{mA}$

**note:** 4.  $E_e$  is a measure of irradiance (power/unit area) within a 0.444" (1.128cm) diameter area, centered on the mechanical axis of the device and spaced 2.54" (6.45cm) from the lens side of the tab. This is geometrically equivalent to a 10° cone.

Clairex reserves the right to make changes at any time to improve design and to provide the best possible product.