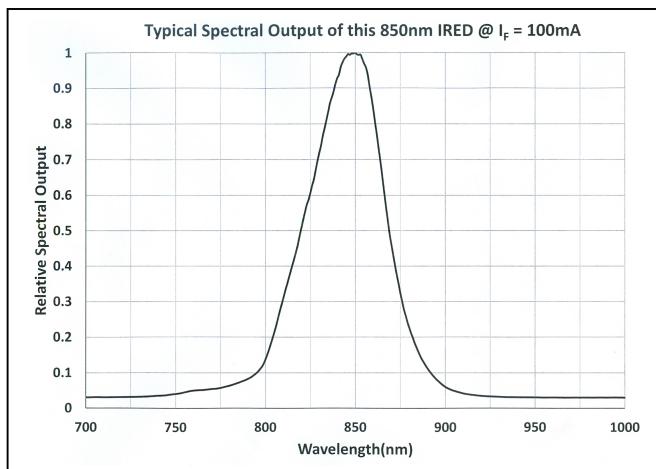
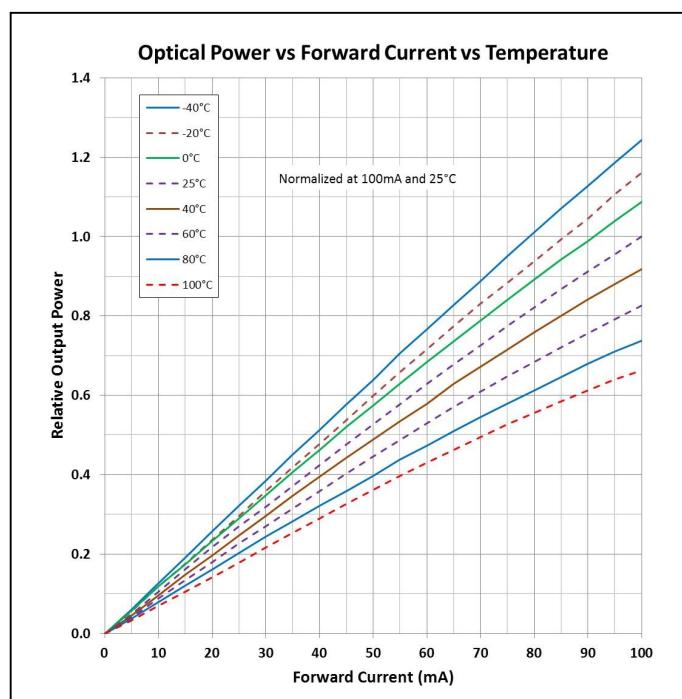
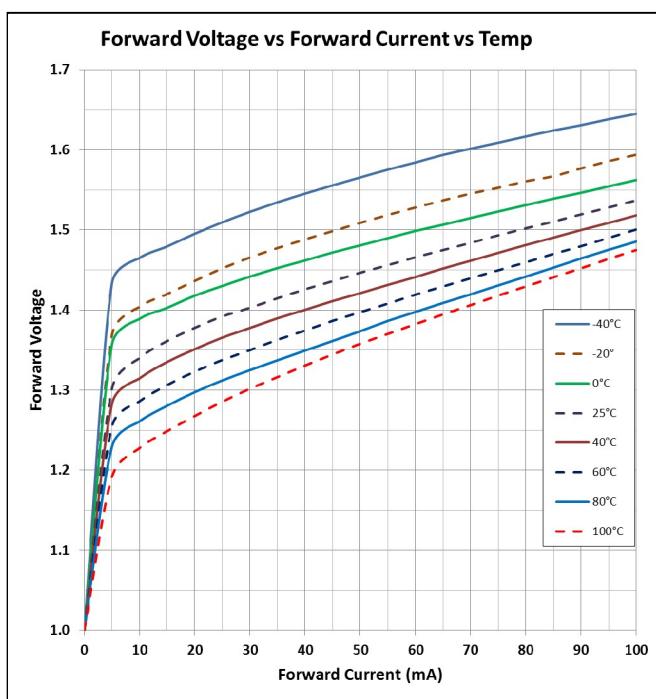


# CLE330W

## High-Efficiency AlGaAs IRED

**CLAIRESX®**  
SEMICONDUCTOR

12-3301A



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

Clairex Technologies, Inc  
dba Clairex Semiconductor

1000 Jupiter Road, Ste. 100  
Phone: 972-265-4900

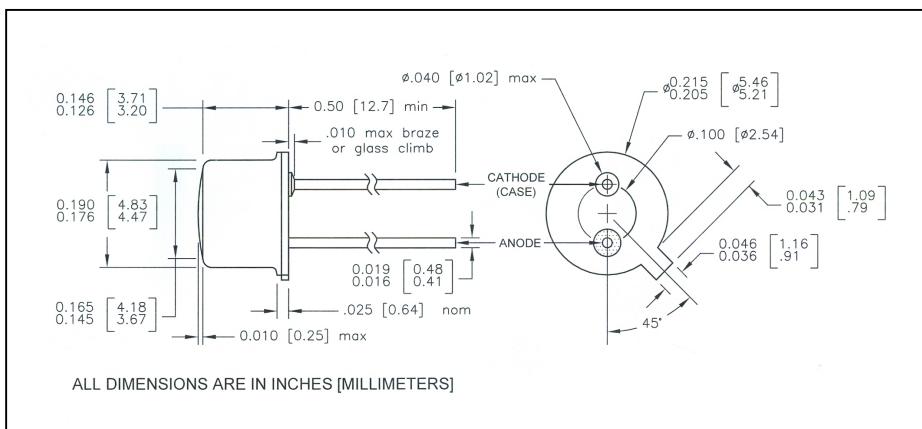
Plano, Texas 75074-3727  
[www.clairex.com](http://www.clairex.com)

# CLE330W

## High Efficiency AlGaAs IRED

**CLAIRESX®**  
SEMICONDUCTOR

12-3301A



### Features

- wide emission angle
- excellent heat dissipation
- TO-46 header with flat lens can
- high power output
- 850 nm peak wavelength

### Description

The CLE330W is an advanced, high-efficiency double hetero-junction, high speed AlGaAs infrared emitting diode. Output power exceeds standard AlGaAs Si-doped amphoteric-junction emitters by 50%. Degradation is less at 150°C than Si-doped amphoteric-junction emitters at 100°C. The wide emission angle provides relatively even illumination over a large area. For additional information, contact Clairex.

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

storage temperature .....	-65°C to +150°C
operating temperature .....	-65°C to +150°C
junction temperature <sup>(1)</sup> .....	+165°C
lead soldering temperature <sup>(2)</sup> .....	240°C
reverse voltage .....	3 V
maximum continuous forward current <sup>(3)</sup> .....	100 mA
peak forward current <sup>(4)</sup> .....	1 A
maximum power dissipation <sup>(5)</sup> .....	200 mW

### notes:

1. Maximum junction operating temperature.
2. 0.06 inch (1.5mm) from the header for 5 seconds maximum. Maximum temperature can be 260°C if wave soldering.
3. Derate linearly 0.72 mA/°C from 25°C free air temperature to  $T_A = +150^\circ\text{C}$ .
4. Pulsed conditions only. Maximum pulse width is 2.0  $\mu\text{s}$  at 2% duty cycle. Use good judgment when operating this device under these conditions. Thermal transients exceeding these restrictions can cause irreversible damage.
5. Derate linearly 1.44 mW/°C from 25°C free air temperature to  $T_A = +150^\circ\text{C}$ .
6.  $\emptyset_e$  is a measurement of total radiant flux within a 0.444 inch [1.128 cm] detector that is centered on the mechanical axis of the device at a distance of 0.267 inch [0.68 cm] from the lens side of the tab to the active area of the detector.

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

symb	parameter	min	typ	max	units	test conditions
$\emptyset_e$	Radiant flux <sup>(6)</sup>	15	20	-	mW	$I_F = 100 \text{ mA}$
$I_R$	Reverse current	-	-	10	$\mu\text{A}$	$V_R = 3 \text{ V}$
$V_F$	Forward voltage	-	1.7	1.9	V	$I_F = 100 \text{ mA}$
$\lambda_p$	Peak emission wavelength	-	850	-	nm	$I_F = 100 \text{ mA}$
BW	Spectral bandwidth at half power points	-	60	-	nm	$I_F = 100 \text{ mA}$
$\theta_{HP}$	Emission angle at half power points	-	70	-	deg.	$I_F = 100 \text{ mA}$
$t_r$	Output rise time ( $f = 1\text{kHz}$ , dc = 50%)	-	20	-	ns	$I_{F(PK)} = 20 \text{ mA}$
$t_f$	Output fall time ( $f = 1\text{kHz}$ , dc = 50%)	-	40	-	ns	$I_{F(PK)} = 20 \text{ mA}$

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