

# Dynalite Infrared Collimated Light Source

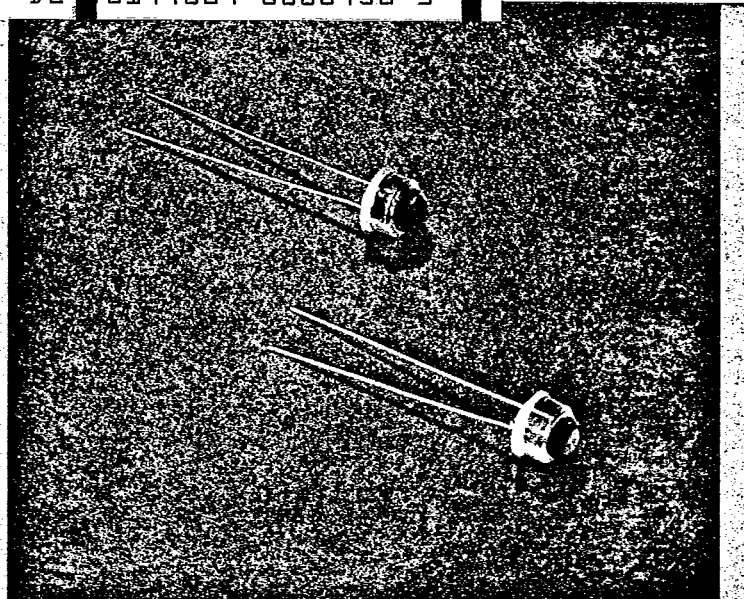
## General Description

The DYNALITE was specifically designed for applications where a high degree of collimation is required, such as in optical encoders.

The DYNALITE Collimated Light Source is an infrared light emitting diode in a custom package. The unit consists of a TO-46 header with a molded lens cap, designed to yield a collimated light beam. The use of the DYNALITE gives a spectacular improvement over the use of normal TO-46 housed emitters in reducing the influence of disk-to-reticle distance variations. The improvement in wave form, ripple, duty cycle and resolutions give a much improved yield of the final linear or optical encoder assembly. The high-intensity spot is large enough to accommodate a six-cell silicon array for dual push-pull readout, index and feedback.

## Features:

- Precision lens for consistent light pattern.
- High output power.
- Wavelength matched with silicon sensors.



## Absolute Maximum Ratings @ 25°C

|                                |                |
|--------------------------------|----------------|
| Power dissipation:             | 130mW          |
| (Derate 1.6mW/°C above 25°C)   |                |
| Storage temperatures:          | -55°C to +85°C |
| Operating temperatures:        | -55°C to +85°C |
| Reverse voltage:               | 2.0 V max      |
| Soldering temperature          |                |
| 1/16" from base for 10 seconds | 240°C          |

## Electrical Characteristics @ 25°C

| SYMBOL         | PARAMETER                           | MIN. | TYP. | MAX. | UNITS | TEST COND.                  |
|----------------|-------------------------------------|------|------|------|-------|-----------------------------|
| P <sub>O</sub> | Radiant Power                       |      |      |      |       |                             |
|                | 10-53-0032-1                        | 1    | 1.5  | 1.99 | mW    | I <sub>F</sub> = 50 mA      |
|                | 10-53-0032-2                        | 2    | 2.5  | 2.99 | mW    | I <sub>F</sub> = 50 mA      |
|                | 10-53-0032-3                        | 3    | 3.5  | 3.99 | mW    | I <sub>F</sub> = 50 mA      |
|                | 10-53-0032-4                        | 4    | 4.5  | 4.99 | mW    | I <sub>F</sub> = 50 mA      |
|                | 10-53-0032-5                        | 5    | 5.5  | 5.99 | mW    | I <sub>F</sub> = 50 mA      |
| V <sub>F</sub> | Static Forward Voltage              |      | 1.5  | 1.75 | V     | I <sub>F</sub> = 100 mA     |
|                | Wavelength @ Peak Emission (Note 1) |      | 940  |      | nm    | I <sub>F</sub> = 100 mA     |
| B              | Spectral Band width (@3dB)          |      | 60   |      | nm    | I <sub>F</sub> = 100 mA     |
| I <sub>r</sub> | Reverse Leakage Current             |      |      | 100  | μA    | V <sub>r</sub> = 2V         |
| t <sub>r</sub> | Rise Time (radiation)               |      | 600  |      | nS    | I <sub>F</sub> Peak = 20 mA |
| t <sub>f</sub> | Fall Time (radiation)               |      | 300  |      | nS    |                             |

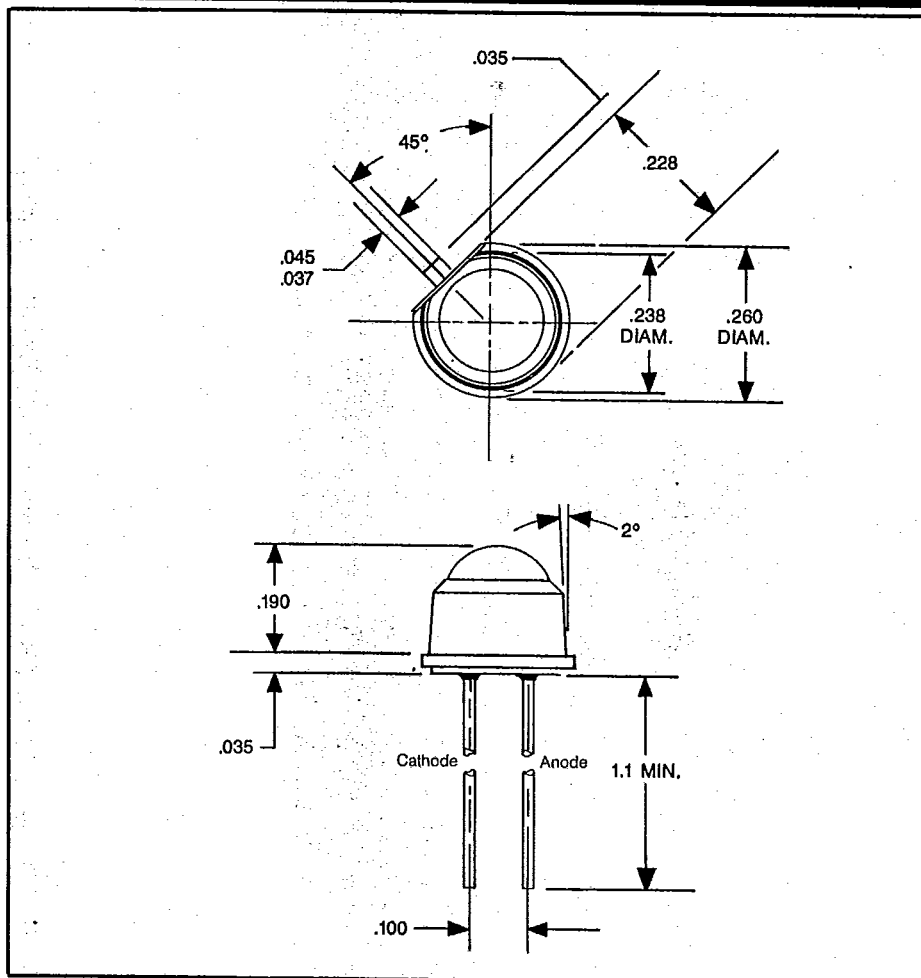
## Optical Characteristics

|                                      | MIN. | TYP.  | MAX. | UNITS   | TEST COND.        |
|--------------------------------------|------|-------|------|---------|-------------------|
| Beam Divergence Angle                |      | 5°    |      | Degrees |                   |
| Spot Diameter                        |      | .180" |      | Inch    | @ .250" from lens |
| Uniformity over A.150" Diameter spot |      | 10    |      | %       | @ .250" from lens |

NOTE 1: Applies to -1 through -4. For -5λ peak is 880 nm.

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### PHYSICAL DIMENSIONS



Also available are the following quality products:

- Optical Switches
- Optical Encoders, Incremental and Linear.
- Discrete LED's, Phototransistors.
- Reflective Optical Transducers.