



Adjustable Focus Laser Diode Modules

Fig. 1 — Adjustable Focus Laser Module 28 AWG

Threaded adjustable lens

| | 10.4mm | 6.4mm |
|---------------------------|--------------|---------|
| Po: | 5mW | |
| Class: | IIIa | |
| Supply Voltage, Up to 9V: | 3 Continuous | |
| Dimension A: | 10.44mm | 6.4mm |
| Dimension B: | 17.8mm | 17.25mm |

Fig. 2 — Adjustable Output Laser Module

Threaded adjustable lens

Po: 1 - 4.8mW
Recommended Pot = approx. 150K - 500K

Fig. 3 — Visible Laser Diode

Po: 5mW
Class IIIa
Wide Spectrum Range, Standard Pinout

Fig. 4 — 6.4mm Laser Diode Housing Kit

Includes: Backcap, barrel, lens housing and lens

Fig. 5 — 10.4mm Laser Diode Housing Kit

Includes: Housing/Heatsink, 5.6mm - 9mm Adapter, Adjustable Focus Lens

| | Dimensions | |
|--------|------------|-----|
| | W | L |
| 10.4mm | 5.4 | 7.8 |
| 6.4mm | 9.0 | 5.0 |

Fig. 6 — APC Laser Power Supply

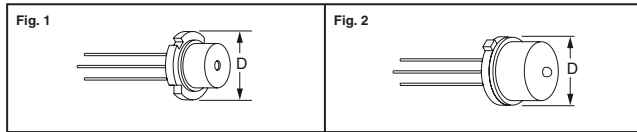
Adjustable Output Power via On-Board Potentiometer

| Fig. | Description | Wave-length (nm) | Iop (mA) | Size (mm) | Digi-Key Part No. | Price Each | U.S. Lasers Part No. |
|------|-----------------------------------|------------------|----------|--------------|-------------------|------------|----------------------|
| 1 | Visible Laser Module* | 650 | 25 - 40 | 17.8 x 10.44 | 38-1003-ND | 23.71 | M65051 |
| | | 635 | 45 - 70 | 17.8 x 10.44 | 38-1017-ND | 55.18 | M63551 |
| | | 780 | 45 - 70 | 17.8 x 10.44 | 38-1018-ND | 40.66 | M78051 |
| 1 | Infrared Laser Module* | 808 | 60 - 70 | 17.8 x 10.44 | 38-1005-ND | 46.46 | M80851 |
| | | 850 | 45 - 65 | 17.8 x 10.44 | 38-1019-ND | 49.37 | M85051 |
| | | 650 | 25 - 40 | 17.25 x 6.4 | 38-1021-ND | 37.75 | MM65051 |
| 1 | Visible Laser Micro Module* | 640 | 55 - 70 | 17.25 x 6.4 | 38-1022-ND | 66.79 | MM64051 |
| | | 635 | 45 - 70 | 17.25 x 6.4 | 38-1023-ND | 69.70 | MM63551 |
| | | 780 | 45 - 70 | 17.25 x 6.4 | 38-1024-ND | 55.18 | MM78051 |
| 1 | Infrared Laser Micro Module* | 808 | 60 - 70 | 17.25 x 6.4 | 38-1025-ND | 58.08 | MM80851 |
| | | 850 | 45 - 65 | 17.25 x 6.4 | 38-1026-ND | 63.89 | MM85051 |
| | | 650 | 25 - 40 | 17.8 x 10.44 | 38-1011-ND | 40.66 | VOL65051 |
| 2 | Adj. Output Visible Laser Module* | 635 | 45 - 70 | 17.8 x 10.44 | 38-1013-ND | 84.22 | VOL63551 |
| | | 780 | 45 - 70 | 17.8 x 10.44 | 38-1014-ND | 69.70 | VOL78051 |

| Fig. | Description | Wave-length (nm) | Iop (mA) | Size (mm) | Digi-Key Part No. | Price Each | U.S. Lasers Part No. |
|------|---|--|----------|--------------|-------------------|------------|----------------------|
| 2 | Adj. Output Infrared Laser Module* | 808 | 60 - 70 | 17.8 x 10.44 | 38-1015-ND | 72.60 | VOL80851 |
| | | 850 | 45 - 65 | 17.8 x 10.44 | 38-1016-ND | 78.41 | VOL85051 |
| 3 | Visible Laser Diode | 650 | 25 - 40 | 5.6 | 38-1007-ND | 6.53 | D65051 |
| | | 635 | 45 - 70 | 5.6 | 38-1027-ND | 21.78 | D63551 |
| 3 | Infrared Laser Diode | 780 | 45 - 70 | 5.6 | 38-1028-ND | 17.42 | D78051 |
| | | 808 | 60 - 70 | 5.6 | 38-1029-ND | 20.33 | D80851 |
| | | 850 | 45 - 65 | 5.6 | 38-1030-ND | 23.23 | D85051 |
| 4 | Housing Kit, 6.4mm | | | 17.25 x 6.4 | 38-1032-ND | 14.52 | HK-6.4 |
| 5 | Housing Kit, 10.4mm | | | 17.8 x 10.44 | 38-1000-ND | 13.07 | HK-10.4 |
| 6 | Laser Driver Circuit (APC) for 10.4mm Housing | 5.6mm - 9mm Adapter, Non-threaded | | 5.4 x 7.8 | 38-1009-ND† | 10.16 | NS102-200K |
| | | Laser Driver Circuit (APC) for 6.4mm Housing | | 5.0 x 9.0 | 38-1031-ND† | 10.16 | NS102A-200K |
| | | 5.6mm - 9mm Adapter, Threaded | | | 38-1033-ND | 2.90 | AD 5.6-9MM |
| — | | | | | 38-1001-ND | 3.63 | THAD 5.6-9mm |

* Module denotes complete assembly † For use with 660, 650, 640 and 635nm diodes only

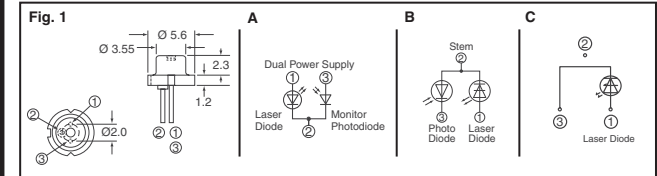
Visible and Infrared Diodes



| Wave-length λ Typ. (nm) | Output Power (mW) max. | Current Ith Iop (mA) | Oper. Voltage (V) | Operating Temp. (°C) | Dia. D (mm) | Digi-Key Part No. | Price Each | Lumex Part No. |
|---|------------------------|----------------------|-------------------|----------------------|-------------|-------------------|------------|----------------|
| Fig. 1 — Visible Laser Diodes — RoHS Compliant | | | | | | | | |
| 650 | 5 | 20 35 | 2.2 | -10 - 40 | 5.60 | 67-1500-ND | 3.90 | OED-LDP65001E |

| Detection Range λ (nm) | Rise/Fall Time (ns) | Forward Current (mA) | Reverse Voltage (V) | Operating Temp. (°C) | Diameter D (mm) | Digi-Key Part No. | Price Each | Lumex Part No. |
|---------------------------------|---------------------|----------------------|---------------------|----------------------|-----------------|-------------------|------------|-----------------|
| Fig. 2 — Pin Photo Diode | | | | | | | | |
| 1100/1600 | 0.3 | 2 | 25 | -40 - 85 | 5.35 | 67-1505-ND | 25.60 | OED-PPD11075G-B |

Laser Diodes



| Fig. | Optical Power Output | Oper. Current (Typ.) | Oper. Volt. (Typ.) | Wave-length (Typ.) | Half Intensity Typ. † Parallel Perpendicular | Oper. Temp. °C | Digi-Key Part No. | Price Each | 10 |
|------|----------------------|----------------------|--------------------|--------------------|--|----------------|-------------------|------------|-------|
| 1A | 10mW | 40mA | 2.2 | 654nm | 8.5° 29° | -10 - 70 | 425-1806-ND | 10.74 | 9.21 |
| 1B | 50mW | 80mA | 2.8 | 654nm | 8.5° 21° | -5 - 70 | 425-1807-ND | 53.75 | 46.07 |
| 1C | 105mW | 120mA | 2.8 | 406nm | 9.0° 19° | -10 - 70 | 425-2697-ND | 816.75/1 | |

† Angle at 50% peak intensity (full-width at half-maximum). Parallel to the junction plane (X-Z plane) Perpendicular to the junction plane (Y-Z plane)

Panasonic Aspherical Glass Lenses

| Wave Length (nm) | Numerical Aperture | Focal Length (mm) | Working Distance (mm) | Lens Diameter (mm) | Mass (Weight) (mg) | Abbe Number | Cover Glass (mm) | Digi-Key Part No. | Pkg. | Price Per Package | Panasonic Part No. |
|------------------|--------------------|-------------------|-----------------------|--------------------|--------------------|-------------|------------------|-------------------|---------|-------------------|--------------------|
| 650 | 0.60 | 2.33 | 1.27 | 3.80 | 20.3 | 58 | 0.6 | P13565-ND | 5 pc. | 95.83 | EYL-GUDM128E |
| 650 | 0.60 | 2.33 | 1.27 | 3.80 | 20.3 | 58 | 0.6 | P13566-ND | 110 pc. | 1844.77 | EYL-GUDM128 |

Lightweight, high-performance aspherical glass lenses for various optical electronics applications.

Applications:
 • Pickup lens for optical drive devices • Collimator lens for laser beam printers • Coupling lens for optical communication systems • Image formation lens for sensors • Imaging device for CCD, CMOS

Features:
 • "One Shot" precision manufacturing process for an extremely compact, lightweight and high performance lens • High-quality processing and measurement techniques for superior performance • Short focal length for compact size • High numerical aperture achieved via aspherical design • Wide temperature and humidity range for increased reliability and stability • Various lenses and lens material available for many different applications

Specifications:
 • Operating Temperature Range: -30°C - 85°C

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