DATA SHEET

EYP-RWE-0740-02000-1500-SOT02-0000

Revision 1.11

GAIN CHIPS
AR coated Fabry-Perot Laser

General Product Information

Product	Application
tunable 740 nm Fabry-Perot Laser	Spectroscopy
for use in an External Cavity Diode Laser (ECDL)	covering wavelengths between 723 and 742 nm
sealed SOT Housing	
Monitor Diode	

Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Storage Temperature	T_S	°C	-40		85	Stess in excess of the Absolute Maximum Ratings can cause permanent damage to the device.
Operational Temperature at Case	T_C	°C	-20		50	
Forward Current	I_F	mA			180	
Reverse Voltage	V_R	V			2	
Output Power (extracavity)	P_{opt}	mW			50	

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_C	°C	15		40	
Forward Current	I_F	mA			160	

Characteristics ex-cavity at T_C= 25°C, at BOL
under recommended working condition

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm		735		The actual achieved wavelength and power are strongly influenced by the external cavity. eyP gives no guarantee on these parameters.
Tuning Range	$\Delta\lambda_{tun}$	nm	723		742	
Output Power	P_{opt}	mW		40		
Polarization				TM		E field perpendicular to Pin 2 - Pin 3 - plane
Spatial Mode (transversal)				TEM_{00}		Fundamental Mode

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2019-03-01

GAIN CHIPS
AR coated Fabry-Perot Laser

Amplified Spontaneous Emission (ASE)
without external cavity

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Divergence parallel (FWHM)	$\Theta_{\parallel}$			10		parallel to Pin 2 - Pin 3 plane (see p. 3)
Divergence perpendicular (FWHM)	$\Theta_{\perp}$			28		perpendicular to Pin 2 - Pin 3 plane (see p. 3)
Monitor Detector Responsivity	I_{mon} / P_{ASE}	µA/mW	1		40	$U_{R\ MD}$ = 5 V

Chip Parameter

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Cavity Length	L	µm		1500		
Reflectivity at Front Facet	R_{ff}			$3 \cdot 10^{-4}$	$1 \cdot 10^{-3}$	

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2019-03-01

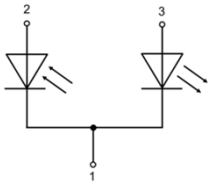
GAIN CHIPS
AR coated Fabry-Perot Laser

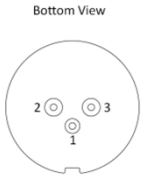
Package Dimensions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Height of Emission Plane	h	mm	3.50	3.65	3.70	reference plane: top side of TO header
Excentricity of Emission Center	R	mm			0.12	reference: center of outer diameter of header
Pin Length	L_{PIN}	mm		14		

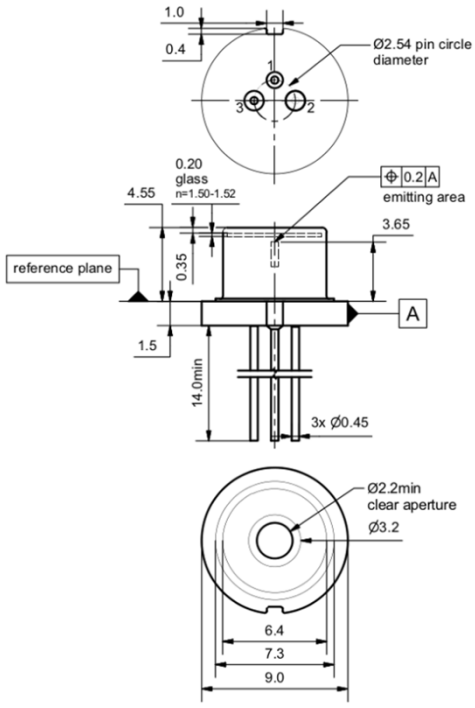
Package Pinout

1 Laser Diode Cathode, Monitor Diode Cathode, Case
2 Photo Diode Anode
3 Laser Diode Anode





Package Drawings



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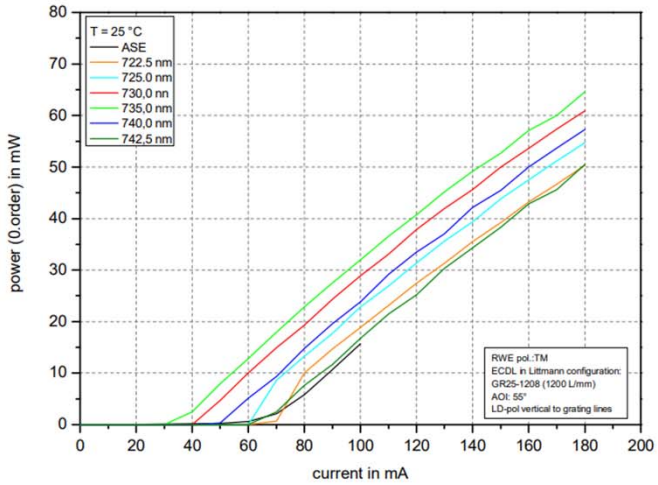
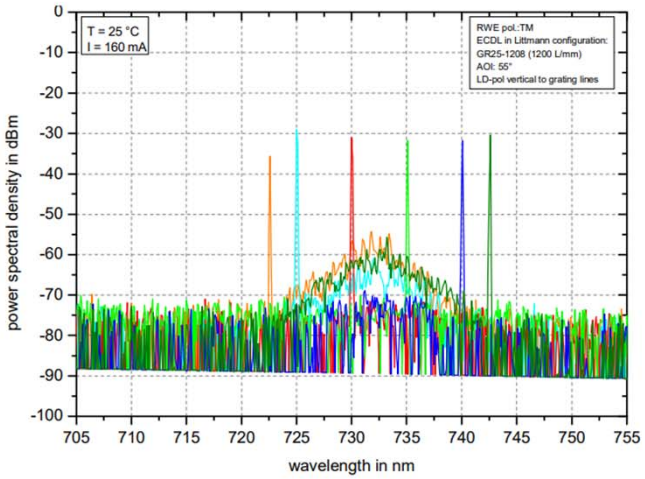
GAIN CHIPS
AR coated Fabry-Perot Laser

Typical Measurement Results ex-cavity





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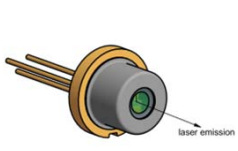
Unpacking, Installation and Laser Safety

Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.

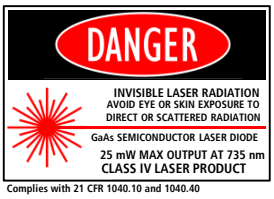


The TPA diode type is known to be sensitive against thermal stress. It should not be operated without appropriate injection from a seed laser. Operating at moderate temperatures on proper heat sinks willl contribute to a long lifetime of the diode. The chip should be protected against moisture. A water vapor content below 5000 ppm is recommended for applications with high reliability requirements.

IEC-60825-0

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.

Each laser diode will come with an individual test protocol verifying the parameters given in this document.



Complies with 21 CFR 1040.10 and 1040.40

DATA SHEET

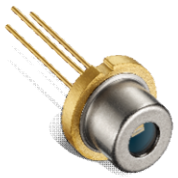
EYP-RWE-0670-00703-1000-SOT02-0000

Revision 1.22

GAIN CHIPS
AR coated Fabry-Perot Laser

General Product Information

Product	Application
tunable 670 nm Fabry-Perot Laser	Li Spectroscopy at 671 nm
for use in an External Cavity Diode Laser (ECDL)	also covering 668 nm
sealed SOT Housing	
Monitor Diode	



Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Storage Temperature	T_S	°C	-40		85	Stress in excess of the Absolute Maximum Ratings can cause permanent damage to the device.
Operational Temperature at Case	T_C	°C	0		30	
Forward Current	I_F	mA			160	
Reverse Voltage	V_R	V			0	
Output Power (extracavity)	P_{opt}	mW			60	

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_C	°C	15		20	
Forward Current	I_F	mA			140	

Characteristics at T_C= 20°C, BOL
under recommended working condition

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm		670		The actual achieved wavelength and power are strongly influenced by the external cavity. eyP gives no guarantee on these parameters.
Tuning Range	$\Delta\lambda_{tun}$	nm	665		675	
Output Power	P_{opt}	mW		50		
Polarization				TE		E field parallel to Pin 2 - Pin 3 - plane
Spatial Mode (transversal)				TEM00		Fundamental Mode

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Revision 1.22

2021-05-19

GAIN CHIPS
AR coated Fabry-Perot Laser

Amplified Spontaneous Emission (ASE)
without external cavity

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Divergence parallel (FWHM)	$\Theta_{\parallel}$			10		parallel to Pin 2 - Pin 3 plane (see p. 3)
Divergence perpendicular (FWHM)	$\Theta_{\perp}$			29		perpendicular to Pin 2 - Pin 3 plane (see p. 3)
Monitor Detector Responsivity	I_{mon} / P_{ASE}	µA/mW	1		40	$U_{R\ MD}$ = 5 V

Chip Parameter

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Cavity Length	L	µm		1000		
Reflectivity at Front Facet	R_{ff}			$3 \cdot 10^{-4}$	$1 \cdot 10^{-3}$	

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Revision 1.22

2021-05-19

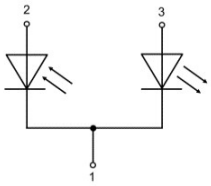
GAIN CHIPS
AR coated Fabry-Perot Laser

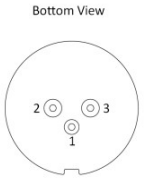
Package Dimensions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Height of Emission Plane	h	mm	3.50	3.65	3.70	reference plane: top side of TO header
Excentricity of Emission Center	R	mm			0.12	reference: center of outer diameter of header
Pin Length	L_{PIN}	mm		14		

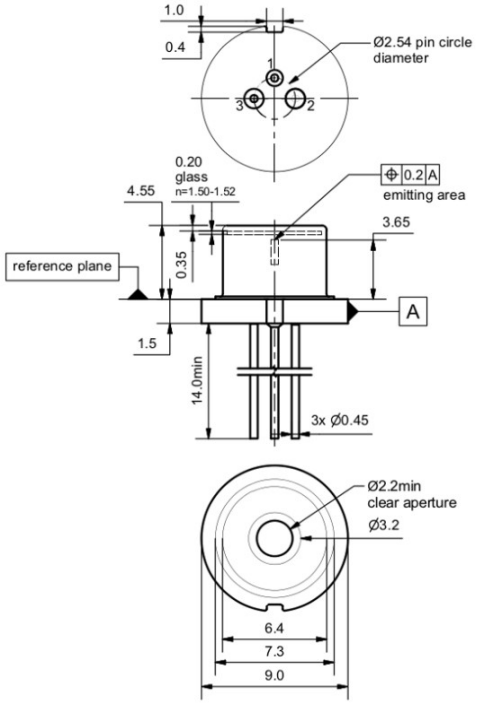
Package Pinout M-type

1 Laser Diode Cathode, Monitor Diode Cathode, Case
2 Photo Diode Anode
3 Laser Diode Anode





Package Drawings



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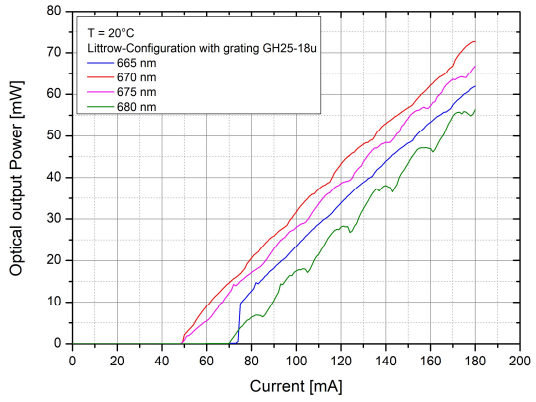
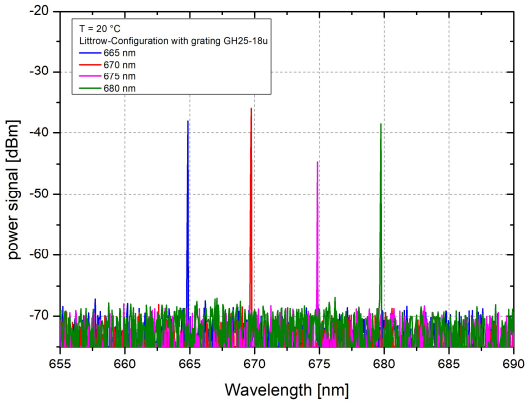
2021-05-19

GAIN CHIPS
AR coated Fabry-Perot Laser

Typical Measurement Results





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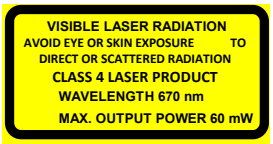
Unpacking, Installation and Laser Safety

Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.



The TPA diode type is known to be sensitive against thermal stress. It should not be operated without appropriate injection from a seed laser. Operating at moderate temperatures on proper heat sinks willl contribute to a long lifetime of the diode. The chip should be protected against moisture. A water vapor content below 5000 ppm is recommended for applications with high reliability requirements.

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.

Each laser diode will come with an individual test protocol verifying the parameters given in this

DATA SHEET

EYP-RWE-0690-00703-1000-SOT02-0000

Revision 1.01

GAIN CHIPS
AR coated Fabry-Perot Laser

General Product Information

Product	Application
tunable 690 nm Fabry-Perot Laser	Spectroscopy
for use in an External Cavity Diode Laser (ECDL)	
sealed SOT Housing	
Monitor Diode	

Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Storage Temperature	T_S	°C	-40		85	Stess in excess of the Absolute Maximum Ratings can cause permanent damage to the device.
Operational Temperature at Case	T_C	°C	0		30	
Forward Current	I_F	mA			160	
Reverse Voltage	V_R	V			0	
Output Power (extracavity)	P_{opt}	mW			20	

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_C	°C		20		
Forward Current	I_F	mA			140	

Characteristics ex-cavity at T_C= 20°C, BOL
under recommended working condition

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm		685		The actual achieved wavelength and power are strongly influenced by the external cavity. eyP gives no guarantee on these parameters.
Tuning Range	$\Delta\lambda_{tun}$	nm	675		692	
Output Power	P_{opt}	mW		15		
Polarization				TE		E field parallel to Pin 2 - Pin 3 - plane
Spatial Mode (transversal)				TEM_{00}		Fundamental Mode
Monitor Detector Responsivity	I_{mon} / P_{ASE}	µA/mW	1		40	$U_{R\ MD}$ = 5 V

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2019-03-01

GAIN CHIPS
AR coated Fabry-Perot Laser

Chip Parameter

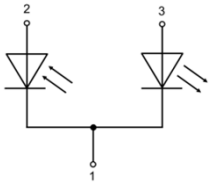
Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Cavity Length	L	µm		1000		
Reflectivity at Front Facet	R_{ff}			$3 \cdot 10^{-4}$	$1 \cdot 10^{-3}$	

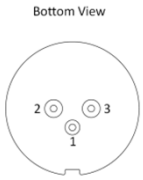
Package Dimensions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Height of Emission Plane	h	mm	3.50	3.65	3.70	reference plane: top side of TO header
Excentricity of Emission Center	R	mm			0.12	reference: center of outer diameter of header
Pin Length	L_{PIN}	mm		14		

Package Pinout

1 Laser Diode Cathode, Monitor Diode Cathode, Case
2 Photo Diode Anode
3 Laser Diode Anode





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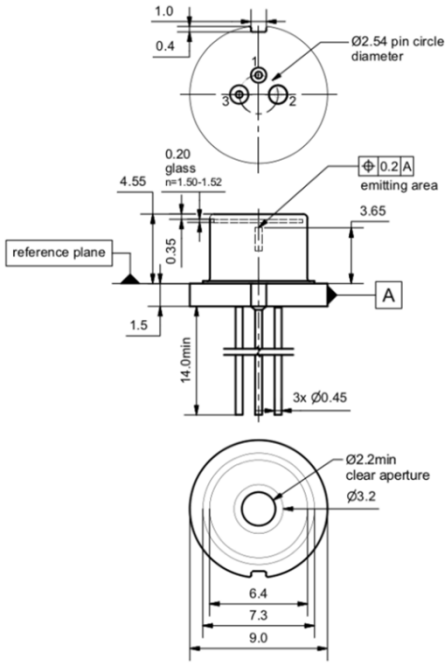
Revision 1.01

2019-03-01

GAIN CHIPS
AR coated Fabry-Perot Laser

Package Drawings



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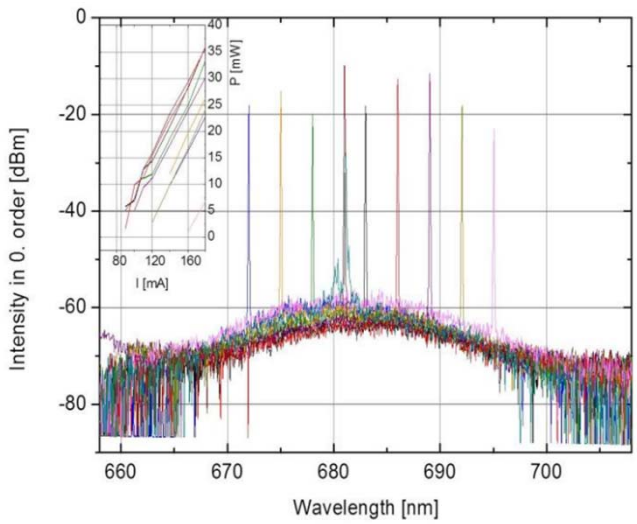
GAIN CHIPS
AR coated Fabry-Perot Laser

Typical Measurement Results



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The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.

Each laser diode will come with an individual test protocol verifying the parameters given in this document.

VISIBLE LASER RADIATION
AVOID EYE OR SKIN EXPOSURE
TO DIRECT OR SCATTERED RADIATION
CLASS 4 LASER PRODUCT
WAVELENGTH 685 nm
MAX. OUTPUT POWER 20 mW

IEC-60825-0

DANGER

VISIBLE LASER RADIATION
AVOID EYE OR SKIN EXPOSURE TO
DIRECT OR SCATTERED RADIATION
GaAs SEMICONDUCTOR LASER DIODE
20 mW MAX OUTPUT AT 685 nm
CLASS IV LASER PRODUCT

Complies with 21 CFR 1040.10 and 1040.40