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SEMICONDUCTOR LASER FAB

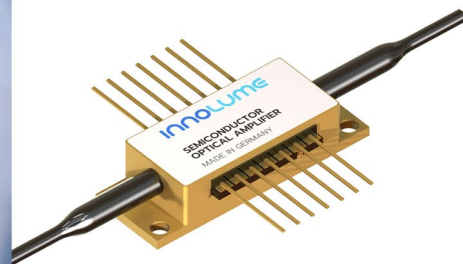
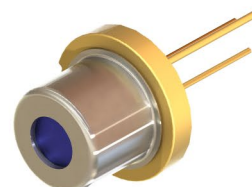
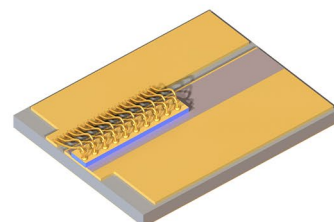
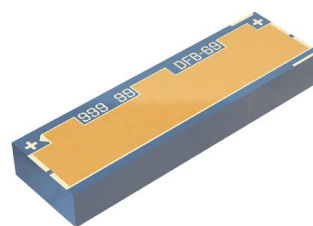


780-1350 nm



→ From Front-End Epitaxy
to Back-End Packaging

→ Fully In-House



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ABOUT INNOLUME

CUSTOMIZED DEVELOPMENT AND PRODUCTION

Innolume specializes in developing customized photonic devices tailored to specific customer requirements. We offer the capability to produce these devices in mid-volume quantities in-house and seamlessly transfer the production to contract manufacturing for high-volume manufacturing, ensuring scalability and quality consistency throughout the process.

Our team is a strong combination of dedicated R&D experts, skilled production specialists, and meticulous quality assurance professionals, all bringing a wealth of multicultural experience. This diverse synergy ensures innovative development, efficient manufacturing, and uncompromising quality in every product we deliver.

SINCE 2003

Innolume was the first team to successfully bring QD semiconductor devices to the commercial market. In achieving this milestone, we also developed leading QW laser technology, solidifying our position at the forefront of photonics innovation.



Unique Technology
of quantum dots



Vertically Integrated
production facility from
epitaxy to packaging



Endless Flexibility
of customized demands
even for low volumes



Widest Range
of existing category line



20+ Years of Experience
in Photonic R&D and
production



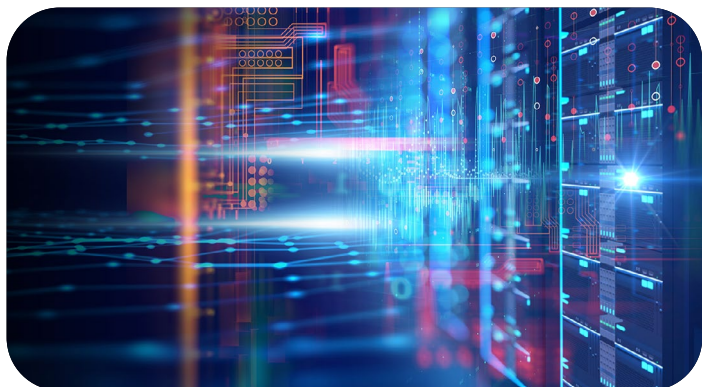
Made in Germany
in the high-tech center
of Dortmund



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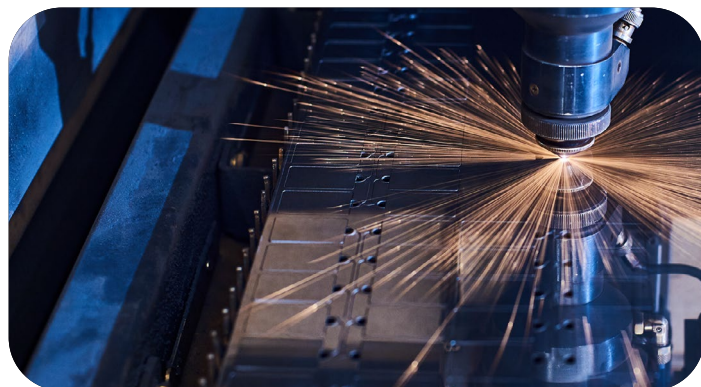
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APPLICATIONS



Datacom and Telecom

High reliability, low sensitivity to optical feedback and operation at high temperature – our Datacom solutions are made for precision and reliability.



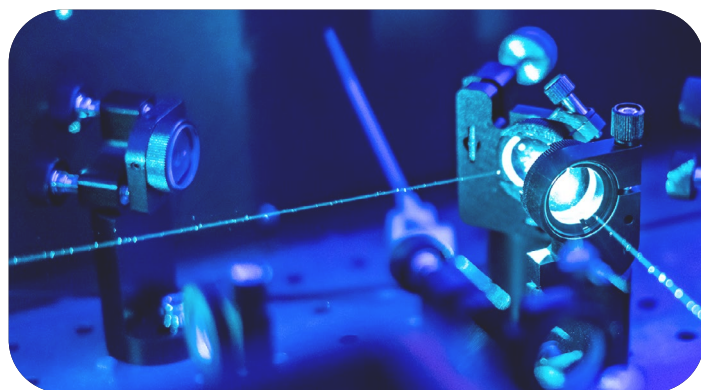
Industry & Instruments

Industrial OCT, fiber lasers and more – laser technology has a firm place in many fields of industry. Choose innovation, reliability and high-quality: Innolume offers a wide range of solutions for your next project.



Life-Science & Medical

Laser surgery, gas detection, OCT, measurements and more – laser technology has revolutionized the medical field, research and life-sciences. Our products provide high-quality solutions for many different markets and areas.



Scientific

Quantum technology, atomic clocks and more – laser technology has become an irreplaceable part of many fields of research and science. With high-power Gain-chips and -modules, SLD, DFB and SOA lasers Innolume offers a wide variety of solutions for your next project.

AWARDS



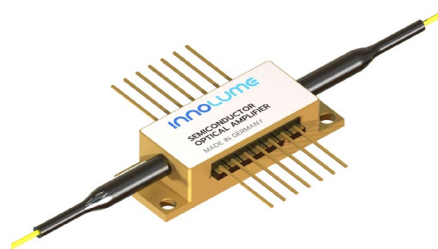
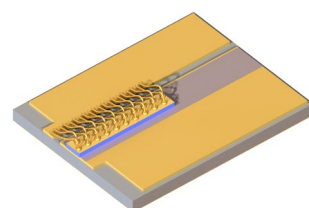
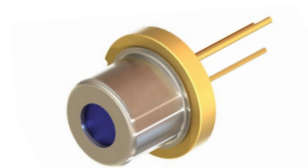
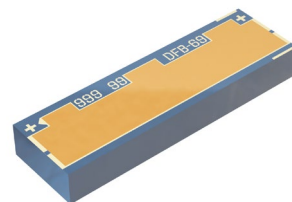
High saturation power O-band semiconductor optical amplifier (Optical information and communication / Security)



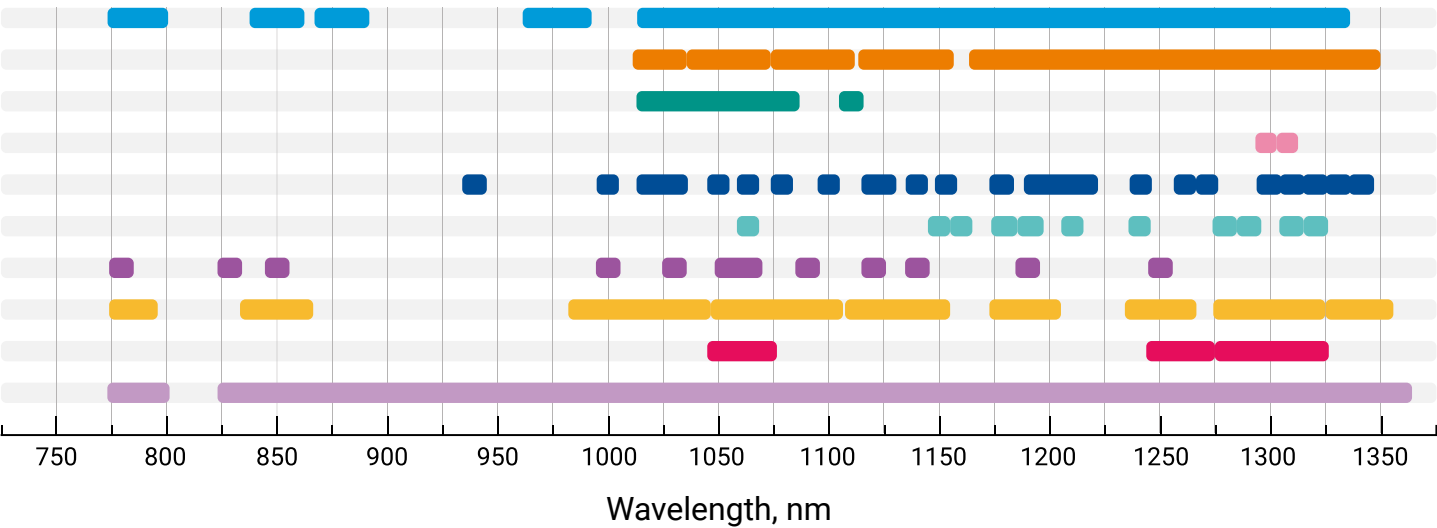
High Temperature DFB laser (CW Datacom Laser)

PORTFOLIO OVERVIEW

Our product lineup is designed to cover your specific goals in the 780 nm to 1350 nm wavelength range. Explore our offerings to find the right solution for your needs, or contact our experts to discover the best fit for your requirements.



WAVELENGTHS



- Distributed Feedback Lasers
- Fiber-Bragg-Grating Lasers
- Pulsed Lasers
- Comb Lasers
- Fabry-Perot Laser Diodes
- Broad-Area Lasers
- Superluminescent Diodes
- Semiconductor Optical Amplifiers
- Booster Optical Amplifiers
- Gain Chips

KEY CAPABILITIES

- High Power
- Wavelength Precision
- Customize Bandwidth
- High Stability
- Customization Options
- High Gain
- Integration Flexibility
- RoHS Compliance
- Low Ripples
- Broad-band
- TE polarization
- Individual preselection
- Mode-hop-free

FIBER-BRAGG-GRATING LASERS (FBG)

A Fiber-Bragg-Grating (FBG) coupled diode laser is a specialized laser system that combines a laser diode with a Fiber-Bragg-Grating. The FBG is a passive optical component inscribed within an optical fiber, which acts as a wavelength-selective filter.

This selective behavior effectively narrows and stabilizes the laser's output spectrum. When coupled with a laser diode, this system enables precise wavelength control, spectral bandwidth and stabilization of the laser emission, making it highly suitable for a range of demanding applications.



KEY FEATURES

■ High Output Power

With an impressive power output of up to 500mW, our lasers are well-equipped to meet the demands of your most challenging applications.

■ Wavelength Precision

Achieve precision down to $\pm 0.15\text{nm}$, ensuring that the emitted wavelength precisely matches your requirements.

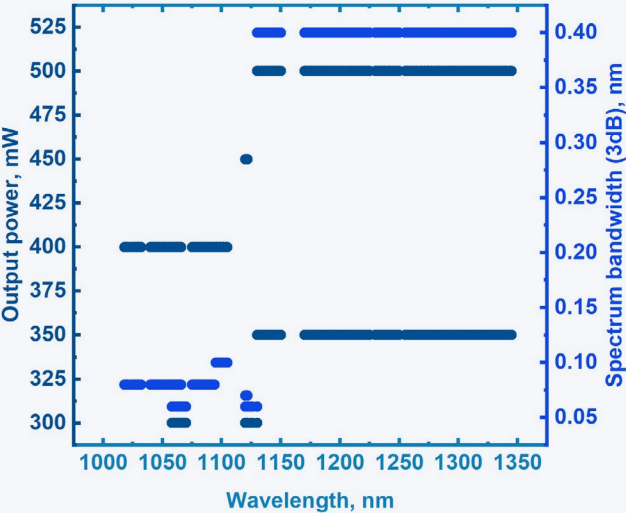
■ Flexible Spectral Bandwidth

Tailor the spectral bandwidth to your specific needs, with the ability to adjust it within the range of 0.02-1.0nm or even wider from 1 up to 3nm, offering a customized solution for your unique tasks.

■ Available options variety

Built-in monitor photodiode, polarisation maintaining fiber or single mode fiber, 900um loose tube on the fiber, external optical isolator, FBG athermal package, different connectors (FC/PC, SC/APC, SC/PC etc.)

TECHNICAL CHARACTERISTICS



- 

High Power
- 

Wavelength Precision
- 

Customize Bandwidth
- 

TE polarization
- 

Customization Options
- 

RoHS Compliance

Part-number	Wavelength range, nm ¹	Output power, mW	Forward current, mA	Forward voltage, V	Spectral bandwidth, nm ²	Polarization extinction ratio, dB	Package
FBA10XXB08PM400MXXXX	1018–1105	400	800	1.7	0.08	17	Fiber-coupled
FBB10XXB06PM300MXXXX	1058–1070	300	600	1.8	0.06	17	Fiber-coupled
FBB112XB06PM300MXXXX	1120–1130	300	700	1.6	0.06	17	Fiber-coupled
FBB112XB07PM450MXXXX	1120–1122	450	1200	1.7	0.07	17	Fiber-coupled
FBA11XXB40PM500MXXXX	1130–1250	350	1000	1.6	0.4	17	Fiber-coupled
FBA12XXB40PM500MXXXX	1251–1309	350	1200	1.7	0.4	17	Fiber-coupled
FBA13XXB40PM500MXXXX	1310–1345	350	1200	1.8	0.4	17	Fiber-coupled
FBA11XXB40PM500MXXXX	1130–1250	500	1200	1.8	0.4	17	Fiber-coupled
FBA12XXB40PM500MXXXX	1251–1309	500	1500	1.9	0.4	17	Fiber-coupled
FBA13XXB40PM500MXXXX	1310–1345	500	1800	1.9	0.4	17	Fiber-coupled

- 1 – Any custom wavelengths within the range available (with 1nm step)
- 2 – Custom bandwidth is available upon request

For more information about this product category,
please visit our website:

<https://www.interlab.com/en/products/fiber-coupled/>

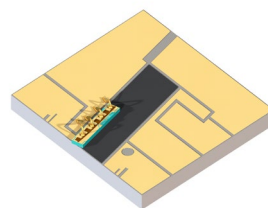


PULSED LASER DIODES

Innolume offers several types of pulsed laser diode products, including Fabry-Perot and DFB types. Fabry-Perot lasers deliver up to 1000 mW peak and 400 mW continuous power, making them suitable for high-power fiber systems.

DFB lasers produce ultra-short 50 ps pulses using gain switching, with peak power up to 300 mW and 50 mW in CW mode – ideal for applications requiring precise, ultra-short pulses.

FBG-based solutions for nanosecond pulse generation are also available; for details, manufacturer consultation is recommended. Custom wavelengths are available upon request.



KEY FEATURES

■ High Peak Power

Fabry-Perot pulsed lasers deliver up to 1000 mW peak and 400 mW continuous power, providing strong and stable optical output for use in power-demanding optical systems.

■ Ultra-Short Pulses

Using gain switching, DFB lasers generate pulses as short as 50 ps with peak power up to 300 mW. This ensures high temporal precision and consistent pulse shape.

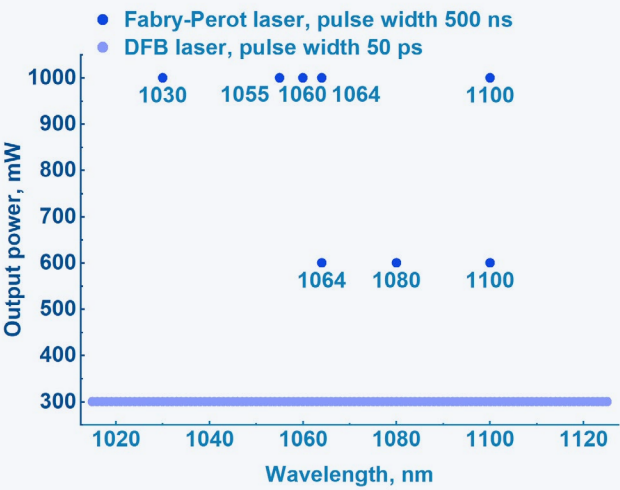
■ Custom Wavelength Options

Laser diodes can be produced with custom wavelengths upon request, enabling precise matching to system-level optical requirements.

■ Packaging Options

Devices are available in standard 14-pin butterfly modules with fiber coupling. Chip-on-carrier versions can be provided upon request and subject to further discussion, allowing integration into custom assemblies.

TECHNICAL CHARACTERISTICS



- 

High Power
- 

Wavelength Precision
- 

Individual preselection
- 

Customization Options
- 

RoHS Compliance

Part-number	Type	Peak wavelength, nm	Output peak power, mW	Peak forward current, mA	Pulse width, ns	Spectrum BW (3dB), nm	Polarization extinction ratio, dB	Package
DFB10XX000YY0D3PGXXX	DFB	1015–1125	300	2000	0.05	-	18	Fiber-coupled
SML1064003YY0D6PXXXX	Fabry-Perot	1064	600	1200	500	1.6	19	Fiber-coupled
SML1080003YY0D6PXXXX	Fabry-Perot	1080	600	1200	500	1.8	19	Fiber-coupled
SML1100003YY0D6PXXXX	Fabry-Perot	1100	600	1200	500	1.6	18	Fiber-coupled
SML1030003YY001PXXXX	Fabry-Perot	1030	1000	2000	500	1.5	18	Fiber-coupled
SML1055003YY001PXXXX	Fabry-Perot	1055	1000	2000	500	1.6	19	Fiber-coupled
SML1060003YY001PXXXX	Fabry-Perot	1060	1000	2000	500	1.5	17	Fiber-coupled
SML1064003YY001PXXXX	Fabry-Perot	1064	1000	2000	500	2.7	19	Fiber-coupled
SML1100003YY001PXXXX	Fabry-Perot	1100	1000	2000	500	2.8	19	Fiber-coupled

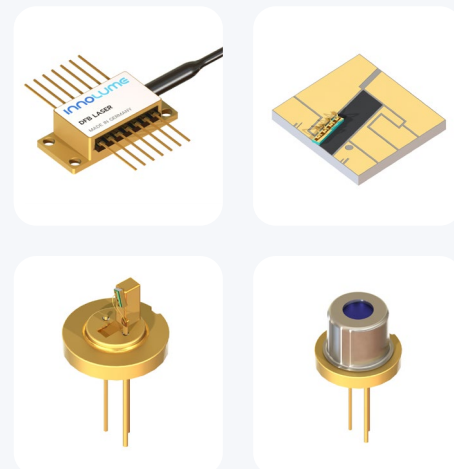
For more information about this product category,
please visit our website:

<https://www.interlab.pl/en/products/fiber-coupled-lasers>



SINGLE FREQUENCY LASER DIODES

A distributed feedback (DFB) laser diode is a semiconductor light source designed for stable single-frequency emission. Its internal Bragg grating structure acts as a wavelength filter, enabling single longitudinal mode operation with a narrow linewidth and high coherence length. Innolume's DFB lasers operate in the near-infrared range (780–1330 nm), providing high spectral purity, low noise, and reliable performance. With compact size and stable emission properties, these laser diodes are a practical choice for applications in telecommunications, spectroscopy, optical communication, metrology, sensing, and scientific research.



KEY FEATURES

■ Wavelength Range

DFB lasers cover part of the near-infrared range from 780 nm to 1330 nm. This range supports a wide variety of applications, including telecommunications, sensing, and spectroscopy.

■ Wavelength Accuracy

Typical wavelength tolerance is ± 1 nm, ensuring reliable alignment with target specifications. Finer accuracy can be provided on request. Additional fine-tuning is possible by adjusting chip current and temperature.

■ Spectral Linewidth

DFB lasers feature a narrow spectral line, typically ranging from a few megahertz down to hundreds of kilohertz. This key characteristic ensures high coherence length.

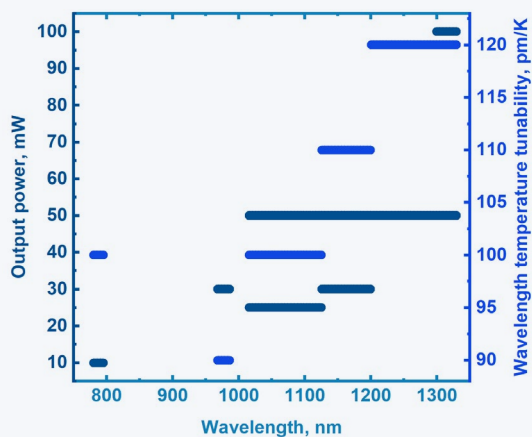
■ Single-Mode Operation

DFB lasers support stable single-frequency operation without mode hops. High side-mode suppression reduces noise and improves spectral signal quality.

■ Packaging Options

DFB lasers are available in TO-can, 14-pin butterfly (with or without built-in isolator), and RF packages. Chip-on-carrier versions are also offered for integration into custom assemblies.

TECHNICAL CHARACTERISTICS





Wavelength Precision



Customization Options



High Stability



Integration Flexibility



Mode-hop-free



RoHS Compliance

Part-number	Peak wavelength, nm	Output power, mW	Forward current, mA	Forward voltage, V	Threshold current, mA	SMSR ¹ , dB	PER ² , dB	Notes	Package
DFB09XX000CC060MXXXX	968–986	60	100	1.3	20	45	18	FF Div. (V/H, FWHM): 38°/8°	Chip-on-carrier*
DFB10XX000CC100MXXXX	1020–1120	100	200	1.7	30	45	18	FF Div. (V/H, FWHM): 40°/9°	Chip-on-carrier*
DFB11XX000CC100MXXXX	1120–1200	100	300	1.5	30	45	18	FF Div. (V/H, FWHM): 45°/9°	Chip-on-carrier*
DFB12XX000CC100MXXXX	1200–1280	100	350	1.7	50	45	18	FF Div. (V/H, FWHM): 45°/9°	Chip-on-carrier*
DFA1310000CC070MXXXX	1270–1330	70	200	1.5	25	45	18	FF Div. (V/H, FWHM): 53°/9°	Chip-on-carrier*
DFB13XX000CC100MXXXX	1280–1330	100	350	1.7	50	45	18	FF Div. (V/H, FWHM): 50°/9°	Chip-on-carrier*
DFB13XX000CC250MXXXX	1280–1330	250	800	1.6	100	45	18	FF Div. (V/H, FWHM): 50°/9°	Chip-on-carrier*
DFB10XX000YY025MFVXX	1020–1120	25	200	1.7	30	55	18	with integrated isolator	Fiber-coupled
DFB13XX000YY100MFVXX	1300–1330	100	800	2.6	60	50	18	with integrated isolator	Fiber-coupled
DFB07XX000YY010MFXXX	780–795	10	100	1.7	70	45	15	-	Fiber-coupled
DFB09XX000YY030MFXXX	968–986	30	100	1.3	20	55	18	-	Fiber-coupled
DFB10XX000YY050MFXXX	1020–1120	50	200	1.7	30	55	18	-	Fiber-coupled
DFB11XX000YY050MFXXX	1120–1200	50	300	1.5	30	50	18	-	Fiber-coupled
DFB12XX000YY050MFXXX	1200–1280	50	350	1.7	50	50	18	-	Fiber-coupled
DFB13XX000YY050MFXXX	1280–1330	50	350	1.7	50	50	18	-	Fiber-coupled

1 – Side-Mode Suppression Ratio
2 – Polarization extinction ratio
* – Chip-on-carrier versions also available in TO package.

For more information about this product category, please visit our website:

<https://www.interlab.pl/en/products/dfb-lasers/>

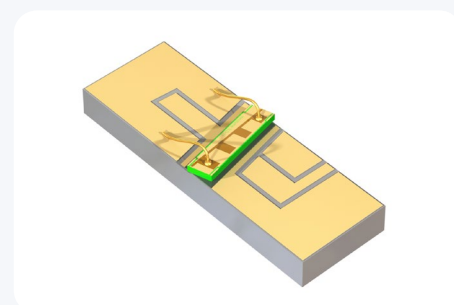
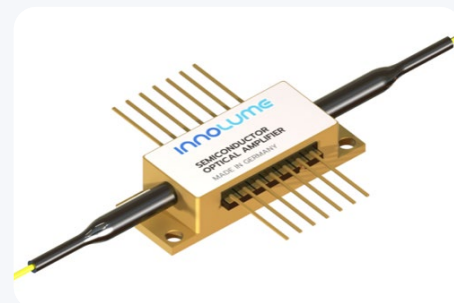


SEMICONDUCTOR OPTICAL AMPLIFIERS (SOA)

A Semiconductor Optical Amplifier (SOA) is a device designed to amplify optical signals by guiding light through a semiconductor-based single-mode waveguide that serves as the gain medium.

To minimize reflections and spectral distortions, the SOA chip design incorporates a tilted waveguide and anti-reflection coated facets, reducing facet reflection to less than 0.001%. This significantly suppresses spectral ripple and enhances the amplifier's performance.

Innolume's SOAs are engineered to deliver optical gain up to 40 dB, with certain models offering a gain bandwidth of up to 110 nm, making them ideal for a broad range of photonic applications including signal boosting in communication systems, spectroscopy, and sensing.



KEY FEATURES

■ High gain

Engineered to amplify optical signals by up to 40dB, providing substantial gain for effective signal amplification.

■ Broad-band gain

A broad gain bandwidth, extending 110nm for some devices.

■ Feedback Suppression

Tilted waveguides and anti-reflective coatings (<0.001% reflectivity) to reduce optical feedback and minimize spectrum ripples.

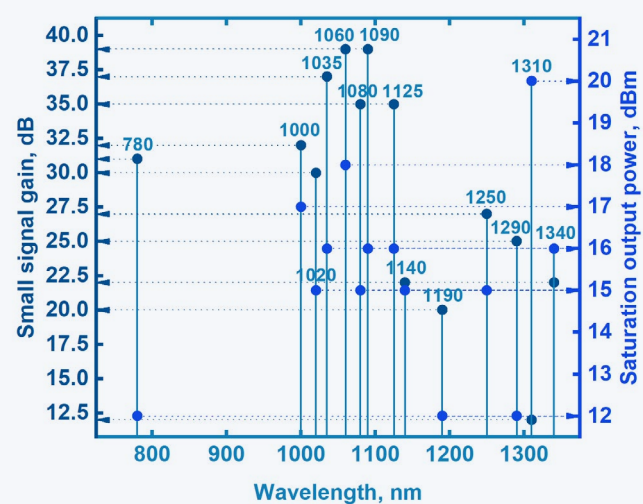
■ Packaging Options

Different packaging options are available, ranging from 14-pin SOA modules to alternative chip placement, including on a submount or as a bare die.

■ Customization

Customization options for the SOAs, allowing adjustments to wavelength, spectrum width, and output power based on customer requests.

TECHNICAL CHARACTERISTICS



High
Gain



RoHS
Compliance



Low
Ripples



TE
polarization



Individual
preselection

Part-number	Wavelength, nm	Gain bandwidth (3dB), nm	Small signal gain, dB	Saturation output power, dBm	Noise figure, dB	Forward current, mA	Forward voltage, V	Package
SOA07XX016YY30DBXXXX	7XX	16	31	12	6.5	300	1.9	Fiber-coupled
SOA10XX100YY30DBXXXX	10XX	100	32	17	6.5	600	1.7	Fiber-coupled
SOA10XX020YY40DBXXXX	10XX	20	37	16	8	450	1.6	Fiber-coupled
SOA10XX022YY40DBXXXX	10XX	22	39	18	8	450	1.6	Fiber-coupled
SOA10XX090YY30DBXXXX	10XX	90	32	18	6	450	1.7	Fiber-coupled
SOA11XX025YY35DBXXXX	11XX	25	35	16	10	600	1.6	Fiber-coupled
SOA11XX090YY22DBXXXX	11XX	90	22	15	5	400	1.4	Fiber-coupled
SOA12XX110YY27DBXXXX	12XX	110	27	15	8	900	1.6	Fiber-coupled
SOA12XX045YY25DBXXXX	12XX	45	25	12	7.5	400	1.4	Fiber-coupled
SOA13XX025YY12DBXXXX	13XX	25	12	20	5.5	1000	1.6	Fiber-coupled
SOA13XX025YY22DBXXXX	13XX	25	22	16	7	1000	1.6	Fiber-coupled

For more information about this product category,
please visit our website:

<https://www.interlab.com/en/products/semiconductor-optical-amplifiers/>



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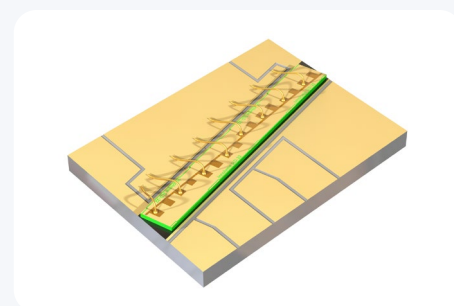
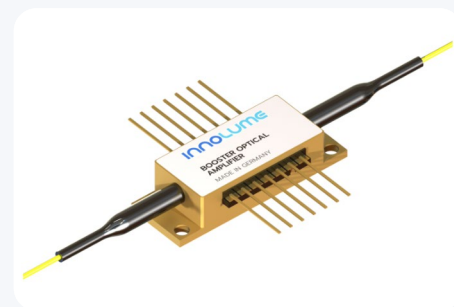
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BOOSTER OPTICAL AMPLIFIERS (BOA)

Booster Optical Amplifiers (BOAs) are specifically designed amplifiers to handle significant input signals, typically around 10 dBm. BOAs are particularly effective for boosting signals at the O-band, leveraging quantum dot technology to deliver high output power.

Certain models achieve over 550 mW output power and saturation output power up to 22 dBm, making them well-suited for high-performance optical communication and signal amplification applications.

BOAs also feature a wide gain bandwidth, effectively covering a substantial portion of the O-band spectrum, enabling efficient amplification across a broad wavelength range. To ensure stable and ripple-free performance, they incorporate feedback suppression mechanisms such as tilted waveguides and anti-reflection coatings with $< 0.001\%$ reflectivity, which minimize optical feedback and spectral fluctuations.



KEY FEATURES

■ High gain

Engineered to reach small-signal gain over 40 dB and output power up to 550 mW (submount) / 400 mW (fiber-coupled), with saturation power reaching 22 dBm.

■ Broad-band gain

O-band BOAs offer >70 nm gain bandwidth, supporting a wide range of optical communication applications.

■ Feedback Suppression

Tilted waveguides and anti-reflective coatings ($<0.001\%$ reflectivity) to reduce optical feedback and minimize spectrum ripples.

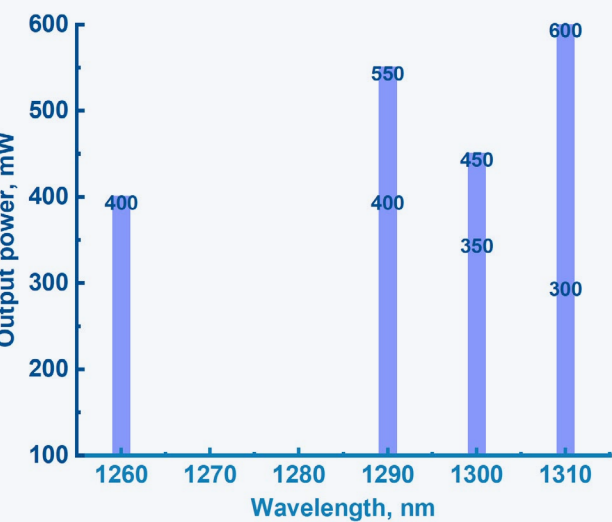
■ Packaging Options

Different packaging options are available, from 14-pin BOA modules to alternative chip placement, including on a submount or as a bare die.

■ Customization

Customization options for the BOAs, allowing adjustments to wavelength, spectrum width, and output power based on customer requests.

TECHNICAL CHARACTERISTICS



- 

High Power
- 

Broad-band
- 

RoHS Compliance
- 

TE polarization
- 

High Gain
- 

Individual preselection

Part-number	Gain mean wavelength, nm	Gain bandwidth (3dB), nm	Output power, mW	Saturated gain, dB	Small signal gain, dB	Saturation output power, dBm	Noise figure, dB	Forward current, mA	Package
BOA10XX080YY120MXXXX	10XX	80	120	10	15	19	6.5	400	Fiber-coupled
BOA12XX050YY400MXXXX	12XX	50	400	16	35	20	6.5	2000	Fiber-coupled
BOA12XX065YY400MXXXX	12XX	65	400	16	41	21	6	2000	Fiber-coupled
BOA12XX065CC550MXXXX	12XX	65	550	18	43	22	5	2000	Chip-on-carrier
BOA13XX060YY350MXXXX	13XX	60	350	16	28	22	6.5	2000	Fiber-coupled
BOA13XX060CC450MXXXX	13XX	60	450	17	31	22	5	2000	Chip-on-carrier
BOA13XX070YY300MXXXX	13XX	70	300	16	28	20	6	2000	Fiber-coupled
BOA13XX060CC600MXXXX	13XX	60	600	17	35	23	5	2000	Chip-on-carrier

For more information about this product category,
please visit our website:

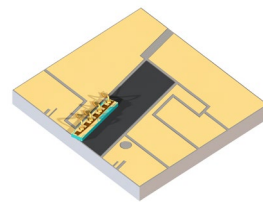
<https://www.interlab.pl/en/products/broadband-amplifiers/>



GAIN CHIPS (GC)

Gain Chips are critical components for building tunable diode lasers and highly stable external cavity diode lasers. Unlike standard Fabri-Perot laser diode chips, gain chips feature deep anti-reflective (AR) coatings on one facet and high-reflective (HR) coating on the second (one side optical access) or AR-coating on both facets (two side optical access), significantly suppress self-lasing or preventing it.

One side access gain chip can have straight stripe (type A) or curved stripe at AR-side (type B) to achieve ultra-low reflection ($<10^{-5}$). Two sides access gain chips have curved stripe at one side with deepest AR-coating and straight stripe at other one with partial reflection, enabling power outcoupling and maintaining feedback (type C). For advanced optical schemes chips with deepest AR-coating on both facets (type D) might be available.



KEY FEATURES

■ Optimized for wavelength-locked external cavity operation

Common cavity types Littrow and Littman use diffraction gratings to reflect selected wavelengths, with tuning via grating rotation. An intracavity lens collimates the beam onto the grating, while the zero-order beam serves as output.

■ Custom solutions

Operating wavelengths, tuning range and other parameters can be tailored for specific needs.

■ Fiber-coupled device option (Gain-Module)

Count on the unwavering performance and stability of our lasers, ensuring reliable operation.

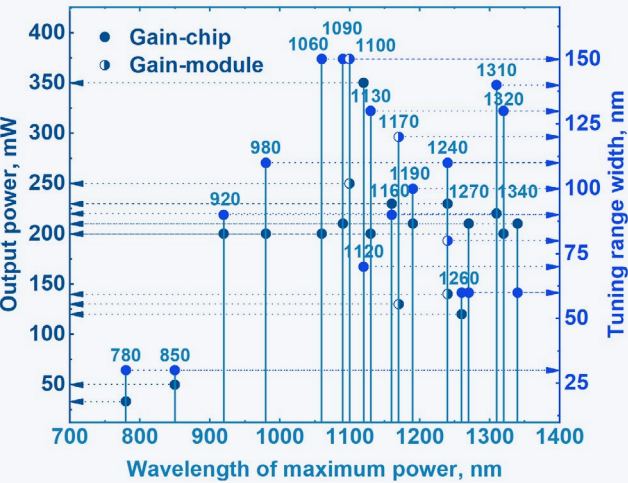
■ Open Package Customization

Diodes come in TO-headers, on C-mounts or Aluminium Nitride carrier (Chip-on-carrier). Custom packaging enables seamless integration, like coupling into photonics integrated circuit (PIC), boosting performance and compatibility in complex systems.

■ Ultra-low facet reflection

Curved stripe design chip enabling the suppression of self-lasing and wider tuning range.

TECHNICAL CHARACTERISTICS





High Power



Broad-band



Wavelength Precision



Customization Options



Integration Flexibility



RoHS Compliance

Part-number	Wavelength tuning range, nm	Maximal output power, mW	Forward current, mA	Slow axis beam divergency, deg.	Fast axis beam divergency, deg.	Chip cavity length, mm	Stripe type	Package
GCB0780030TC030MXXXX	765–795	33	150	7.5	22	2	curved	TO-header
GCB0850030TC050MXXXX	830–860	50	200	8	32	4	curved	TO-header
GCB0920090TC200MXXXX	860–950	200	400	8.5	36	1.5	curved	TO-header
GCB0950110TC200MXXXX	890–1000	200	400	5.5	31	1.5	curved	TO-header
GCB1060150TC200MXXXX	990–1140	210	400	8	17	1.5	curved	TO-header
GCB1105130TC200MXXXX	1030–1160	200	400	9	38	1.4	curved	TO-header
GCB1180100TC200MXXXX	1120–1220	210	600	6	37	3	curved	TO-header
GCB1220110TC200MXXXX	1160–1270	230	800	6	32	3	curved	TO-header
GCB1270130TC200MXXXX	1200–1330	200	800	6	38	3	curved	TO-header
GCB1330070TC200MXXXX	1290–1360	200	800	7	37	3	curved	TO-header
GCA1160090TC200MXXXX	1100–1190	230	600	5	42	3	straight	TO-header
GCA1270140TC200MXXXX	1200–1340	220	800	5	38	3	straight	TO-header
GCA1330060TC200MXXXX	1300–1360	210	800	5	38	3	straight	TO-header
GMB1060150YY250MXXXX	990–1140	250	600	6.5	16	3	curved	Fiber-coupled
GMB1140120YY130MXXXX	1080–1200	130	600	6	39	3	curved	Fiber-coupled
GMB12200130YY140MXXXX	1150–1280	140	800	7	35	3	curved	Fiber-coupled

For more information about this product category,
please visit our website:

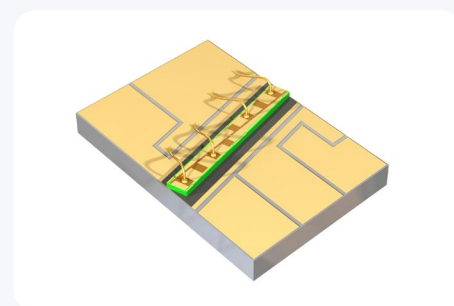
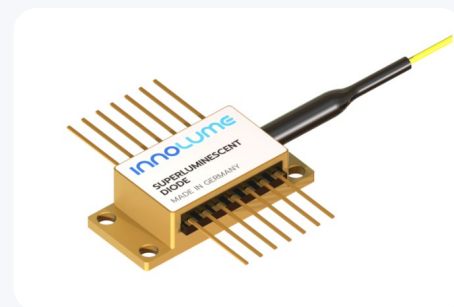
<https://www.interlab.com/interlab-data/interlab/>



SUPERLUMINESCENT DIODES (SLD)

A Superluminescent Diode (SLD) is a semiconductor device that emits amplified spontaneous emission across a broad optical spectrum when forward-biased. Unlike lasers, SLDs do not sustain optical feedback, resulting in low-coherence, broadband emission, which is ideal for applications such as optical coherence tomography, fiber optic sensing, and interferometry.

To suppress residual feedback and reduce spectral ripple, Innolume SLDs feature a tilted waveguide and anti-reflective facet coatings with $< 0.001\%$ reflectivity, enhancing both spectral stability and emission quality. Additionally, their high spatial coherence makes them well-suited for efficient coupling into single-mode optical fibers.



KEY FEATURES

■ High Output Power

Select Innolume SLDs achieve optical output powers exceeding 250 mW, supporting demanding broadband applications.

■ Broad Spectrum

Certain models offer spectrum widths exceeding 100 nm, enabling enhanced axial resolution in low-coherence applications.

■ Feedback Suppression

Tilted waveguides and anti-reflective coatings ($< 0.001\%$ reflectivity) to reduce optical feedback and minimize spectrum ripples.

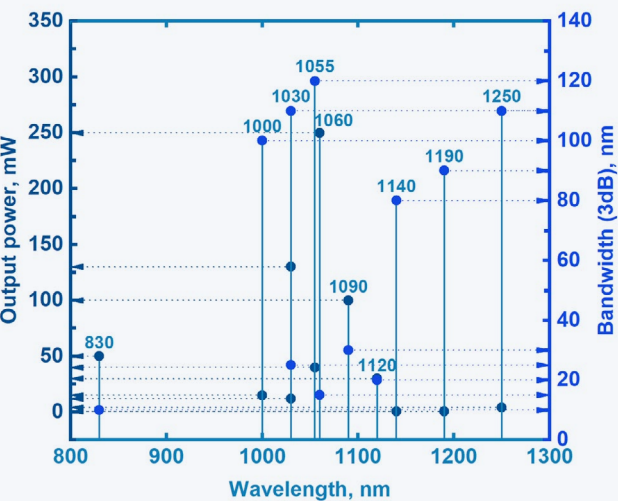
■ Packaging Options

Various packaging configurations available, including 14-pin modules and chip placement options such as on a submount, on a heatsink, or in a TO can.

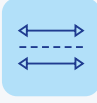
■ Customization

Innolume has the capability to produce SLDs with specified wavelength and spectrum width based on customer requests.

TECHNICAL CHARACTERISTICS



- 

High Power
- 

Customize Bandwidth
- 

High Stability
- 

Customization Options
- 

RoHS Compliance
- 

Broad-band

Part-number	Mean wavelength, nm	Spectrum bandwidth (3dB), nm	Output power, mW	ASE ripples (RMS), dB	Forward current, mA	Forward voltage, V	Package
SLD08XX010YY050MXXXX	8XX	10	50	0.05	350	1.8	Fiber-coupled
SLD10XX100YY015MXXXX	10XX	100	15	0.02	400	1.6	Fiber-coupled
SLD10XX025YY130MXXXX	10XX	25	130	0.06	800	1.8	Fiber-coupled
SLD10XX120YY040MXXXX	10XX	120	40	0.04	700	1.7	Fiber-coupled
SLD10XX020YY120MXXXX	10XX	20	120	0.04	800	1.8	Fiber-coupled
SLD10XX015YY250MXXXX	10XX	15	250	0.1	1500	1.9	Fiber-coupled
SLD10XX030YY100MXXXX	10XX	30	100	0.06	800	1.7	Fiber-coupled
SLD11XX020YY030MXXXX	11XX	20	30	0.03	300	1.5	Fiber-coupled
SLD11XX080YY0D5MXXXX	11XX	80	0.5	0.02	250	1.3	Fiber-coupled
SLD11XX090YY0D5MXXXX	11XX	90	0.5	0.01	315	1.4	Fiber-coupled
SLD12XX110YY004MXXXX	12XX	110	4	0.01	800	1.5	Fiber-coupled

For more information about this product category, please visit our website:

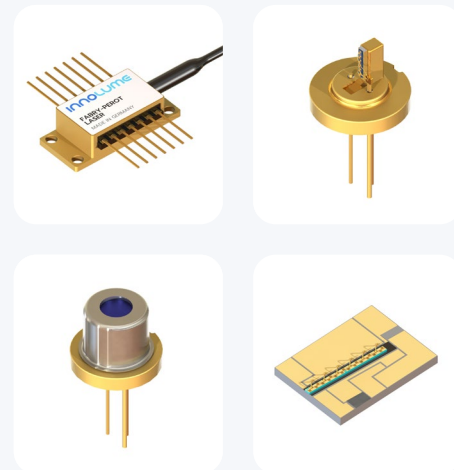
<https://www.interlab.com/en/products/sld-laser/>



SINGLE-MODE FABRY-PEROT LASER DIODES (SML)

Single-mode Fabry-Perot (FP) laser diodes are engineered to operate in a single transverse mode, delivering a diffraction-limited output beam with high power density, achieved through efficient collimation. The FP configuration, incorporating two parallel mirrors, stabilizes lasing conditions and enhances beam quality, making these diodes suitable for precision-dependent optical systems.

This combination of high CW power, precise wavelength control, and customizable packaging solutions underscores the robust adaptability and technical performance of single-mode Fabry-Perot laser diodes, making them indispensable in specialized optical and photonic applications.



KEY FEATURES

■ High Continuous Wave (CW) Output Power

Designed for high-performance use, these diodes deliver up to 700 mW CW output power (fiber-coupled) and 500 mW (TO-can headers), ensuring operation in demanding environments.

■ Wavelength Precision and Tuning

These diodes offer an extensive wavelength range with customization options. Temperature tuning enables precise control, ensuring ± 5 nm or better tolerance for seamless integration into photonic systems.

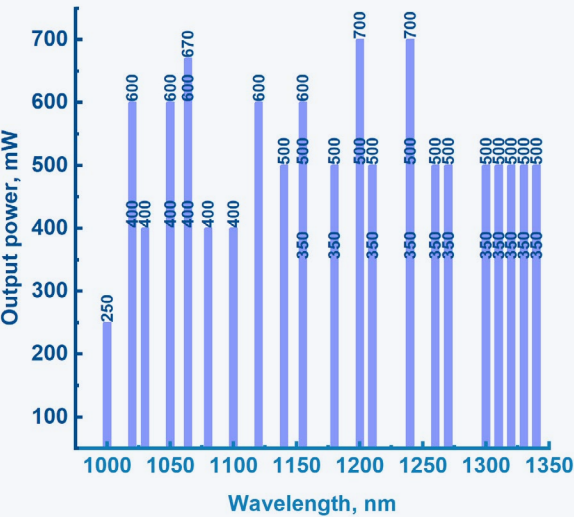
■ Fiber-Coupled Packaging Flexibility

Versatile diodes offer single-mode or polarization-maintaining fiber coupling, optional 900 μ m loose tube, built-in monitor photodiode, isolators and multiple connectors like FC/PC, SC/APC, SC/PC and APC ferrule for flexible interfacing.

■ Open Package Customization

Diodes come in TO-can headers (open or sealed), on C-mounts or Aluminium Nitride submounts (Chip-on-carrier). Custom packaging enables seamless integration, boosting performance and compatibility in complex systems.

TECHNICAL CHARACTERISTICS





High Power



RoHS Compliance



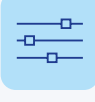
Integration Flexibility



TE polarization



Wavelength Precision



Customization Options

Part-number	Wavelength, nm ¹	Output power, mW	Forward current, mA	Forward Voltage, V	Spectral bandwidth, nm	PER ² , dB	Slow axis beam divergency, deg.	Fast axis beam divergency, deg.	Package
SML1000B50YY250MXXXX	1000	250	450	1.7	0.2	17	-	-	Fiber-coupled
SML10XXB50YY400MXXXX	1020, 1025, 1030, 1050, 1064, 1080, 1100	400	800	1.9	0.2	17	-	-	Fiber-coupled
SML10XXB50YY600MXXXX	1020, 1050, 1064, 1120	600	1000	2.1	0.2	17	-	-	Fiber-coupled
SML12XX005YY500MXXXX	1130–1259	500	1200	1.7	5	17	-	-	Fiber-coupled
SML13XX005YY500MXXXX	1260–1340	500	1500	1.9	6	17	-	-	Fiber-coupled
SML12XX005YY700MXXXX	1190, 1195, 1200, 1240, 1270	700	1700	1.8	6	17	-	-	Fiber-coupled
SML1000B60TC300MXXXX	1000	300	400	1.6	0.6	-	6	17	TO-header
SML1064B60TC500MXXXX	1064	500	600	1.7	0.6	-	6	31	TO-header
SML12XX005TC300MXXXX	1155, 1170, 1180, 1200, 1210, 1230, 1310	300	600	1.6	6	-	6	30	TO-header
SML12XX005TC500MXXXX	1155, 1200, 1210	500	900	1.6	5	-	6	29	TO-header

1 – Custom wavelengths are available upon request
2 – Polarization extinction ratio

For more information about this product category, please visit our website:

<https://www.interlab.com/en/products/fiber-coupled-lasers/>

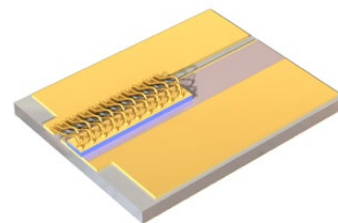
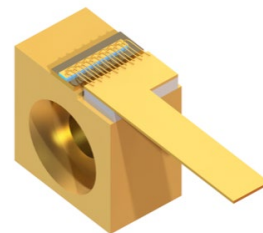


BROAD-AREA LASERS (BA)

Innolume's Broad-Area (BA) lasers are available in a variety of aperture sizes to accommodate the diverse needs of different applications, offering optical output powers of up to 15 W from a single emitter and exceeding 100 W in bar configurations.

Our BA are designed to deliver high output power, reliable operation, and efficient thermal management, ensuring optimal performance through effective heat dissipation from the laser to the heatsink in a clean operational environment.

All devices are optimized for effective thermal management through p-side down soldering, ensuring minimal thermal resistance and reliable operation at high current densities.



KEY FEATURES

■ Multimode Operation

BA lasers serve as multimode light sources.

■ High Output Power

Capable of producing optical power up to 15W from a single emitter.

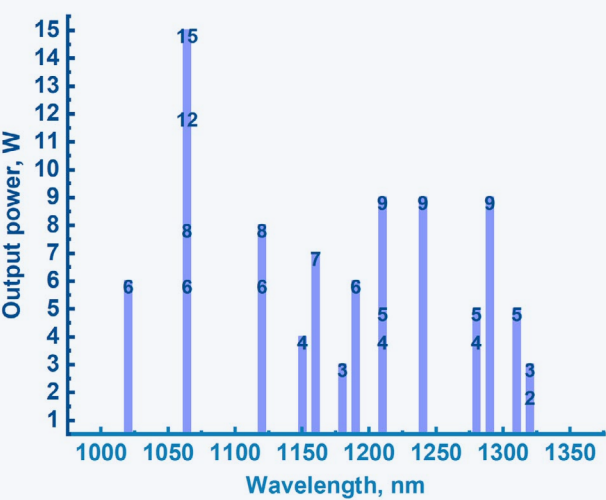
■ Packaging Options

Different packaging options are available including C-mounts, chips on a submount, a bare die or as bars.

■ Customization

Available in different aperture sizes and cavity lengths to cater to specific application needs.

TECHNICAL CHARACTERISTICS



-  High Power
-  RoHS Compliance
-  High Stability
-  Broad-band
-  Customization Options

Part-number	Mean wavelength, nm	Mesa width, um	Forward current, A	Forward voltage, V	Threshold current, A	Spectrum bandwidth (3dB), nm	Package
BAD10XX004CC006WXXXX	10XX	90	6.00	7.00	1.5	0.4	Chip-on-carrier
BAH10XX004CC012WXXXX	10XX	250	12.00	14.00	1.5	0.7	Chip-on-carrier
BAE11XX004CC008WXXXX	11XX	130	8.00	11.00	1.4	1	Chip-on-carrier
BAH11XX010CC007WXXXX	11XX	250	7.00	14.00	1.4	1	Chip-on-carrier
BAH11XX010CC006WXXXX	11XX	250	6.00	14.00	1.5	1.1	Chip-on-carrier
BAH12XX010CC009WXXXX	12XX	250	9.00	17.00	1.4	1.5	Chip-on-carrier
BAE12XX010CC005WXXXX	12XX	130	5.00	10.00	1.4	0.7	Chip-on-carrier
BAH12XX010CC009WXXXX	12XX	250	9.00	20.00	1.5	1.8	Chip-on-carrier
BAE13XX010CC005WXXXX	13XX	130	5.00	11.00	1.4	1	Chip-on-carrier

For more information about this product category,
please visit our website:

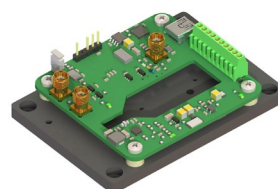
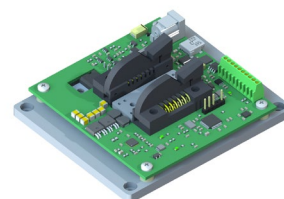
<https://www.interlab.com/pl/en/products/semiconductor-devices>



LASER DIODE DRIVERS

Laser diode drivers (LDDs) are electronic devices that deliver controlled current to laser diodes, ensuring safe and stable operation. Different LDD types exist for varied requirements: universal, high-precision, nanosecond, and picosecond operation. Many models support 14-pin or 10-pin butterfly packages with integrated TEC drivers.

Optional GUI software and APIs (LabView, Python) provide flexible control. When paired with fiber-coupled modules, integration becomes easier. Applications span telecommunications, sensing, research, and medical devices. LDDs include all-in-one enclosures with built-in firmware. Innolume offers multiple LDD solutions tailored to specific laser and system demands, backed by expert technical support.



KEY FEATURES

■ Wide-Ranging Applications

Our LDDs are designed to operate in different modes, providing precise control for various applications, including constant current, nanosecond and picosecond pulses. They are able to meet the diverse needs of laser diodes.

■ All-in-One Enclosure

We offer self-contained unit that combines and integrates a current driver and a thermoelectric cooler (TEC) for compact functionality.

■ User-Friendly Software

LDDs include a graphical user interface for straightforward configuration. For advanced control, optional LabView and Python libraries support system-level customization.

■ Connectivity Options

LDDs feature USB, RS-232, CAN, and UART interfaces, ensuring easy integration with diverse hardware setups and control platforms.

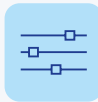
■ Turnkey Integration

Our LDDs come pre-assembled with fiber-coupled modules. Designs are flexible and customizable, offering optimized solutions for fast deployment in specific applications.

TECHNICAL CHARACTERISTICS

 **High Stability**

 **Integration Flexibility**

 **Customization Options**

 **RoHS Compliance**

CW LDD

Part-number	Forward current, A	Compliance voltage, V	TEC current, A	TEC voltage, V	Analog input frequency, kHz	Interfaces
LDD14CW2000HZIFXXXXX	2	3	4	4	3	USB/RS232/CAN
LDD14CWCOMPXXXXXXXXXX	2	4.8	3	-	500	USB
LDD14CWLASBENXXXXXXXXX	2	3	4	4	-	USB/RS232

Nanosecond LDD

Part-number	Pulse width, ns	Pulse repetition rate, MHz	Peak forward current, A	Compliance voltage, V	TEC current, A	TEC voltage, V	Interfaces
LDD14PNSXXXXXXXXXXXXX	1–100	0.001–10	2	3	1.5	4	USB/RS232 CAN/UART

Picosecond LDD

Part-number	Pulse width, ps	Pulse repetition rate, MHz	Peak forward current, A	Compliance voltage, V	TEC current, A	TEC voltage, V	Interfaces
LDD14PPSXXXXXXXXXXXXX	50	0.001–30	2	3	1.5	4	USB/RS232 CAN/UART

Turnkey Systems

Part-number	Peak wavelength, nm	Output peak power, mW	Pulse width, ns	Pulse repetition rate, MHz	Peak forward current, A	Interfaces	Package
OPD1064000YY0D2PGXXX	1064	250	0.06	0–30	2	USB/RS232/CAN/UART	Fiber-coupled
OPD1064000YY0D3PNXXX	1064	300	1...100	0–10	2	USB/RS232/CAN/UART	Fiber-coupled

For more information about this product category, please visit our website:

<https://www.interlab.pl/familia/laser-diody-laser/>



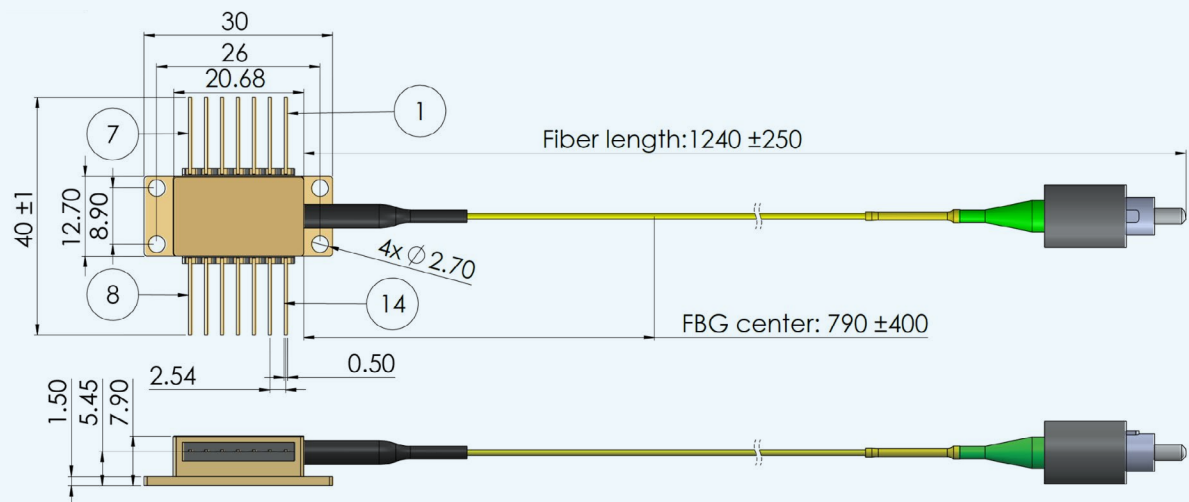
EXAMPLES OF PACKAGES

Innolume offers a wide range of standard and custom packaging solutions, including 14-pin butterfly, amplifier, and gain modules with HI or PM fiber, FC/APC connectors, and optional fiber protection. Additional options include integrated PDs, optical isolators, chip-on-carrier, TO packages with protective caps, and C-mounts. Custom connector types, RF modules, special submounts, and alternative fibers are available upon request, with full details on the Innolume website.

EXAMPLES OF PACKAGES

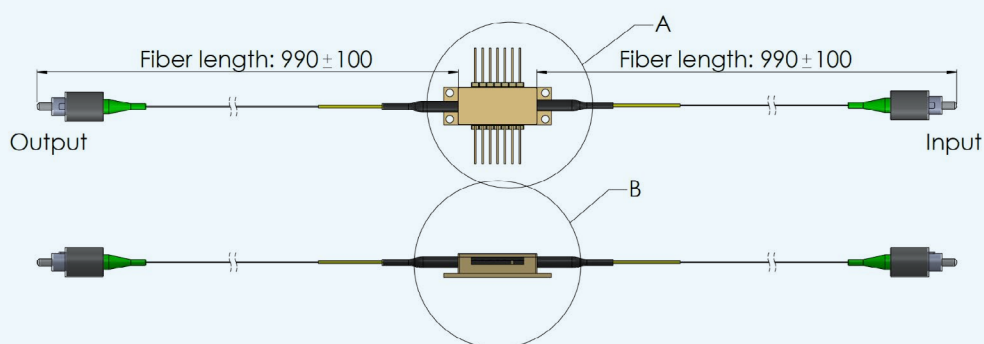
For the most up-to-date drawings and configuration details, please consult the Innolume website or contact the company directly.

→ 14-pin butterfly package



#	Pin identification	#	Pin identification
1	TEC "+"	8	-
2	Thermistor	9	-
3	-	10	Laser Diode "+"
4	-	11	Laser Diode "-"
5	Thermistor	12	-
6	-	13	Case
7	-	14	TEC "-"

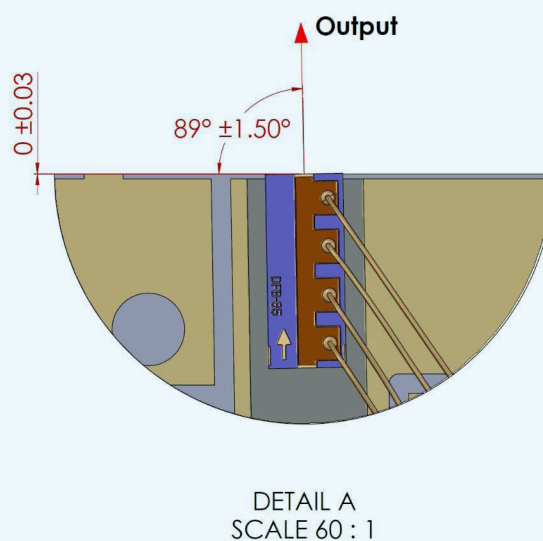
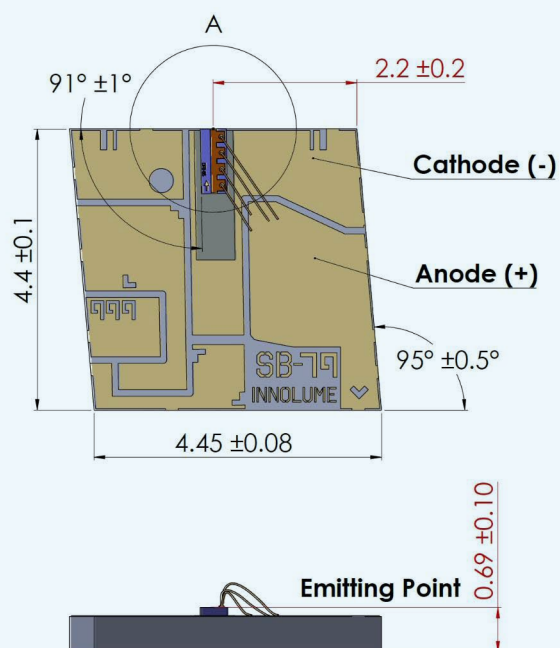
→ 14-pin butterfly SOA package



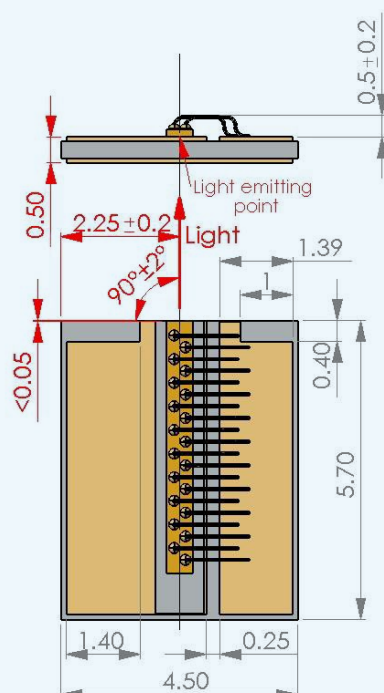
DETAIL B
SCALE 2 : 1

#	Pin identification	#	Pin identification
1	TEC "+"	8	-
2	Thermistor	9	-
3	-	10	Laser Diode "+"
4	-	11	Laser Diode "-"
5	Thermistor	12	-
6	-	13	Case
7	-	14	TEC "-"

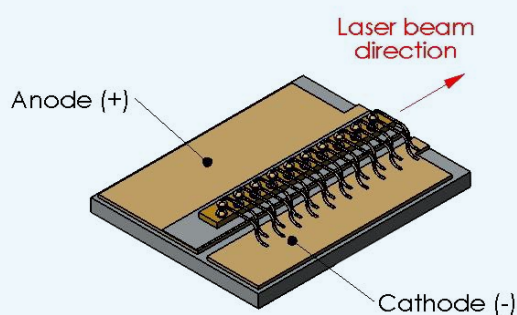
→ Chip-on-carrier



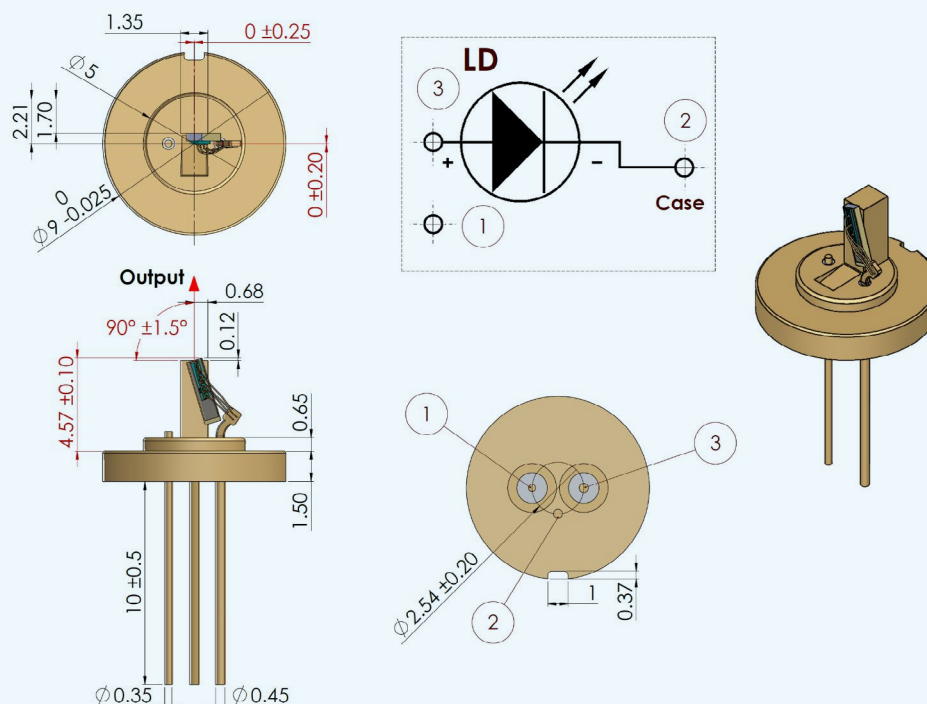
→ Chip-on-carrier



1. Tolerance not indicated ± 0.15 .
2. Red colored dimensions refer to emitting point.

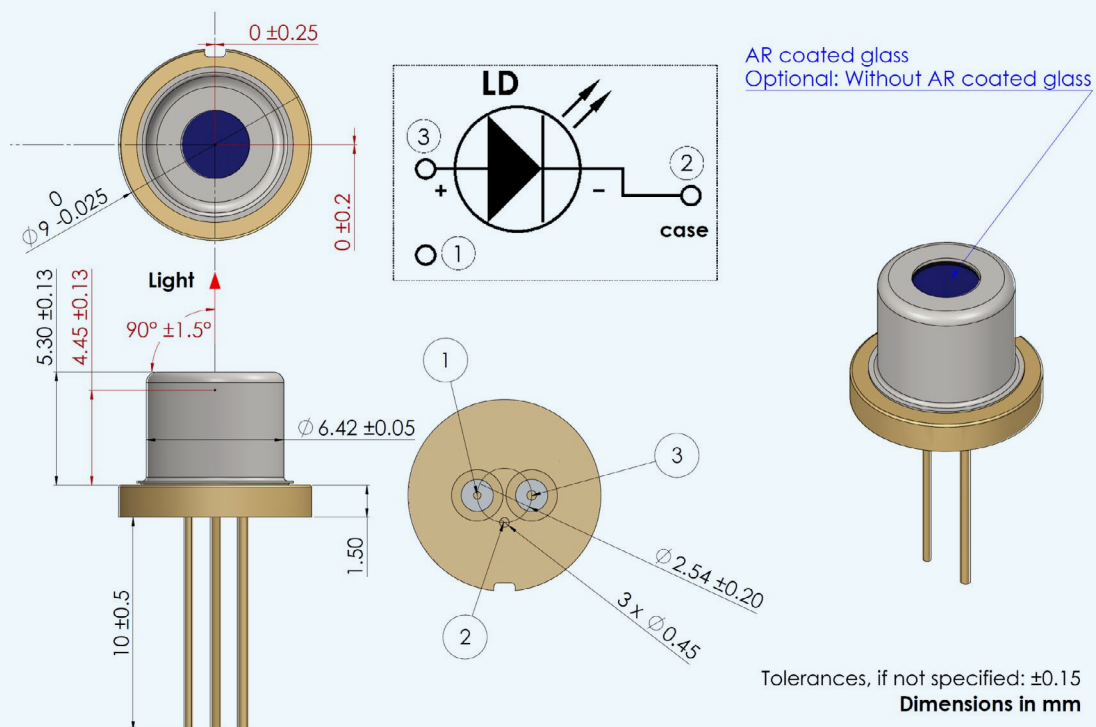


→ 9 mm TO-can header

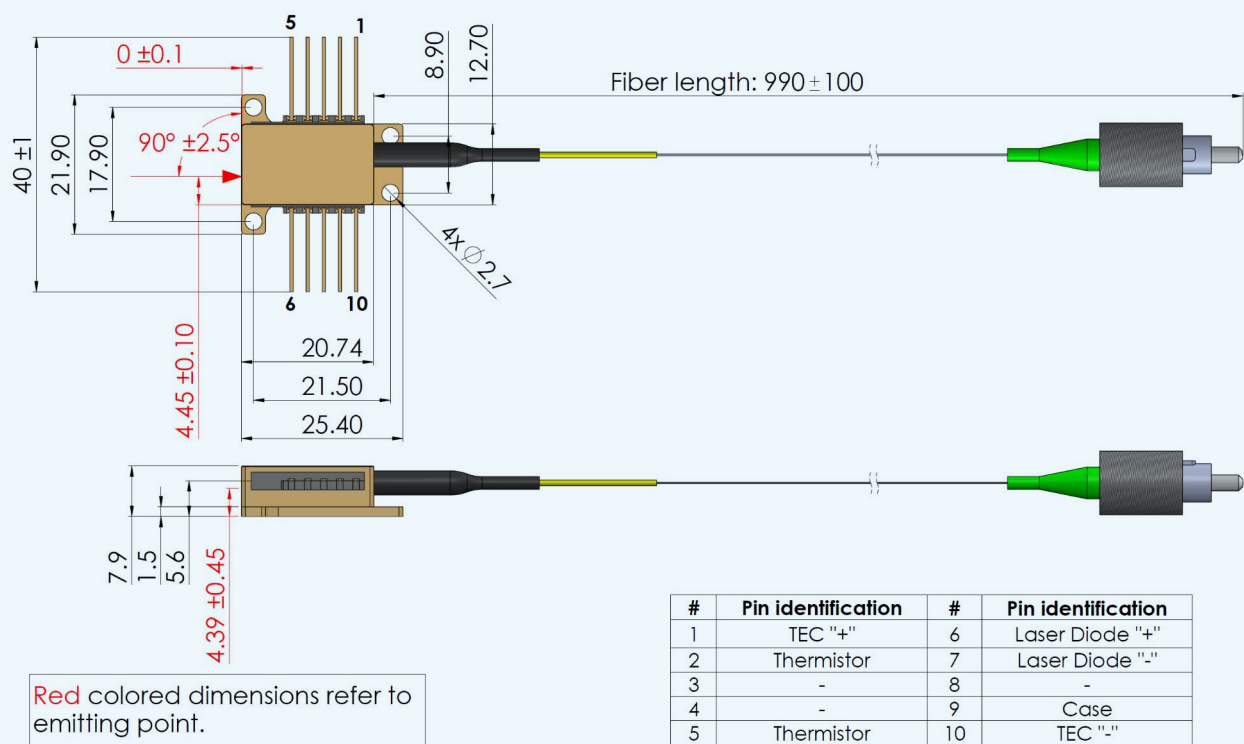


Note: Tolerances ± 0.15 (if not spec)

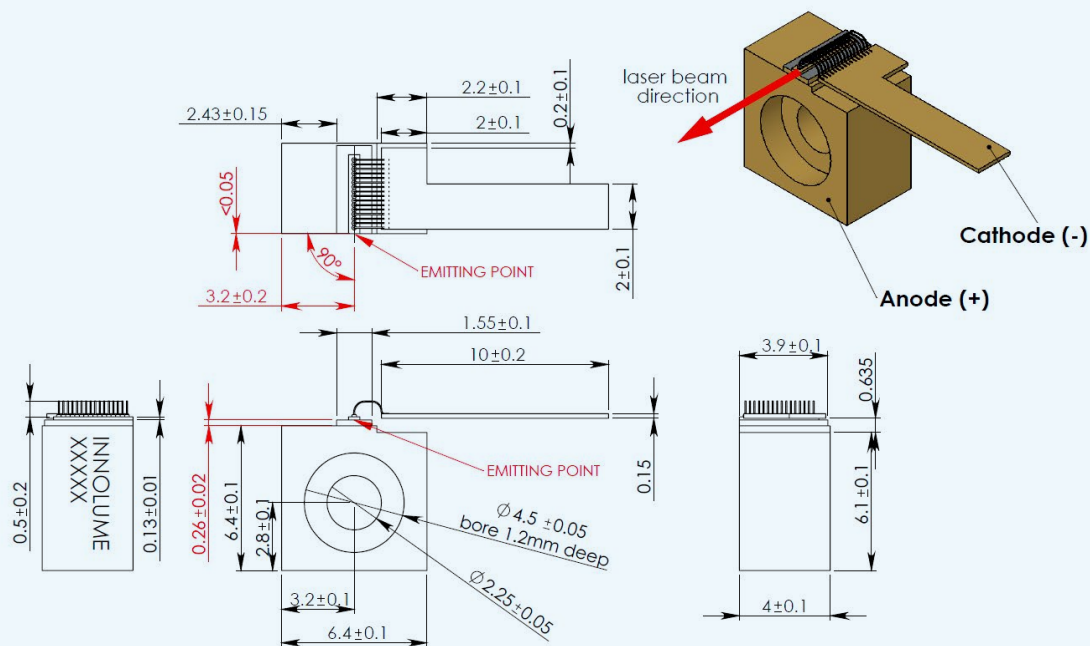
→ 9 mm TO-can header with Cap



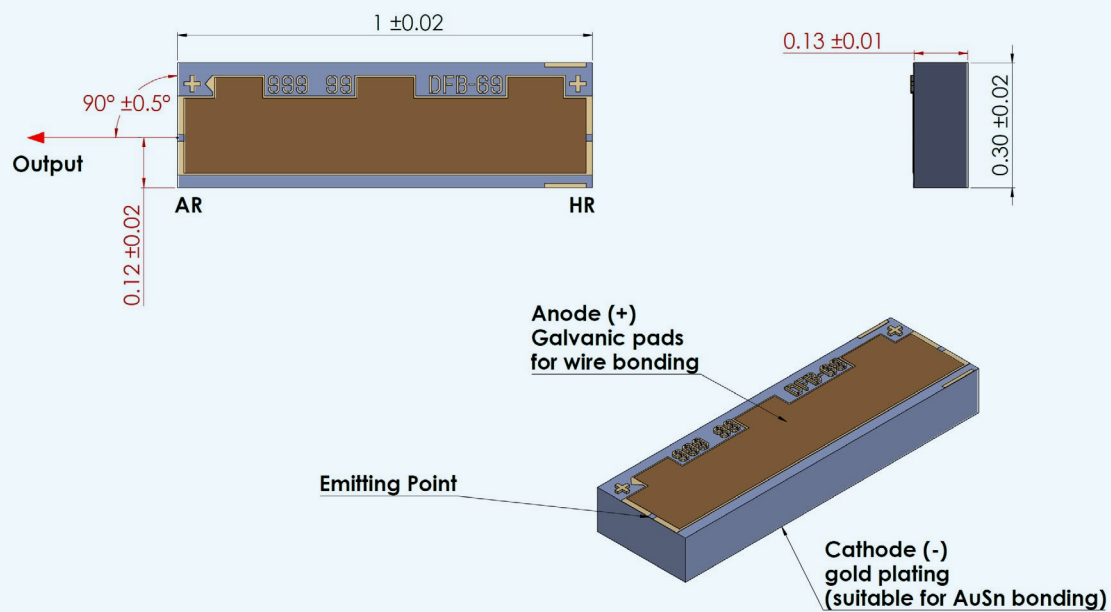
→ 10-pin butterfly Gain package



→ C-mount



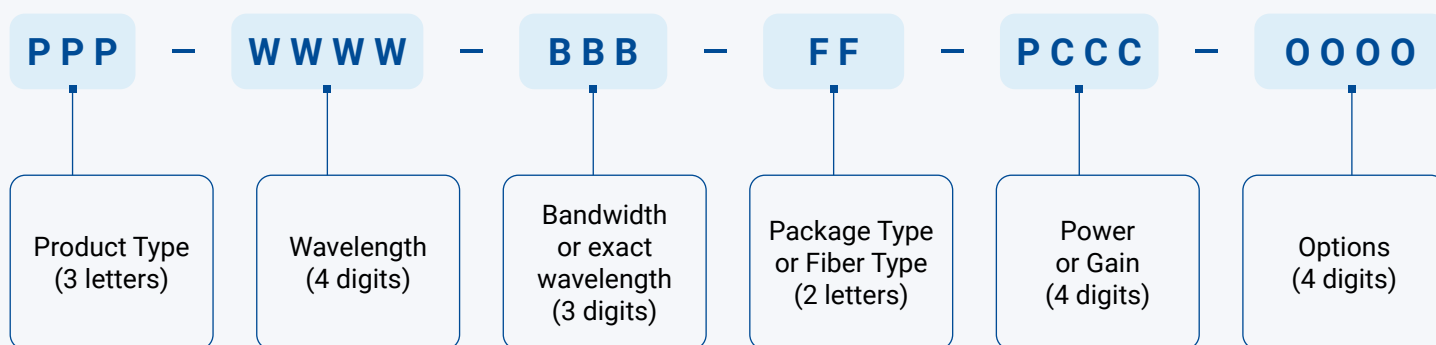
→ Bare die



PART NUMBERS

We provide a basic explanation of the meaning of the part number and add examples from different categories.

PART NUMBER STRUCTURE



BAD1064004CC006WXXXX → Broad area laser with 6W output power, mean wavelength 1064nm, 4nm bandwidth, 90um mesa width, chip-on-carrier

BAE1210010CC005WXXXX → Broad area laser with 5W output power, mean wavelength 1210nm, 10nm bandwidth, 130um mesa width, chip-on-carrier

BAD1064004CM006WXXXX → Broad area laser with 6W output power, mean wavelength 1064nm, 4nm bandwidth, 90um mesa width, chip on C-Mount

BOA1060080PM120MLXXX → 120mW output power at 1060nm mean wavelength, 80nm bandwidth, PM-980 fiber, with loose tube, SOA module

BOA1310070PM300MLXXX → 300mW output power at 1310nm mean wavelength, 70nm bandwidth, PM-980 fiber, with loose tube, SOA module

BOA1290065CC550MXXXX → 550mW output power at 1290nm mean wavelength, 65nm bandwidth, chip on carrier, chip-on-carrier

DFB1040000PM0D3PGXXX → 300mW peak output power (gain-switching) at 1040nm peak wavelength, PM980 fiber, module

DFB1120D53PM050MFLXX → 50mW output power at 1120.53nm peak wavelength, PM980 fiber, with built-in monitor photodiode and fiber loose tube, module

DFB1310D50PM100MFVXX → 100mW output power at 1310.5nm peak wavelength, PM1300 fiber, with built-in monitor photodiode and integrated isolator, module

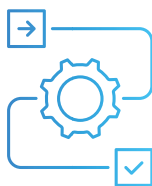
CHOOSE A PARTNER WHO DELIVERS RESULTS

Looking for a reliable supplier of GaAs-based laser diodes? Let's build your next innovation together. With proven technical expertise, a wide product range, and fast production capabilities from our in-house fab in Germany, we're ready to support your project from idea to implementation.

Whether you need high-performance standard products or fully customized laser solutions, our team is here to make it happen — efficiently and reliably.



CUSTOM SOLUTIONS
FOR YOUR APPLICATION



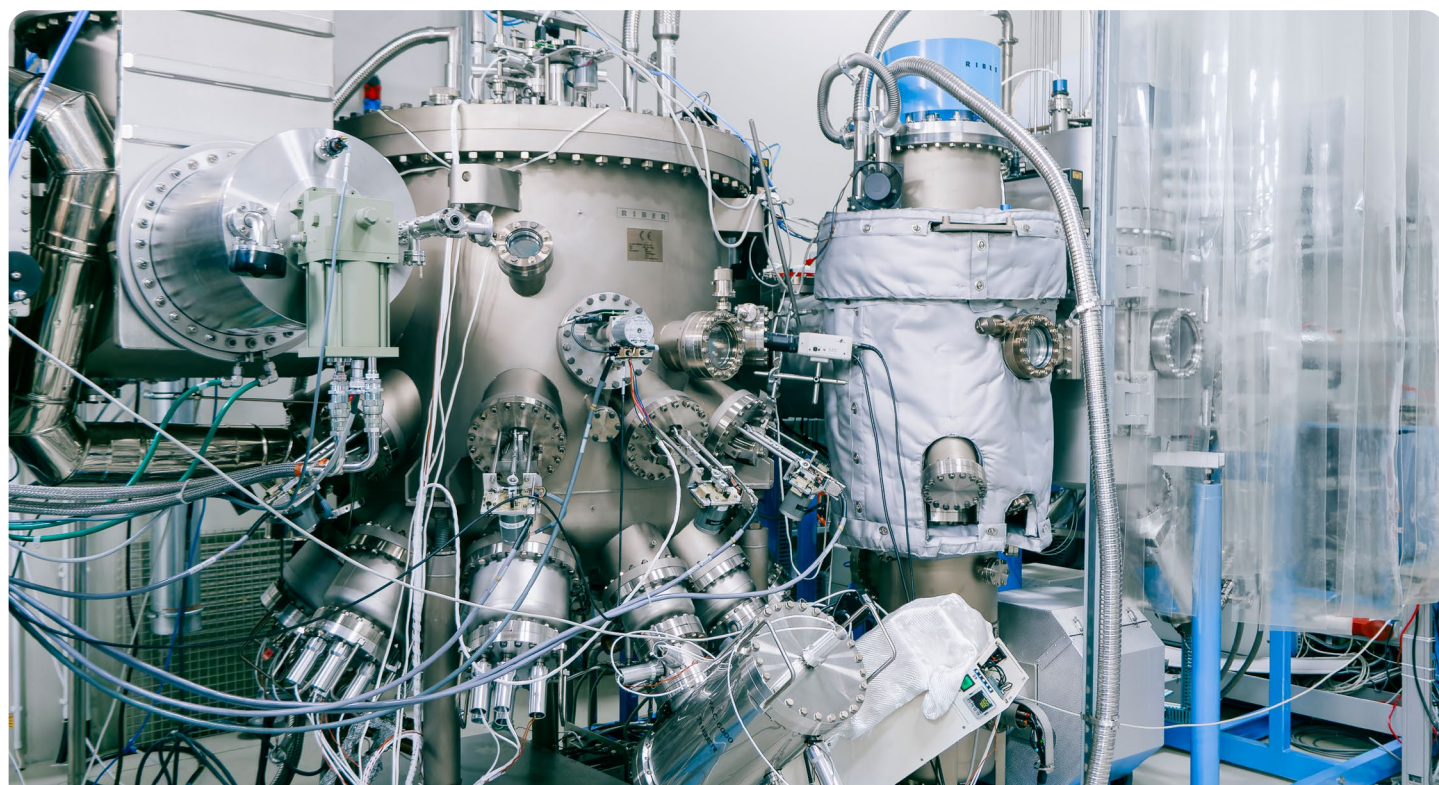
FULL PROCESS CONTROL —
FROM EPITAXY TO PACKAGING



SUPPORT AT EVERY STAGE
OF YOUR PROJECT



DEVELOPED AND BUILT
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GET IN TOUCH TO LET'S BRING YOUR IDEA TO LIFE

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