

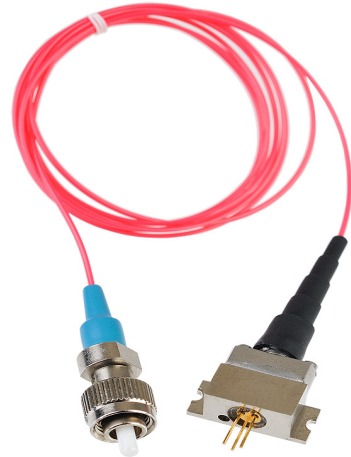
FiberMax520

Fiber Pigtailed 520nm Laser Module



Description

FiberMax520 is a fiber-pigtailed visible green laser module delivering superior single mode performance and stability in a robust, ultra-compact package. The units are optically & thermally stable, reliable, and are ideal for demanding industrial environments and applications. The units are offered with Polarization Maintaining Single Mode or Single Mode fiber, 3mm PVC or metal jacket, or 0.9mm loose-tube jacketing. A range of collimator, wavelength, power level and optical connector options are available.



Optical and Electrical Characteristics

Item	Symbol	Unit	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Test Condition
Optical power	P _o	mW	20	-	-	35	-	-	50	-	-	T _c =25°C
Threshold current	I _{TH}	mA	-	45	75	-	40	70	-	-	100	T _c =25°C
Operating current	I _{OP}	mA	-	150	160	-	200	240	-	-	350	T _c =25°C
Operating voltage	V _{OP}	V	-	7.0	8.0	-	6.4	8.0	4.2	-	6.0	T _c =25°C
Lasing wavelength	λ	nm	520	-	530	515	520	530	510	515	520	T _c =25°C
Monitor current	I _{MON}	mA	-	0.09	-	-	0.11	-	0.2	-	3.0	T _c =25°C
Electrical pin out					B			B			J	

Absolute Maximum Rating

Item	Symbol	Unit	Min	Max	Test Condition
Operating temperature	T _{OPR}	°C	-20/0*	+60	* 50mW LD only
Storage temperature	T _{STG}	°C	-40	+85	
LD reverse voltage	V _R (LD)	V	-	2/5*	T _c =25°C
Soldering Temperature	T _{Solder}	°C	-	260	10 second max

* = 50mW Laser Diode only

Fiber Specs

Single mode fiber w/ 3mm PVC or metal jacket, or 0.9mm loose-tube

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.13	
Mode Field Diameter @ 515nm	MFD	um	3.0	3.5	4.0
Length	L	meter	-	1	-

FiberMax520

Fiber Pigtailed 520nm Laser Module



Polarization maintaining fiber w/ 3mm PVC or metal jacket, or 0.9mm loose-tube

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.12	
Mode Field Diameter @ 515nm	MFD	um	2.8	3.3	3.8
Length	L	meter	-	1	-
Polarization Extinction Ratio	PER	dB	17	20	-

*Note: Polarization and slow axis is aligned to the keyway on the connector.
The keyway is narrow Key for FC/APC connector.*

Collimator Options (SM or PM)

Type	M	N	P	Q
Beam Diameter ($1/e^2$, mm, $\pm 25\%$)	0.8	1.3	1.7	2.5
Divergence (mrad)	<1.2	<0.8	<0.5	<0.4

FiberMax520 PART ORDERING TABLE

FMXL-520-020-Q-FCW

XXX = Wavelength ZZZ = Power Out Q = Cable Type F = Connector C = Collimator W = Pin out

520 = 520nm
020 = 20mW
035 = 35mW
050 = 50mW

T = 900um / SMF
S = 3mm / SMF

0 = None
F = FC/PC

0 = None
M = 0.8 mm

B
J

Example:

FMXL-520-020-P-A0B

520 = 520 nm wavelength

020 = 20 mW output

P = PM Fiber 3mm jacket

A = FC/APC connector

0 = no collimator

B = B type pin out

M = 900um / PMF

P = 3mm / PMF

K = 3mm Armor/SMF

N = 3mm Armor PMF

A = FC/APC

R = ferrule only

N = 1.3 mm

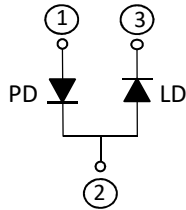
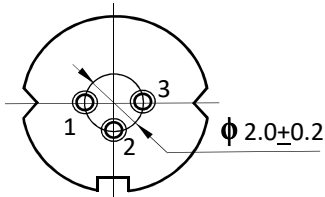
P = 1.9 mm

Q = 3.2 mm

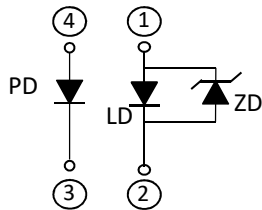
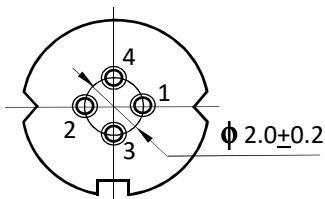
FiberMax520

Fiber Pigtailed 520nm Laser Module

Electrical Pin Out Configurations



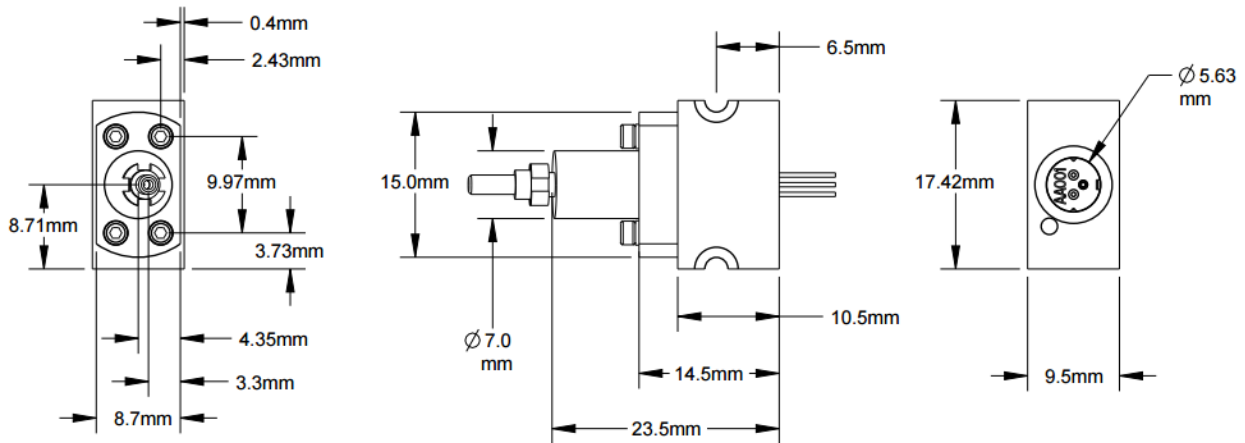
B Pin Out



This device has a Zener Diode (ZD) built in as a protection circuit against static electricity

J Pin Out

Mechanical Outline (dimensions in mm)



Blue Sky Research is able to manufacture additional wavelength FMXL's, and has the capability to use 3.8, 5.6 and/or 9.0 mm TO packages.

FiberMax520

Fiber Pigtailed 520nm Laser Module

**BLUE SKY
RESEARCH**

Handling Care and Precautions for Use of FiberMax™ Modules

1. Absolute Maximum Ratings

Do not exceed, *even momentarily*, the maximum ratings (see page 1, table). When a FiberMax module is driven in excess of its maximum ratings, it can cause at minimum a considerable reduction in reliability, and potentially instantaneous failure.

- FiberMax modules may be damaged by surge currents generated at power on-off operation. Check on the transient characteristics of the power supply to make sure that such surges do not exceed the maximum ratings.
- The maximum ratings are specified for a case temperature of 25°C. Designs should be made to work well within this temperature range. As the case temperature goes up, power dissipation as well as maximum light output power is reduced.

2. Soldering Conditions

Maximum solder-tip temperature is 260°C and soldering time must be within 3.0 seconds. (A minimum solder clearance of 1.6mm should be maintained from the root of the lead.)

3. Prevention of Breakdown due to Static Electricity

FiberMax modules may be adversely affected by static electricity and surge currents and, consequently, cause breakdown of the module and reduction of reliability unless the following precautions are taken:

- Power supplies, installation and measuring equipment should be grounded.
- Anyone working with a FiberMax module should be grounded through high resistance (500 K Ohm - 1M Ohm) by means of a ground strap and wrist band (for example).
- Soldering irons should be grounded to protect laser modules.
- During operation of the FiberMax module, working clothes, hats, and shoes should be static-protected.
- Any container for carriage and storage should be static-protected.
- Avoid using laser modules in an environment where high frequency surge currents may be generated by an inductive electric field (such as a fluorescent lamp). These fields can also cause breakdown or deterioration of the laser module.

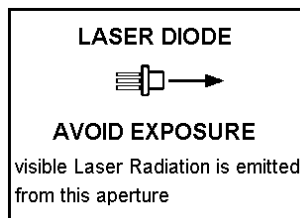
4. Package Handling

- The laser module package should not be cut off, reworked, or deformed. Care should be taken when handling the fiber to avoid kinking it.
- Do not touch the optical connector end face. Any scratch or contamination may result in reduction of optical characteristics.
- Remove small contaminates on the optical connector end face surface carefully using a soft lint free wipe with a small amount of methyl alcohol.

5. Safety

The output light from laser modules is harmful to a human body even if it is invisible. Avoid looking at the output light of a FiberMax module directly, or even indirectly through a lens during operation. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.

Blue Sky Research is an ISO 9001:2008 certified company



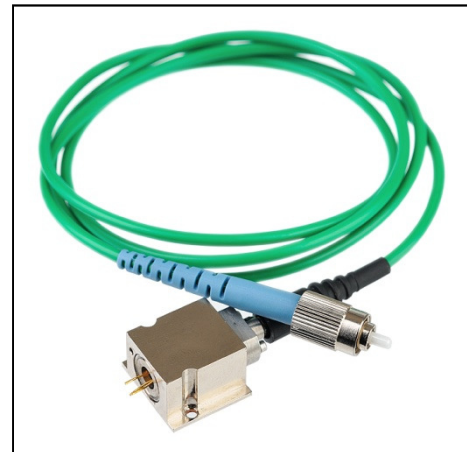
FiberMax532 Green Laser

Fiber Pigtailed 532nm Laser Module



Description

FiberMax532 is a fiber-pigtailed green laser module delivering superior performance for today's demanding electro-optic applications. Based on Blue Sky Research laser packaging technology, the FiberMax532 provides excellent coupling efficiency and stability in a cost effective package. The thermally stable design of the FiberMax532, based on our standard FiberMAX packaging technology, is a proven, stable package with many thousands of lasers operating in demanding applications. The units are offered with Multimode, Polarization Maintaining Single Mode or Single Mode fiber, 3mm or 0.9mm jacketing and a range of collimator options.



Optical and Electrical Characteristics*

Item	Symbol	Unit	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Test Condition
Optical output power	P _o	mW	1.0	2.5	-	5.0	10	-	15	25	-	T _c =25°C
Operating current	I _{OP}	mA	-	-	300	-	-	450	-	-	450	T _c =25°C
Operating voltage	V _{OP}	V	-	-	2.7	-	-	2.7	-	-	2.7	T _c =25°C
Lasing wavelength	λ	nm	531	532	533	531	532	533	531	532	533	T _c =25°C
Monitor current	I _{MON}	mA										T _c =25°C

*Higher power is possible if MM fiber is used.

Absolute Maximum Rating

Item	Symbol	Unit	Min	Max	Test Condition
Operating temperature	T _{OPR}	°C	-	-	**
Storage temperature	T _{STG}	°C	-40	+85	
LD reverse voltage	V _R (LD)	V	-	2	T _c =25°C
PD reverse voltage	V _R (PD)	V	-	30	T _c =25°C

**It is recommended that the FMXL532 be operated with a TE cooler.

Collimator Options

Type	M	N	P
Beam Diameter (1/e ² , mm, ±25%)	0.8	1.3	1.9
Divergence (mrad)	<1.2	<0.8	<0.5



info@amstechnologies.com
www.amstechnologies-webshop.com



FiberMax532 Green Laser

Fiber Pigtailed 532nm Laser Module

Fiber Specs

Single mode fiber w/ 3mm or 900um protective jacket

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA			0.13	
Mode Field Diameter @ 532nm	MFD	um	3.5	4.0	4.5
Length	L	meter	-	1	-

Polarization maintaining fiber w/ 3mm or 900um protective jacket

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA	-	-	0.11	-
Mode Field Diameter @ 532nm	MFD	um	4.5	5.0	5.5
Length	L	meter	-	1	-
Polarization Extinction Ratio	PER	dB	17	20	-

Note: Polarization and slow axis is aligned to the keyway on the connector.

The keyway is narrow Key for FC/APC connector.

Multimode fiber w/ 3mm or 900um protective jacket

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA	-	-	0.22	-
Core Diameter	MFD	um	50	50	100
Length	L	meter	-	1	-

Ordering Information

FMXL-532-ZZZ-Q-FCW

532 = Wavelength

532 = 532nm

Example:

FMXL-532-010-P-A0B

532 = 532nm wavelength

010 = 10 mW output

P = PM Fiber 3mm jacket

A = FC/APC connector

0 = no collimator

B = B type pin out

ZZZ = Power Out

005 = 5mW

010 = 10mW

025 = 25mW

Q = Cable Type

T = 900um / SMF

S = 3mm / SMF

M = 900um / PMF

P = 3mm / PMF

A = 3mm/62.5 MMF

B = 3mm/50 MMF

E = 900um/SMF28

F = 3mm/SMF28

K = 3mm Armor/SMF

N = 3mm Armor/PMF

Y = 3mm/100 MMF

Z = 900um/100 MMF

F = Connector

0 = No connector

S = SC/PC

G = SC/APC

F = FC/PC

A = FC/APC

R = ferrule only

C = Collimator

0 = None

M = 0.8 mm

N = 1.3 mm

P = 1.9 mm

W = Pin out

B

Please contact Sales@BlueSkyResearch.com for more ordering information or assistance with you specific technical needs.

FiberMax532 Green Laser

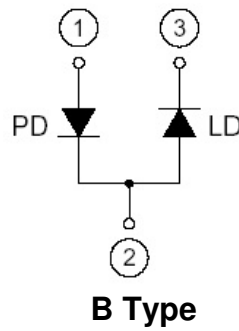
Fiber Pigtailed 532nm Laser Module



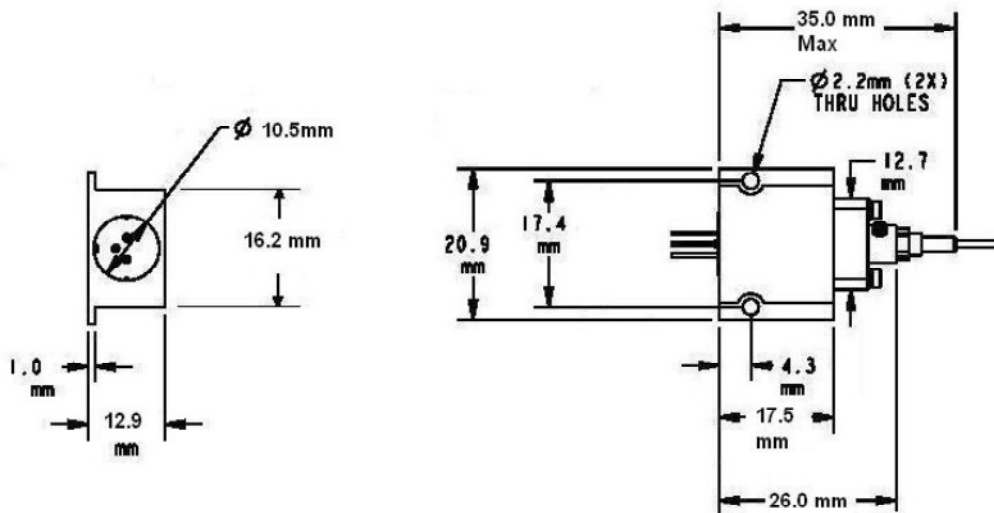
Each purchased FiberMax is provided with test data. Please refer to this data before using the FiberMax.

Shipping Data Includes: I_{OP} , I_{TH} , I_{MON} at P_o @ 25C, L-I curve, V-I curve, and L- I_{MON} curve to P_o

Electrical Pin Out Configurations Available



Mechanical Outline



FiberMax532 Green Laser

Fiber Pigtailed 532nm Laser Module

Handling Care and Precautions for Use of FiberMax™ Modules

1. Absolute Maximum Ratings

Do not exceed, *even momentarily*, the maximum ratings (see page 1, table). When a FiberMax module is driven in excess of its maximum ratings, it can cause at minimum a considerable reduction in reliability, and potentially instantaneous failure.

- FiberMax modules may be damaged by surge currents generated at power on-off operation. Check on the transient characteristics of the power supply to make sure that such surges do not exceed the maximum ratings.
- The maximum ratings are specified for a case temperature of 25°C. Designs should be made to work well within this temperature range. As the case temperature goes up, power dissipation as well as maximum light output power is reduced.

2. Soldering Conditions

Maximum solder-tip temperature is 260°C and soldering time must be within 3.0 seconds. A minimum solder clearance of 1.6mm should be maintained from the root of the lead.

3. Prevention of Breakdown due to Static Electricity

FiberMax modules may be adversely affected by static electricity and surge currents and, consequently, cause breakdown of the module and reduction of reliability unless the following precautions are taken:

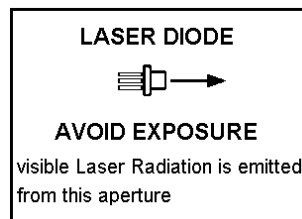
- Power supplies, installation and measuring equipment should be grounded. A noise filter or noise-cut transformer should be provided on any power supply inputs.
- Anyone working with a FiberMax module should be grounded through high resistance (500 K Ohm - 1M Ohm) by means of a ground strap and wrist band (for example).
- Soldering irons should be grounded to protect laser modules from voltage leaks.
- During operation of the FiberMax module, working clothes, hats, and shoes should be static-protected. Cotton-based clothing is preferred.
- Any container for carriage and storage should be static-protected.
- Avoid using laser modules in an environment where high frequency surge currents may be generated by an inductive electric field (such as a fluorescent lamp). These fields can also cause breakdown or deterioration of the laser module.

4. Package Handling

- The laser module package should not be cut off, reworked, or deformed. Care should be taken when handling the fiber to avoid kinking it.
- Do not touch the ferrule end. Any scratch or contamination may result in reduction of optical characteristics.
- Remove small contaminants on the ferrule surface carefully using a soft cotton tip stick with a small amount of methyl alcohol.

5. Safety

The output light from laser modules is harmful to a human body even if it is invisible. Avoid looking at the output light of a FiberMax module directly, or even indirectly through a lens during operation. Observance of operation should be through an infrared TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.



info@amstechnologies.com
www.amstechnologies-webshop.com



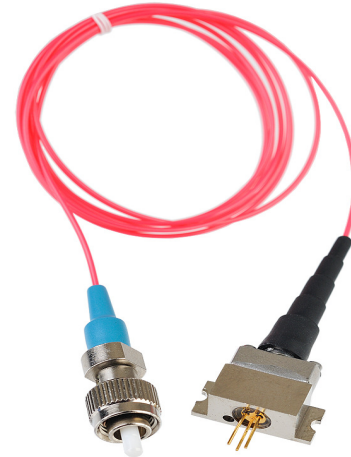
FiberMax635

Low Power Fiber Pigtailed 635nm Laser Module



Description

FiberMax635 is a fiber-pigtailed red laser module delivering superior performance for today's demanding electro-optic applications. Based on Blue Sky Research laser packaging technology, the FiberMax635 provides excellent coupling efficiency and stability in a cost effective package. The thermally stable design of the FiberMax635, based on our standard FiberMAX packaging technology, is a proven, stable package with many thousands of lasers operating in demanding applications. The units are offered with Multimode, Polarization Maintaining Single Mode or Single Mode fiber, 3mm or 0.9mm jacketing and a range of collimator options.



Optical and Electrical Characteristics

Item	Symbol	Unit	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Test Condition
Test Conditions												
Optical power	P _o	mW	1.5	1.8	-	5.0	6.0	-	17.5	20.0	-	T _c =25°C
Threshold current	I _{TH}	mA	-	25	-	-	35	50	30	45	65	T _c =25°C
Operating current	I _{OP}	mA	-	30	-	-	55	75	-	95	130	T _c =25°C
Operating voltage	V _{OP}	V	-	-	2.7	-	2.2	2.4	-	2.3	2.8	T _c =25°C
Lasing wavelength	λ	nm	630	635	640	635	637	645	630	638	642	T _c =25°C
Monitor current	I _{MON}	mA	-	0.15	-	0.05	0.15	0.3	0.05	0.15	0.25	T _c =25°C
Electrical pin out			A, B, E			A, B, E			B			

Absolute Maximum Rating

Item	Symbol	Unit	Min	Max	Test Condition
Operating temperature	T _{OPR}	°C	-10	+50	
Storage temperature	T _{STG}	°C	-40	+85	
LD reverse voltage	V _R (LD)	V	-	2	T _c =25°C
PD reverse voltage	V _R (PD)	V	-	30	T _c =25°C

Fiber Specs

Single mode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.13	
Mode Field Diameter @ 630nm	MFD	um	3.5	4.0	4.5
Length	L	meter	-	1	-

FiberMax635

Fiber Pigtailed 635nm Laser Module

Polarization maintaining fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.11	
Mode Field Diameter @ 630nm	MFD	um	4.5	5.0	5.5
Length	L	meter	-	1	-
Polarization Extinction Ratio	PER	dB	17	20	-

*Note: Polarization and slow axis is aligned to the keyway on the connector.
The keyway is narrow Key for FC/APC connector.*

Multimode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.22	
Core Diameter	MFD	um	50	50	100
Length	L	meter	-	1	-

Collimator Options (SM or PM)

Type	M	N	P	Q
Beam Diameter (1/e ² , mm, ±25%)	0.8	1.3	1.9	3.2
Divergence (mrad)	<1.2	<0.8	<0.5	<0.4

FiberMax635 PART ORDERING TABLE

FMXL-635-ZZZ-Q-FCW

XXX = Wavelength
635 = 635nm

ZZZ = Power Out
001 = 1mW
005 = 5mW
020 = 20mW

Q = Cable Type
T = 900um / SMF
S = 3mm / SMF
M = 900um / PMF
P = 3mm / PMF
A = 3mm/62.5 MMF
B = 3mm/50 MMF
E = 900um/SMF28
F = 3mm/SMF28
K = 3mm Armor/SMF
N = 3mm Armor/PMF
Y = 3mm/100 MMF
Z = 900um/100 MMF

F = Connector
0 = No connector
S = SC/PC
G = SC/APC
F = FC/PC
A = FC/APC
R = ferrule only

C = Collimator
0 = None
M = 0.8 mm
N = 1.3 mm
P = 1.9 mm
Q = 3.2 mm

W = Pin out
A
B
E

Example:

FMXL-635-020-P-A0B
635 = 635 nm wavelength
020 = 20 mW output
P = PM Fiber 3mm jacket
A = FC/APC connector
0 = no collimator
B = B type pin out

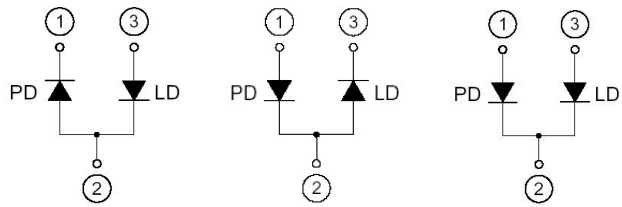
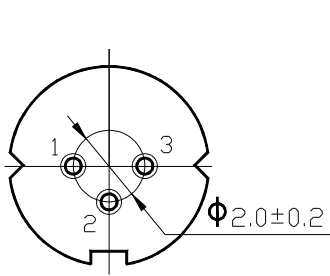
FiberMax635

Low Power Fiber Pigtailed 635nm Laser Module



Shipping Data Includes: I_{OP} , I_{TH} , I_{MON} at P_o @ 25C, L-I curve, V-I curve, and L- I_{MON} curve to P_o
Each purchased FiberMax is provided with test data.
Please refer to this data before using the FiberMax.

Electrical Pin Out Configurations Available

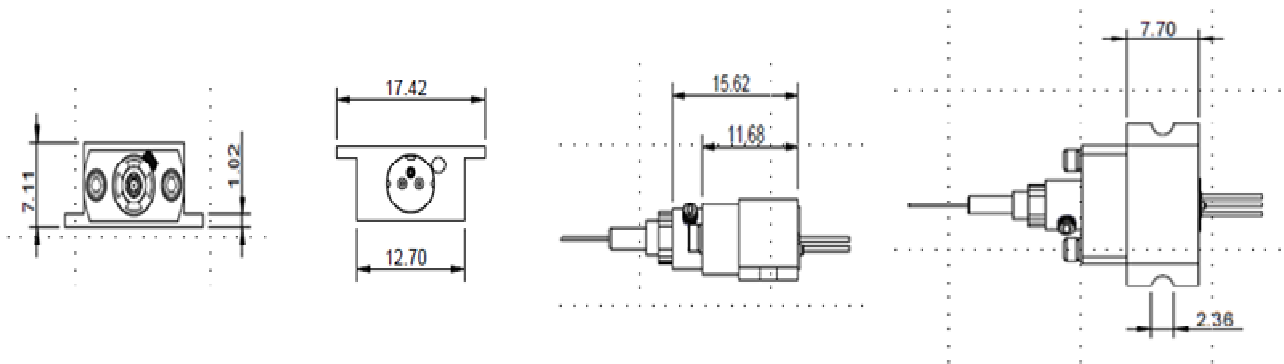


A Pin Out

B Pin Out

E Pin Out

Mechanical Outline (dimensions in mm)



Blue Sky Research is able to manufacture additional wavelength FMXL's, and has the capability to use 3.8, 5.6 and/or 9.0 mm TO packages.

FiberMax635

Fiber Pigtailed 635nm Laser Module

Handling Care and Precautions for Use of FiberMax™ Modules

1. Absolute Maximum Ratings

Do not exceed, *even momentarily*, the maximum ratings (see page 1, table). When a FiberMax module is driven in excess of its maximum ratings, it can cause at minimum a considerable reduction in reliability, and potentially instantaneous failure.

- FiberMax modules may be damaged by surge currents generated at power on-off operation. Check on the transient characteristics of the power supply to make sure that such surges do not exceed the maximum ratings.
- The maximum ratings are specified for a case temperature of 25°C. Designs should be made to work well within this temperature range. As the case temperature goes up, power dissipation as well as maximum light output power is reduced.

2. Soldering Conditions

Maximum solder-tip temperature is 260°C and soldering time must be within 3.0 seconds. A minimum solder clearance of 1.6mm should be maintained from the root of the lead.

3. Prevention of Breakdown due to Static Electricity

FiberMax modules may be adversely affected by static electricity and surge currents and, consequently, cause breakdown of the module and reduction of reliability unless the following precautions are taken:

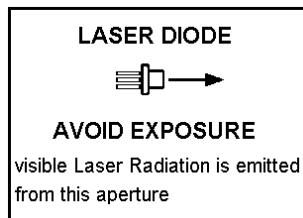
- Power supplies, installation and measuring equipment should be grounded. A noise filter or noise-cut transformer should be provided on any power supply inputs.
- Anyone working with a FiberMax module should be grounded through high resistance (500 K Ohm - 1M Ohm) by means of a ground strap and wrist band (for example).
- Soldering irons should be grounded to protect laser modules from voltage leaks.
- During operation of the FiberMax module, working clothes, hats, and shoes should be static-protected. Cotton-based clothing is preferred.
- Any container for carriage and storage should be static-protected.
- Avoid using laser modules in an environment where high frequency surge currents may be generated by an inductive electric field (such as a fluorescent lamp). These fields can also cause breakdown or deterioration of the laser module.

4. Package Handling

- The laser module package should not be cut off, reworked, or deformed. Care should be taken when handling the fiber to avoid kinking it.
- Do not touch the ferrule end. Any scratch or contamination may result in reduction of optical characteristics.
- Remove small contaminants on the ferrule surface carefully using a soft cotton tip stick with a small amount of methyl alcohol.

5. Safety

The output light from laser modules is harmful to a human body even if it is invisible. Avoid looking at the output light of a FiberMax module directly, or even indirectly through a lens during operation. Observance of operation should be through an infrared TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.



info@amstechnologies.com
www.amstechnologies-webshop.com



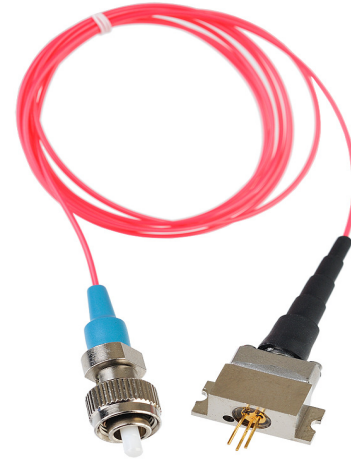
FiberMax635

High Power Fiber Pigtailed 635nm Laser Module



Description

FiberMax635 is a fiber-pigtailed red laser module delivering superior performance for today's demanding electro-optic applications. Based on Blue Sky Research laser packaging technology, the FiberMax635 provides excellent coupling efficiency and stability in a cost effective package. The thermally stable design of the FiberMax635, based on our standard FiberMAX packaging technology, is a proven, stable package with many thousands of lasers operating in demanding applications. The units are offered with Multimode, Polarization Maintaining Single Mode or Single Mode fiber, 3mm or 0.9mm jacketing and a range of collimator options.



Optical and Electrical Characteristics

Item	Symbol	Unit	Min	Typ	Max	Min	Typ	Max	Test Condition
Test Conditions									
Optical power	P _O	mW	50	60	-	75	80	-	T _c =25°C
Threshold current	I _{TH}	mA	35	50	65	-	60	90	T _c =25°C
Operating current	I _{OP}	mA	100	150	200	-	250	320	T _c =25°C
Operating voltage	V _{OP}	V	2.4	2.7	3.0	-	2.8	3.3	T _c =25°C
Lasing wavelength	λ	nm	632	638	644	632	638	643	T _c =25°C
Monitor current	I _{MON}	mA	-	-	-	-	-	-	T _c =25°C
Electrical pin out				F			F		

Absolute Maximum Rating

Item	Symbol	Unit	Min	Max	Test Condition
Operating temperature	T _{OPR}	°C	-10	+50	
Storage temperature	T _{STG}	°C	-40	+85	
LD reverse voltage	V _R (LD)	V	-	2	T _c =25°C
PD reverse voltage	V _R (PD)	V	-	30	T _c =25°C

Fiber Specs

Single mode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.13	
Mode Field Diameter @ 630nm	MFD	um	3.5	4.0	4.5
Length	L	meter	-	1	-

FiberMax635

Fiber Pigtailed 635nm Laser Module

Polarization maintaining fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.11	
Mode Field Diameter @ 630nm	MFD	um	4.5	5.0	5.5
Length	L	meter	-	1	-
Polarization Extinction Ratio	PER	dB	17	20	-

*Note: Polarization and slow axis is aligned to the keyway on the connector.
The keyway is narrow Key for FC/APC connector.*

Multimode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.22	
Core Diameter	MFD	um	50	50	100
Length	L	meter	-	1	-

Collimator Options (SM or PM)

Type	M	N	P	Q
Beam Diameter (1/e ² , mm, ±25%)	0.8	1.3	1.9	3.2
Divergence (mrad)	<1.2	<0.8	<0.5	<0.4

FiberMax635 PART ORDERING TABLE

FMXL-635-ZZZ-Q-FCW

XXX = Wavelength

635 = 635nm

Example:

FMXL-635-060-P-A0B

635 = 635 nm wavelength

060 = 60 mW output

P = PM Fiber 3mm jacket

A = FC/APC connector

0 = no collimator

B = B type pin out

ZZZ = Power Out

060 = 60mW

080 = 80mW

Q = Cable Type

T = 900um / SMF

S = 3mm / SMF

M = 900um / PMF

P = 3mm / PMF

A = 3mm/62.5 MMF

B = 3mm/50 MMF

E = 900um/SMF28

F = 3mm/SMF28

K = 3mm Armor/SMF

N = 3mm Armor/PMF

Y = 3mm/100 MMF

Z = 900um/100 MMF

F = Connector

0 = No connector

S = SC/PC

G = SC/APC

F = FC/PC

A = FC/APC

R = ferrule only

C = Collimator

0 = None

M = 0.8 mm

N = 1.3 mm

P = 1.9 mm

Q = 3.2 mm

W = Pin out

F

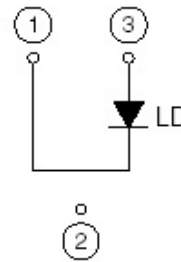
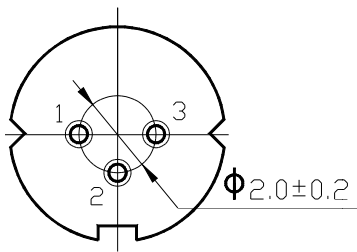
FiberMax635

High Power Fiber Pigtailed 635nm Laser Module



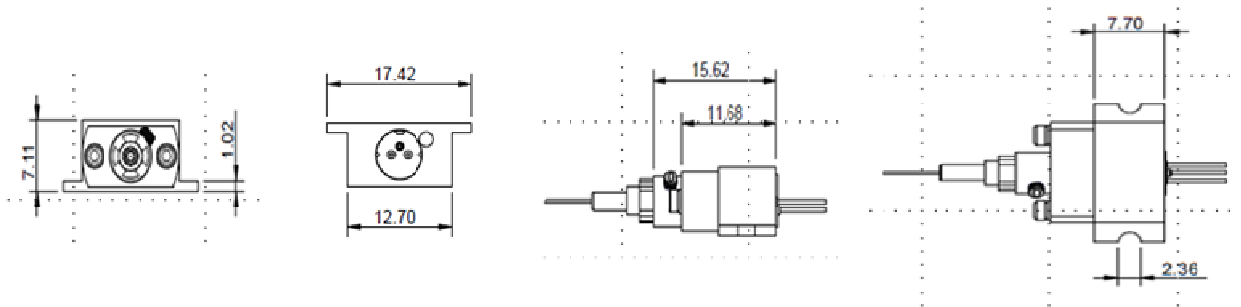
Shipping Data Includes: I_{OP} , I_{TH} , I_{MON} at P_o @ 25C, L-I curve, V-I curve, and L- I_{MON} curve to P_o
Each purchased FiberMax is provided with test data.
Please refer to this data before using the FiberMax.

Electrical Pin Out Configurations Available



F Pin Out

Mechanical Outline (Dimensions in mm)



Blue Sky Research is able to manufacture additional wavelength FMXL's, and has the capability to use 3.8, 5.6 and/or 9.0 mm TO packages.

FiberMax635

Fiber Pigtailed 635nm Laser Module

Handling Care and Precautions for Use of FiberMax™ Modules

1. Absolute Maximum Ratings

Do not exceed, *even momentarily*, the maximum ratings (see page 1, table). When a FiberMax module is driven in excess of its maximum ratings, it can cause at minimum a considerable reduction in reliability, and potentially instantaneous failure.

- FiberMax modules may be damaged by surge currents generated at power on-off operation. Check on the transient characteristics of the power supply to make sure that such surges do not exceed the maximum ratings.
- The maximum ratings are specified for a case temperature of 25°C. Designs should be made to work well within this temperature range. As the case temperature goes up, power dissipation as well as maximum light output power is reduced.

2. Soldering Conditions

Maximum solder-tip temperature is 260°C and soldering time must be within 3.0 seconds. A minimum solder clearance of 1.6mm should be maintained from the root of the lead.

3. Prevention of Breakdown due to Static Electricity

FiberMax modules may be adversely affected by static electricity and surge currents and, consequently, cause breakdown of the module and reduction of reliability unless the following precautions are taken:

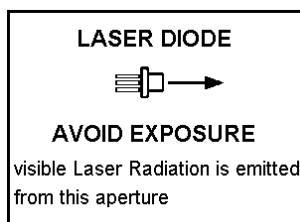
- Power supplies, installation and measuring equipment should be grounded. A noise filter or noise-cut transformer should be provided on any power supply inputs.
- Anyone working with a FiberMax module should be grounded through high resistance (500 K Ohm - 1M Ohm) by means of a ground strap and wrist band (for example).
- Soldering irons should be grounded to protect laser modules from voltage leaks.
- During operation of the FiberMax module, working clothes, hats, and shoes should be static-protected. Cotton-based clothing is preferred.
- Any container for carriage and storage should be static-protected.
- Avoid using laser modules in an environment where high frequency surge currents may be generated by an inductive electric field (such as a fluorescent lamp). These fields can also cause breakdown or deterioration of the laser module.

4. Package Handling

- The laser module package should not be cut off, reworked, or deformed. Care should be taken when handling the fiber to avoid kinking it.
- Do not touch the ferrule end. Any scratch or contamination may result in reduction of optical characteristics.
- Remove small contaminates on the ferrule surface carefully using a soft cotton tip stick with a small amount of methyl alcohol.

5. Safety

The output light from laser modules is harmful to a human body even if it is invisible. Avoid looking at the output light of a FiberMax module directly, or even indirectly through a lens during operation. Observance of operation should be through an infrared TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.



info@amstechnologies.com
www.amstechnologies-webshop.com



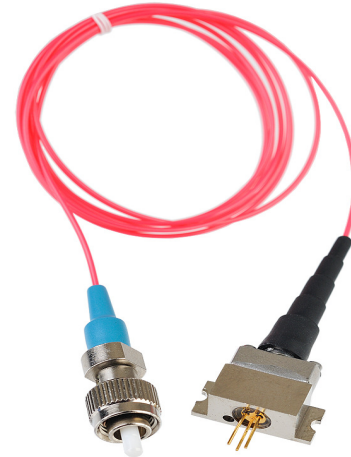
FiberMax658

Fiber Pigtailed 658nm Laser Module



Description

FiberMax658 is a fiber-pigtailed red laser module delivering superior performance for today's demanding electro-optic applications. Based on Blue Sky Research laser packaging technology, the FiberMax658 provides excellent coupling efficiency and stability in a cost effective package. The thermally stable design of the FiberMax658, based on our standard FiberMAX packaging technology, is a proven, stable package with many thousands of lasers operating in demanding applications. The units are offered with Multimode, Polarization Maintaining Single Mode or Single Mode fiber, 3mm or 0.9mm jacketing and a range of collimator options.



Optical and Electrical Characteristics

Item	Symbol	Unit	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Test Condition
Test Conditions															
Optical power	P _o	mW	1.5	2	-	5.0	6.0	-	17.5	20.0	-	75	80	-	T _c =25°C
Threshold current	I _{TH}	mA	-	20	25	-	40	50	30	45	70	-	55	75	T _c =25°C
Operating current	I _{OP}	mA	-	27	35	-	60	80	-	80	120	-	170	210	T _c =25°C
Operating voltage	V _{OP}	V	-	2.2	2.5	-	2.3	2.6	2.1	2.6	3.0	-	2.45	3.0	T _c =25°C
Lasing wavelength	λ	nm	650	655	660	645	655	660	645	658	665	652	660	664	T _c =25°C
Monitor current	I _{MON}	mA	0.1	0.15	0.3	0.1	0.2	0.5	0.05	0.3	1.5	-	0.15	-	T _c =25°C
Electrical pin out			A, B, E			A, B, E			A			A or B			

Absolute Maximum Rating

Item	Symbol	Unit	Min	Max	Test Condition
Operating temperature	T _{OPR}	°C	-10	+50	
Storage temperature	T _{STG}	°C	-40	+85	
LD reverse voltage	V _R (LD)	V	-	2	T _c =25°C
PD reverse voltage	V _R (PD)	V	-	30	T _c =25°C

Fiber Specifications

Single mode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.13	
Mode Field Diameter @ 630nm	MFD	um	3.5	4.0	4.5
Length	L	meter	-	1	-

FiberMax658

Fiber Pigtailed 658nm Laser Module

Polarization maintaining fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.11	
Mode Field Diameter @ 630nm	MFD	um	4.5	5.0	5.5
Length	L	meter	-	1	-
Polarization Extinction Ratio	PER	dB	17	20	-

Note: Polarization and slow axis is aligned to the keyway on the connector.

The keyway is narrow Key for FC/APC connector.

Multimode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.22	
Core Diameter	MFD	um	50	50	100
Length	L	meter	-	1	-

Collimator Options (SM or PM)

Type	M	N	P	Q
Beam Diameter ($1/e^2$, mm, $\pm 25\%$)	0.8	1.3	1.9	3.2
Divergence (mrad)	<1.2	<0.8	<0.5	<0.4

FiberMax658 PART ORDERING TABLE

FMXL-658-ZZZ-Q-FCW

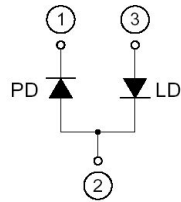
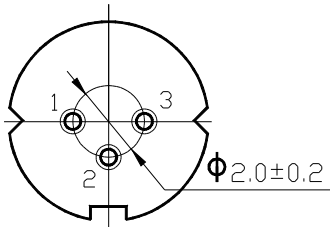
XXX = Wavelength	ZZZ = Power Out	Q = Cable Type	F = Connector	C = Collimator	W = Pin out
658 = 658nm	001 = 1mW 006 = 6 mW 020 = 20 mW	T = 900um / SMF	0 = No connector	0 = None	A
Example:	080 = 80 mW	S = 3mm / SMF	S = SC/PC	M = 0.8 mm	B
FMXL-658-020-P-A0B		M = 900um / PMF	G = SC/APC	N = 1.3 mm	E
658 = 658 nm wavelength		P = 3mm / PMF	F = FC/PC	P = 1.9 mm	
020 = 20 mW output		A = 3mm/62.5 MMF	A = FC/APC	Q = 3.2 mm	
P = PM Fiber 3mm jacket		B = 3mm/50 MMF	R = ferrule only		
A = FC/APC connector		E = 900um/SMF28			
0 = no collimator		F = 3mm/SMF28			
B = B type pin out		K = 3mm Armor/SMF			
		N = 3mm Armor/PMF			
		Y = 3mm/100 MMF			
		Z = 900um/100 MMF			

FiberMax658

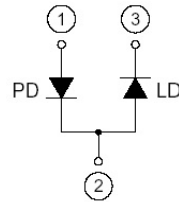
Fiber Pigtailed 658nm Laser Module



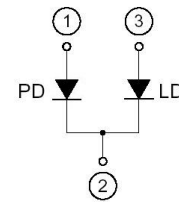
Electrical Pin Out Configurations Available



A Pin Out

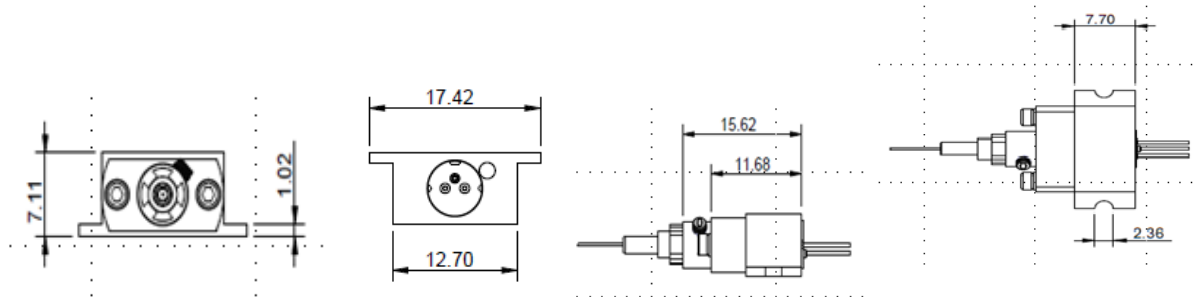


B Pin Out



E Pin Out

Mechanical Package



Shipping Data Includes:

I_{OP} , I_{TH} , I_{MON} at $P_o @ 25C$,
L-I curve, V-I curve, and L- I_{MON} curve to P_o

Each purchased FiberMax is provided with test data.

Please refer to this data before using the FiberMax.

Handling Care and Precautions for Use of FiberMax™ Modules

FiberMax658

Fiber Pigtailed 658nm Laser Module

1. Absolute Maximum Ratings

Do not exceed, *even momentarily*, the maximum ratings (see page 1, table). When a FiberMax module is driven in excess of its maximum ratings, it can cause at minimum a considerable reduction in reliability, and potentially instantaneous failure.

- a. FiberMax modules may be damaged by surge currents generated at power on-off operation. Check on the transient characteristics of the power supply to make sure that such surges do not exceed the maximum ratings.
- b. The maximum ratings are specified for a case temperature of 25°C. Designs should be made to work well within this temperature range. As the case temperature goes up, power dissipation as well as maximum light output power is reduced.

2. Soldering Conditions

Maximum solder-tip temperature is 260°C and soldering time must be within 3.0 seconds. A minimum solder clearance of 1.6mm should be maintained from the root of the lead.

3. Prevention of Breakdown due to Static Electricity

FiberMax modules may be adversely affected by static electricity and surge currents and, consequently, cause breakdown of the module and reduction of reliability unless the following precautions are taken:

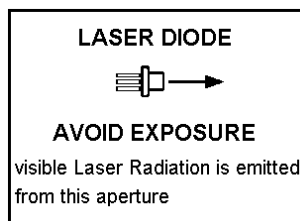
- a. Power supplies, installation and measuring equipment should be grounded. A noise filter or noise-cut transformer should be provided on any power supply inputs.
- b. Anyone working with a FiberMax module should be grounded through high resistance (500 K Ohm - 1M Ohm) by means of a ground strap and wrist band (for example).
- c. Soldering irons should be grounded to protect laser modules from voltage leaks.
- d. During operation of the FiberMax module, working clothes, hats, and shoes should be static-protected. Cotton-based clothing is preferred.
- e. Any container for carriage and storage should be static-protected.
- f. Avoid using laser modules in an environment where high frequency surge currents may be generated by an inductive electric field (such as a fluorescent lamp). These fields can also cause breakdown or deterioration of the laser module.

4. Package Handling

- a. The laser module package should not be cut off, reworked, or deformed. Care should be taken when handling the fiber to avoid kinking it.
- b. Do not touch the ferrule end. Any scratch or contamination may result in reduction of optical characteristics.
- c. Remove small contaminates on the ferrule surface carefully using a soft cotton tip stick with a small amount of methyl alcohol.

5. Safety

The output light from laser modules is harmful to a human body even if it is invisible. Avoid looking at the output light of a FiberMax module directly, or even indirectly through a lens during operation. Observance of operation should be through an infrared TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.



info@amstechnologies.com
www.amstechnologies-webshop.com



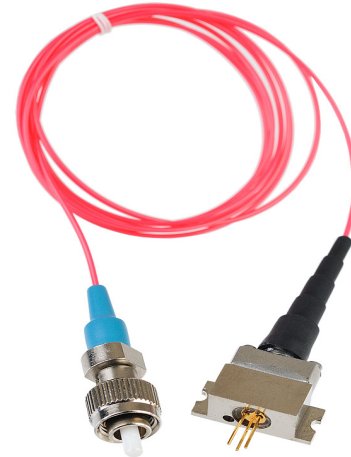
FiberMax690

Fiber Pigtailed 690nm Laser Module



Description

FiberMax690 is a fiber-pigtailed red laser module delivering superior performance for today's demanding electro-optic applications. Based on Blue Sky Research laser packaging technology, the FiberMax690 provides excellent coupling efficiency and stability in a cost effective package. The thermally stable design of the FiberMax690, based on our standard FiberMAX packaging technology, is a proven, stable package with many thousands of lasers operating in demanding applications. The units are offered with Multimode, Polarization Maintaining Single Mode or Single Mode fiber, 3mm or 0.9mm jacketing and a range of collimator options.



Optical and Electrical Characteristics

Item	Symbol	Unit	Min	Typ	Max	Min	Typ	Max	Test Condition
Test Conditions									
Optical power	P _o	mW	17.5	20	-	25	30	-	T _c =25°C
Threshold current	I _{TH}	mA	30	45	70	-	30	60	T _c =25°C
Operating current	I _{OP}	mA	-	85	130	-	75	120	T _c =25°C
Operating voltage	V _{OP}	V	2.1	2.5	2.8	-	2.3	3.0	T _c =25°C
Lasing wavelength	λ	nm	680	690	695	675	685	695	T _c =25°C
Monitor current	I _{MON}	mA	0.02	0.1	0.45	-	0.15	0.35	T _c =25°C
Electrical pin out			A			A, B			

Absolute Maximum Rating

Item	Symbol	Unit	Min	Max	Test Condition
Operating temperature	T _{OPR}	°C	-10	+50	
Storage temperature	T _{STG}	°C	-40	+85	
LD reverse voltage	V _R (LD)	V	-	2	T _c =25°C
PD reverse voltage	V _R (PD)	V	-	30	T _c =25°C

Fiber Specs

Single mode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.13	
Mode Field Diameter @ 630nm	MFD	um	3.5	4.0	4.5
Length	L	meter	-	1	-

FiberMax690

Fiber Pigtailed 690nm Laser Module

Polarization maintaining fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.11	
Mode Field Diameter @ 630nm	MFD	um	4.5	5.0	5.5
Length	L	meter	-	1	-
Polarization Extinction Ratio	PER	dB	17	20	-

Note: Polarization and slow axis is aligned to the keyway on the connector.

The keyway is narrow Key for FC/APC connector.

Multimode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.22	
Core Diameter	MFD	um	50	50	100
Length	L	meter	-	1	-

Collimator Options (SM or PM)

Type	M	N	P	Q
Beam Diameter ($1/e^2$, mm, $\pm 25\%$)	0.8	1.3	1.9	3.2
Divergence (mrad)	<1.2	<0.8	<0.5	<0.4

FiberMax690 PART ORDERING TABLE

FMXL-690-ZZZ-Q-FCW

XXX = Wavelength	ZZZ = Power Out	Q = Cable Type	F = Connector	C = Collimator	W = Pin out
690 = 690nm	020 = 20mW 030 = 30mW	T = 900um / SMF S = 3mm / SMF M = 900um / PMF P = 3mm / PMF A = 3mm/62.5 MMF B = 3mm/50 MMF E = 900um/SMF28 F = 3mm/SMF28 K = 3mm Armor/SMF N = 3mm Armor/PMF Y = 3mm/100 MMF Z = 900um/100 MMF	0 = No connector S = SC/PC G = SC/APC F = FC/PC A = FC/APC R = ferrule only	0 = None M = 0.8 mm N = 1.3 mm P = 1.9 mm Q = 3.2 mm	A B E
Example:					
FMXL-690-020-P-A0B					
690 = 690 nm wavelength					
020 = 20 mW output					
P = PM Fiber 3mm jacket					
A = FC/APC connector					
0 = no collimator					
B = B type pin out					

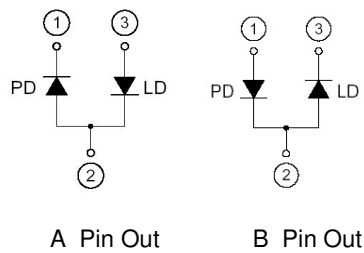
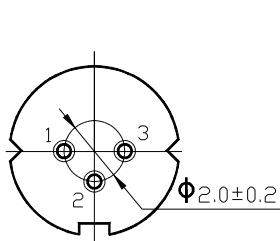
FiberMax690

Fiber Pigtailed 690nm Laser Module

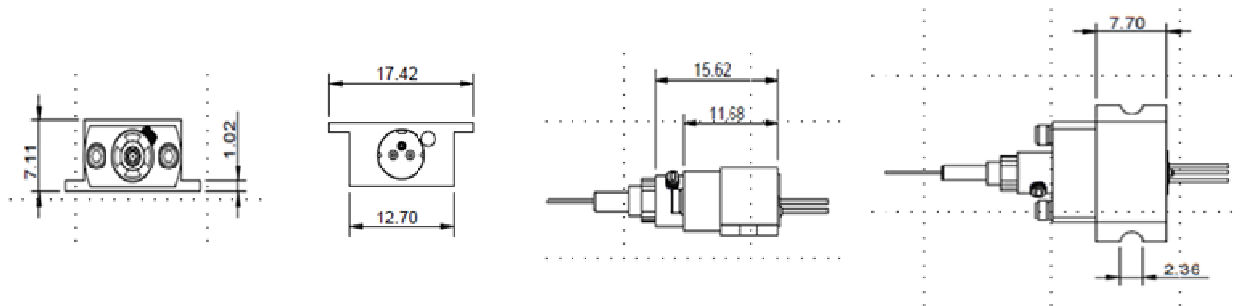


Shipping Data Includes: I_{OP} , I_{TH} , I_{MON} at P_o @ 25C, L-I curve, V-I curve, and L- I_{MON} curve to P_o
Each purchased FiberMax is provided with test data.
Please refer to this data before using the FiberMax.

Electrical Pin Out Configurations Available



Mechanical Outline (dimensions in mm)



Blue Sky Research is able to manufacture additional wavelength FMXL's, and has the capability to use 3.8, 5.6 and/or 9.0 mm TO packages.

FiberMax690

Fiber Pigtailed 690nm Laser Module

Handling Care and Precautions for Use of FiberMax™ Modules

1. Absolute Maximum Ratings

Do not exceed, *even momentarily*, the maximum ratings (see page 1, table). When a FiberMax module is driven in excess of its maximum ratings, it can cause at minimum a considerable reduction in reliability, and potentially instantaneous failure.

- FiberMax modules may be damaged by surge currents generated at power on-off operation. Check on the transient characteristics of the power supply to make sure that such surges do not exceed the maximum ratings.
- The maximum ratings are specified for a case temperature of 25°C. Designs should be made to work well within this temperature range. As the case temperature goes up, power dissipation as well as maximum light output power is reduced.

2. Soldering Conditions

Maximum solder-tip temperature is 260°C and soldering time must be within 3.0 seconds. A minimum solder clearance of 1.6mm should be maintained from the root of the lead.

3. Prevention of Breakdown due to Static Electricity

FiberMax modules may be adversely affected by static electricity and surge currents and, consequently, cause breakdown of the module and reduction of reliability unless the following precautions are taken:

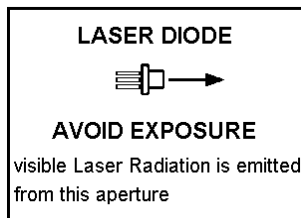
- Power supplies, installation and measuring equipment should be grounded. A noise filter or noise-cut transformer should be provided on any power supply inputs.
- Anyone working with a FiberMax module should be grounded through high resistance (500 K Ohm - 1M Ohm) by means of a ground strap and wrist band (for example).
- Soldering irons should be grounded to protect laser modules from voltage leaks.
- During operation of the FiberMax module, working clothes, hats, and shoes should be static-protected. Cotton-based clothing is preferred.
- Any container for carriage and storage should be static-protected.
- Avoid using laser modules in an environment where high frequency surge currents may be generated by an inductive electric field (such as a fluorescent lamp). These fields can also cause breakdown or deterioration of the laser module.

4. Package Handling

- The laser module package should not be cut off, reworked, or deformed. Care should be taken when handling the fiber to avoid kinking it.
- Do not touch the ferrule end. Any scratch or contamination may result in reduction of optical characteristics.
- Remove small contaminates on the ferrule surface carefully using a soft cotton tip stick with a small amount of methyl alcohol.

5. Safety

The output light from laser modules is harmful to a human body even if it is invisible. Avoid looking at the output light of a FiberMax module directly, or even indirectly through a lens during operation. Observance of operation should be through an infrared TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.



info@amstechnologies.com
www.amstechnologies-webshop.com



FiberMax785

Fiber Pigtailed 785nm Laser Module



Description

FiberMax785 is a fiber-pigtailed red laser module delivering superior performance for today's demanding electro-optic applications. Based on Blue Sky Research laser packaging technology, the FiberMax785 provides excellent coupling efficiency and stability in a cost effective package. The thermally stable design of the FiberMax785, based on our standard FiberMAX packaging technology, is a proven, stable package with many thousands of lasers operating in demanding applications. The units are offered with Multimode, Polarization Maintaining Single Mode or Single Mode fiber, 3mm or 0.9mm jacketing and a range of collimator options.



Optical and Electrical Characteristics*

Item	Symbol	Unit	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Test Condition
Test Conditions												
Optical power	P _O	mW	-	5	-	-	10	-	-	50	-	T _c =25°C
Threshold current	I _{TH}	mA	8	12	25	-	15	25	-	35	55	T _c =25°C
Operating current	I _{OP}	mA	-	22	40	30	45	60	-	135	190	T _c =25°C
Operating voltage	V _{OP}	V	-	2.2	2.4	1.6	1.9	2.3	-	2.3	2.8	T _c =25°C
Lasing wavelength	λ	nm	775	788	800	770	785	800	775	783	795	T _c =25°C
Monitor current	I _{MON}	mA	0.5	-	1.5	0.5	-	1.5	0.05	0.19	0.6	T _c =25°C
Electrical pin out			A, B, E			A, B, E			A,B			

Absolute Maximum Rating

Item	Symbol	Unit	Min	Max	Test Condition
Operating temperature	T _{OPR}	°C	-10	+50	
Storage temperature	T _{STG}	°C	-40	+85	
LD reverse voltage	V _R (LD)	V	-	2	T _c =25°C
PD reverse voltage	V _R (PD)	V	-	30	T _c =25°C

Fiber Specs

Single mode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.13	
Mode Field Diameter @ 630nm	MFD	um	3.5	4.0	4.5
Length	L	meter	-	1	-

FiberMax785

Fiber Pigtailed 785nm Laser Module

Polarization maintaining fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.11	
Mode Field Diameter @ 630nm	MFD	um	4.5	5.0	5.5
Length	L	meter	-	1	-
Polarization Extinction Ratio	PER	dB	17	20	-

*Note: Polarization and slow axis is aligned to the keyway on the connector.
The keyway is narrow Key for FC/APC connector.*

Multimode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.22	
Core Diameter	MFD	um	50	50	100
Length	L	meter	-	1	-

Collimator Options (SM or PM)

Type	M	N	P	Q
Beam Diameter ($1/e^2$, mm, $\pm 25\%$)	0.8	1.3	1.9	3.2
Divergence (mrad)	<1.2	<0.8	<0.5	<0.4

FiberMax785 PART ORDERING TABLE

FMXL-785-ZZZ-Q-FCW

XXX = Wavelength
785 = 785nm

ZZZ = Power Out
005 = 5mW
010 = 10mW
050 = 50mW

Q = Cable Type
T = 900um / SMF

F = Connector
0 = No connector

C = Collimator
0 = None

W = Pin out
A

Example:

FMXL-785-010-P-A0B

785 = 785 nm wavelength

010 = 10 mW output

P = PM Fiber 3mm jacket

A = FC/APC connector

0 = no collimator

B = B type pin out

S = 3mm / SMF

M = 900um / PMF

P = 3mm / PMF

A = 3mm/62.5 MMF

B = 3mm/50 MMF

E=900um/SMF28

F=3mm/SMF28

K=3mm Armor/SMF

N=3mm Armor/PMF

S = SC/PC

G = SC/APC

F = FC/PC

A = FC/APC

R = ferrule only

M = 0.8 mm

N = 1.3 mm

P = 1.9 mm

Q = 3.2 mm

B

E

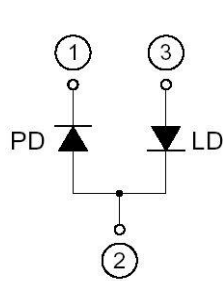
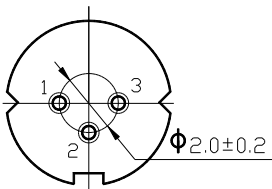
FiberMax785

Fiber Pigtailed 785nm Laser Module

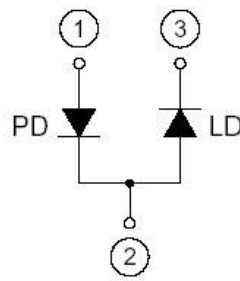


Shipping Data Includes: I_{OP} , I_{TH} , I_{MON} at P_o @ 25C, L-I curve, V-I curve, and L- I_{MON} curve to P_o
Each purchased FiberMax is provided with test data.
Please refer to this data before using the FiberMax.

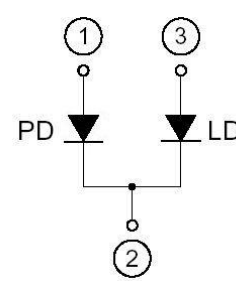
Electrical Pin Out Configurations Available



A Pin Out

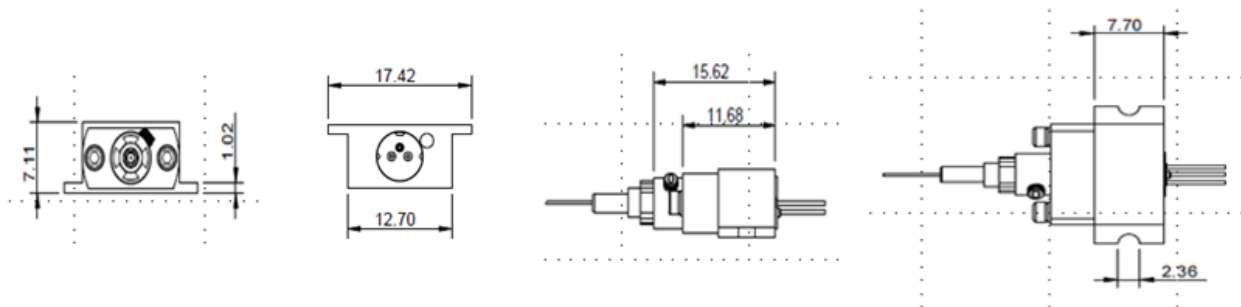


B Pin Out



E Pin Out

Mechanical Outline



Blue Sky Research is able to manufacture additional wavelength FMXL's, and has the capability to use 3.8, 5.6 and/or 9.0 mm TO packages.

FiberMax785

Fiber Pigtailed 785nm Laser Module

Handling Care and Precautions for Use of FiberMax™ Modules

1. Absolute Maximum Ratings

Do not exceed, *even momentarily*, the maximum ratings (see page 1, table). When a FiberMax module is driven in excess of its maximum ratings, it can cause at minimum a considerable reduction in reliability, and potentially instantaneous failure.

- FiberMax modules may be damaged by surge currents generated at power on-off operation. Check on the transient characteristics of the power supply to make sure that such surges do not exceed the maximum ratings.
- The maximum ratings are specified for a case temperature of 25°C. Designs should be made to work well within this temperature range. As the case temperature goes up, power dissipation as well as maximum light output power is reduced.

2. Soldering Conditions

Maximum solder-tip temperature is 260°C and soldering time must be within 3.0 seconds. A minimum solder clearance of 1.6mm should be maintained from the root of the lead.

3. Prevention of Breakdown due to Static Electricity

FiberMax modules may be adversely affected by static electricity and surge currents and, consequently, cause breakdown of the module and reduction of reliability unless the following precautions are taken:

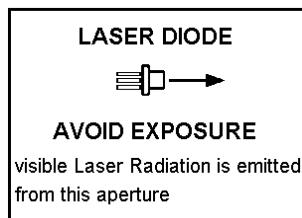
- Power supplies, installation and measuring equipment should be grounded. A noise filter or noise-cut transformer should be provided on any power supply inputs.
- Anyone working with a FiberMax module should be grounded through high resistance (500 K Ohm - 1M Ohm) by means of a ground strap and wrist band (for example).
- Soldering irons should be grounded to protect laser modules from voltage leaks.
- During operation of the FiberMax module, working clothes, hats, and shoes should be static-protected. Cotton-based clothing is preferred.
- Any container for carriage and storage should be static-protected.
- Avoid using laser modules in an environment where high frequency surge currents may be generated by an inductive electric field (such as a fluorescent lamp). These fields can also cause breakdown or deterioration of the laser module.

4. Package Handling

- The laser module package should not be cut off, reworked, or deformed. Care should be taken when handling the fiber to avoid kinking it.
- Do not touch the ferrule end. Any scratch or contamination may result in reduction of optical characteristics.
- Remove small contaminants on the ferrule surface carefully using a soft cotton tip stick with a small amount of methyl alcohol.

5. Safety

The output light from laser modules is harmful to a human body even if it is invisible. Avoid looking at the output light of a FiberMax module directly, or even indirectly through a lens during operation. Observance of operation should be through an infrared TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.



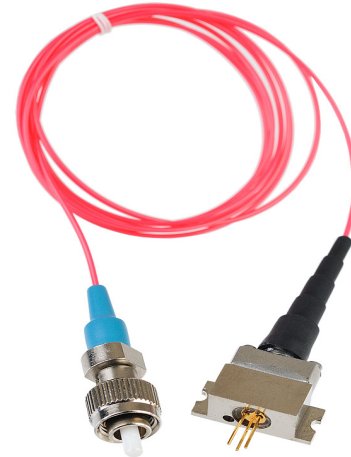
FiberMax808

Fiber Pigtailed 808nm Laser Module



Description

FiberMax808 is a fiber-pigtailed red laser module delivering superior performance for today's demanding electro-optic applications. Based on Blue Sky Research laser packaging technology, the FiberMax808 provides excellent coupling efficiency and stability in a cost effective package. The thermally stable design of the FiberMax808, based on our standard FiberMAX packaging technology, is a proven, stable package with many thousands of lasers operating in demanding applications. The units are offered with Multimode, Polarization Maintaining Single Mode or Single Mode fiber, 3mm or 0.9mm jacketing and a range of collimator options.



Optical and Electrical Characteristics

Item	Symbol	Unit	Min	Typ	Max	Test Condition
Test Conditions						
Optical power	P _o	mW	-	50	-	T _c =25°C
Threshold current	I _{TH}	mA	-	80	100	T _c =25°C
Operating current	I _{OP}	mA	150	170	190	T _c =25°C
Operating voltage	V _{OP}	V	-	2.1	2.5	T _c =25°C
Lasing wavelength	λ	nm	800	805	810	T _c =25°C
Monitor current	I _{MON}	mA	-	-	-	T _c =25°C
Electrical pin out				A, B		

Absolute Maximum Rating

Item	Symbol	Unit	Min	Max	Test Condition
Operating temperature	T _{OPR}	°C	-10	+50	
Storage temperature	T _{STG}	°C	-40	+85	
LD reverse voltage	V _R (LD)	V	-	2	T _c =25°C
PD reverse voltage	V _R (PD)	V	-	30	T _c =25°C

Fiber Specs

Single mode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.13	
Mode Field Diameter @ 630nm	MFD	um	3.5	4.0	4.5
Length	L	meter	-	1	-

FiberMax808

Fiber Pigtailed 808nm Laser Module

Polarization maintaining fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.11	
Mode Field Diameter @ 630nm	MFD	um	4.5	5.0	5.5
Length	L	meter	-	1	-
Polarization Extinction Ratio	PER	dB	17	20	-

Note: Polarization and slow axis is aligned to the keyway on the connector.
The keyway is narrow Key for FC/APC connector.

Multimode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.22	
Core Diameter	MFD	um	50	50	100
Length	L	meter	-	1	-

Collimator Options (SM or PM)

Type	M	N	P	Q
Beam Diameter (1/e ² , mm, ±25%)	0.8	1.3	1.9	3.2
Divergence (mrad)	<1.2	<0.8	<0.5	<0.4

FiberMax808 PART ORDERING TABLE

FMXL-808-ZZZ-Q-FCW

XXX = Wavelength
808 = 808nm

ZZZ = Power Out
050 = 50mW

Q = Cable Type
T = 900um / SMF
S = 3mm / SMF
M = 900um / PMF
P = 3mm / PMF
A = 3mm/62.5 MMF
B = 3mm/50 MMF
E = 900um/SMF28
F = 3mm/SMF28
K = 3mm Armor/SMF
N = 3mm Armor/PMF
Y = 3mm/100 MMF
Z = 900um/100 MMF

F = Connector
0 = No connector
S = SC/PC
G = SC/APC
F = FC/PC
A = FC/APC
R = ferrule only

C = Collimator
0 = None
M = 0.8 mm
N = 1.3 mm
P = 1.9 mm
Q = 3.2 mm

W = Pin out
A
B

Example:

FMXL-808-050-P-A0B
808 = 808 nm wavelength
050 = 50 mW output
P = PM Fiber 3mm jacket
A = FC/APC connector
0 = no collimator
B = B type pin out

FiberMax808

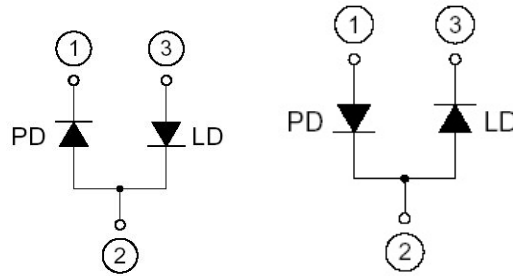
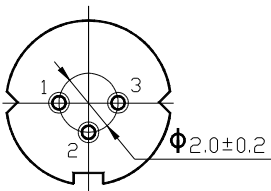
Fiber Pigtailed 808nm Laser Module



Shipping Data Includes:

I_{OP} , I_{TH} , I_{MON} at P_o @ 25C, L-I curve, V-I curve, and L- I_{MON} curve to P_o
Each purchased FiberMax is provided with test data.
Please refer to this data before using the FiberMax.

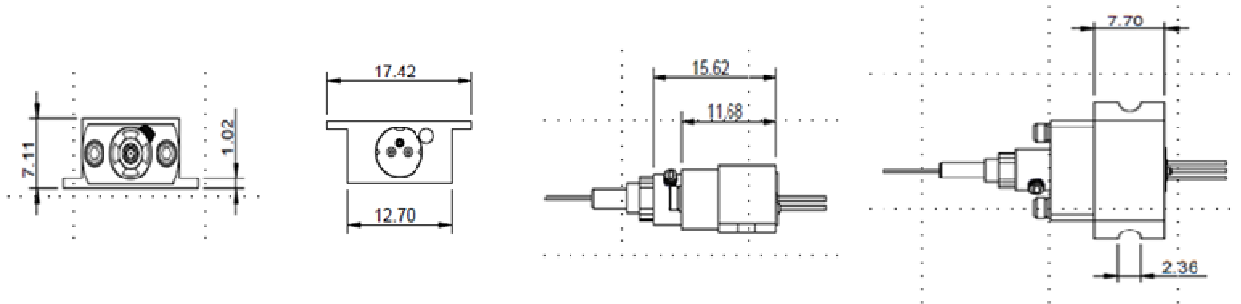
Electrical Pin Out Configurations Available



A Pin Out

B Pin Out

Mechanical Outline (dimensions in mm)



Blue Sky Research is able to manufacture additional wavelength FMXL's, and has the capability to use 3.8, 5.6 and/or 9.0 mm TO packages.

FiberMax808

Fiber Pigtailed 808nm Laser Module

Handling Care and Precautions for Use of FiberMax™ Modules

1. Absolute Maximum Ratings

Do not exceed, *even momentarily*, the maximum ratings (see page 1, table). When a FiberMax module is driven in excess of its maximum ratings, it can cause at minimum a considerable reduction in reliability, and potentially instantaneous failure.

- a. FiberMax modules may be damaged by surge currents generated at power on-off operation. Check on the transient characteristics of the power supply to make sure that such surges do not exceed the maximum ratings.
- b. The maximum ratings are specified for a case temperature of 25°C. Designs should be made to work well within this temperature range. As the case temperature goes up, power dissipation as well as maximum light output power is reduced.

2. Soldering Conditions

Maximum solder-tip temperature is 260°C and soldering time must be within 3.0 seconds. A minimum solder clearance of 1.6mm should be maintained from the root of the lead.

3. Prevention of Breakdown due to Static Electricity

FiberMax modules may be adversely affected by static electricity and surge currents and, consequently, cause breakdown of the module and reduction of reliability unless the following precautions are taken:

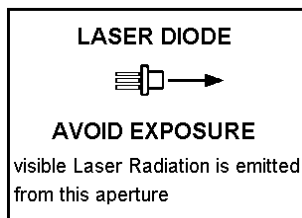
- a. Power supplies, installation and measuring equipment should be grounded. A noise filter or noise-cut transformer should be provided on any power supply inputs.
- b. Anyone working with a FiberMax module should be grounded through high resistance (500 K Ohm - 1M Ohm) by means of a ground strap and wrist band (for example).
- c. Soldering irons should be grounded to protect laser modules from voltage leaks.
- d. During operation of the FiberMax module, working clothes, hats, and shoes should be static-protected. Cotton-based clothing is preferred.
- e. Any container for carriage and storage should be static-protected.
- f. Avoid using laser modules in an environment where high frequency surge currents may be generated by an inductive electric field (such as a fluorescent lamp). These fields can also cause breakdown or deterioration of the laser module.

4. Package Handling

- a. The laser module package should not be cut off, reworked, or deformed. Care should be taken when handling the fiber to avoid kinking it.
- b. Do not touch the ferrule end. Any scratch or contamination may result in reduction of optical characteristics.
- c. Remove small contaminants on the ferrule surface carefully using a soft cotton tip stick with a small amount of methyl alcohol.

5. Safety

The output light from laser modules is harmful to a human body even if it is invisible. Avoid looking at the output light of a FiberMax module directly, or even indirectly through a lens during operation. Observance of operation should be through an infrared TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.



info@amstechnologies.com
www.amstechnologies-webshop.com



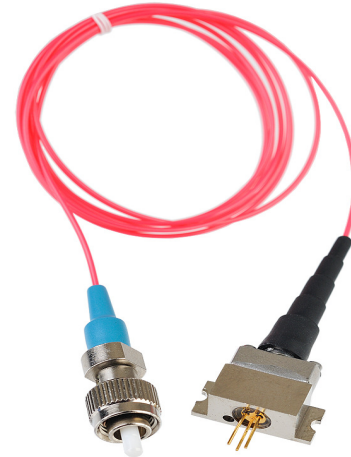
FiberMax830

Fiber Pigtailed 830nm Laser Module



Description

FiberMax830 is a fiber-pigtailed red laser module delivering superior performance for today's demanding electro-optic applications. Based on Blue Sky Research laser packaging technology, the FiberMax830 provides excellent coupling efficiency and stability in a cost effective package. The thermally stable design of the FiberMax830, based on our standard FiberMAX packaging technology, is a proven, stable package with many thousands of lasers operating in demanding applications. The units are offered with Multimode, Polarization Maintaining Single Mode or Single Mode fiber, 3mm or 0.9mm jacketing and a range of collimator options.



Optical and Electrical Characteristics

Item	Symbol	Unit	Min	Typ	Max	Min	Typ	Max	Test Condition
Test Conditions									
Optical power	P _o	mW	20	25	-	95	100	-	T _c =25°C
Threshold current	I _{TH}	mA	-	20	40	-	35	50	T _c =25°C
Operating current	I _{OP}	mA	-	75	100	-	240	280	T _c =25°C
Operating voltage	V _{OP}	V	-	1.9	2.4	-	1.3	2.2	T _c =25°C
Lasing wavelength	λ	nm	820	830	840	815	825	835	T _c =25°C
Monitor current	I _{MON}	mA	0.2	-	1.0	0.8	4.0	10.8	T _c =25°C
Electrical pin out			A or B			A or B			

Absolute Maximum Rating

Item	Symbol	Unit	Min	Max	Test Condition
Operating temperature	T _{OPR}	°C	-10	+50	
Storage temperature	T _{STG}	°C	-40	+85	
LD reverse voltage	V _R (LD)	V	-	2	T _c =25°C
PD reverse voltage	V _R (PD)	V	-	30	T _c =25°C

Fiber Specs

Single mode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.13	
Mode Field Diameter @ 630nm	MFD	um	3.5	4.0	4.5
Length	L	meter	-	1	-

FiberMax830

Fiber Pigtailed 830nm Laser Module

Polarization maintaining fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.11	
Mode Field Diameter @ 630nm	MFD	um	4.5	5.0	5.5
Length	L	meter	-	1	-
Polarization Extinction Ratio	PER	dB	17	20	-

*Note: Polarization and slow axis is aligned to the keyway on the connector.
The keyway is narrow Key for FC/APC connector.*

Multimode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.22	
Core Diameter	MFD	um	50	50	100
Length	L	meter	-	1	-

Collimator Options (SM or PM)

Type	M	N	P	Q
Beam Diameter ($1/e^2$, mm, $\pm 25\%$)	0.8	1.3	1.9	3.2
Divergence (mrad)	<1.2	<0.8	<0.5	<0.4

FiberMax830 PART ORDERING TABLE

FMXL-830-ZZZ-Q-FCW

XXX = Wavelength

830 = 830nm

ZZZ = Power Out

025 = 25mW

100 = 100mW

Q = Cable Type

T = 900um / SMF

S = 3mm / SMF

M = 900um / PMF

P = 3mm / PMF

A = 3mm/62.5 MMF

B = 3mm/50 MMF

E = 900um/SMF28

F = 3mm/SMF28

K = 3mm Armor/SMF

N = 3mm Armor/PMF

Y = 3mm/100 MMF

Z = 900um/100 MMF

F = Connector

0 = No connector

S = SC/PC

G = SC/APC

F = FC/PC

A = FC/APC

R = ferrule only

C = Collimator

0 = None

M = 0.8 mm

N = 1.3 mm

P = 1.9 mm

Q = 3.2 mm

W = Pin out

A

B

Example:

FMXL-830-025-P-A0B

830 = 830 nm wavelength

025 = 25 mW output

P = PM Fiber 3mm jacket

A = FC/APC connector

0 = no collimator

B = B type pin out

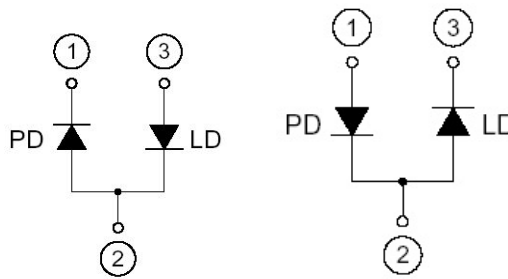
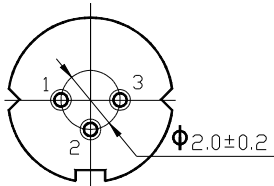
FiberMax830

Fiber Pigtailed 830nm Laser Module



Shipping Data Includes: I_{OP} , I_{TH} , I_{MON} at P_o @ 25C, L-I curve, V-I curve, and L- I_{MON} curve to P_o
Each purchased FiberMax is provided with test data.
Please refer to this data before using the FiberMax.

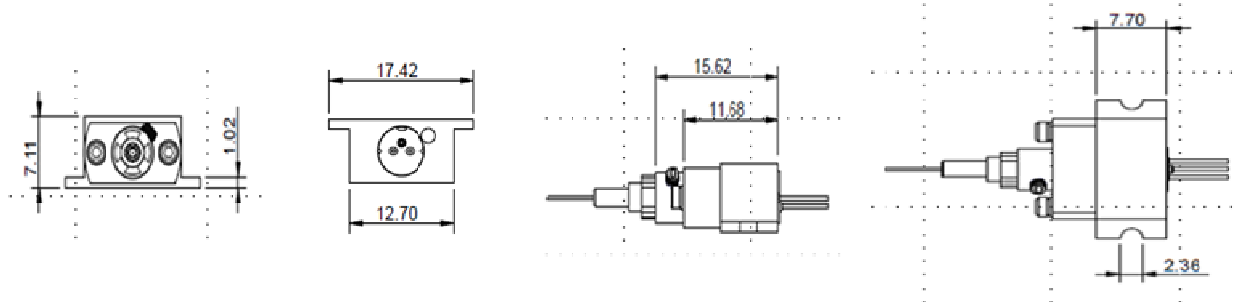
Electrical Pin Out Configurations Available



A Pin Out

B Pin Out

Mechanical Outline (dimensions in mm)



Blue Sky Research is able to manufacture additional wavelength FMXL's, and has the capability to use 3.8, 5.6 and/or 9.0 mm TO packages.

FiberMax830

Fiber Pigtailed 830nm Laser Module

Handling Care and Precautions for Use of FiberMax™ Modules

1. Absolute Maximum Ratings

Do not exceed, *even momentarily*, the maximum ratings (see page 1, table). When a FiberMax module is driven in excess of its maximum ratings, it can cause at minimum a considerable reduction in reliability, and potentially instantaneous failure.

- FiberMax modules may be damaged by surge currents generated at power on-off operation. Check on the transient characteristics of the power supply to make sure that such surges do not exceed the maximum ratings.
- The maximum ratings are specified for a case temperature of 25°C. Designs should be made to work well within this temperature range. As the case temperature goes up, power dissipation as well as maximum light output power is reduced.

2. Soldering Conditions

Maximum solder-tip temperature is 260°C and soldering time must be within 3.0 seconds. A minimum solder clearance of 1.6mm should be maintained from the root of the lead.

3. Prevention of Breakdown due to Static Electricity

FiberMax modules may be adversely affected by static electricity and surge currents and, consequently, cause breakdown of the module and reduction of reliability unless the following precautions are taken:

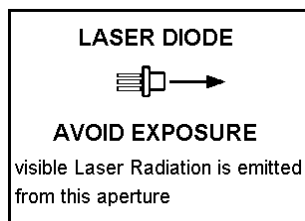
- Power supplies, installation and measuring equipment should be grounded. A noise filter or noise-cut transformer should be provided on any power supply inputs.
- Anyone working with a FiberMax module should be grounded through high resistance (500 K Ohm - 1M Ohm) by means of a ground strap and wrist band (for example).
- Soldering irons should be grounded to protect laser modules from voltage leaks.
- During operation of the FiberMax module, working clothes, hats, and shoes should be static-protected. Cotton-based clothing is preferred.
- Any container for carriage and storage should be static-protected.
- Avoid using laser modules in an environment where high frequency surge currents may be generated by an inductive electric field (such as a fluorescent lamp). These fields can also cause breakdown or deterioration of the laser module.

4. Package Handling

- The laser module package should not be cut off, reworked, or deformed. Care should be taken when handling the fiber to avoid kinking it.
- Do not touch the ferrule end. Any scratch or contamination may result in reduction of optical characteristics.
- Remove small contaminates on the ferrule surface carefully using a soft cotton tip stick with a small amount of methyl alcohol.

5. Safety

The output light from laser modules is harmful to a human body even if it is invisible. Avoid looking at the output light of a FiberMax module directly, or even indirectly through a lens during operation. Observance of operation should be through an infrared TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.



info@amstechnologies.com
www.amstechnologies-webshop.com



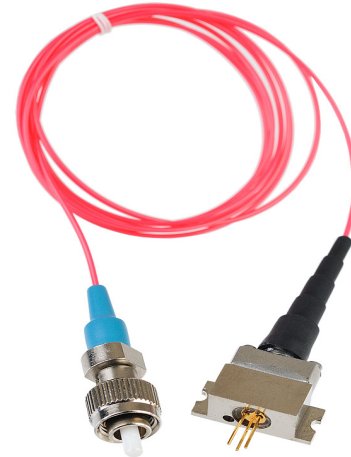
FiberMax905

Fiber Pigtailed 905nm Laser Module



Description

FiberMax905 is a fiber-pigtailed red laser module delivering superior performance for today's demanding electro-optic applications. Based on Blue Sky Research laser packaging technology, the FiberMax905 provides excellent coupling efficiency and stability in a cost effective package. The thermally stable design of the FiberMax905, based on our standard FiberMAX packaging technology, is a proven, stable package with many thousands of lasers operating in demanding applications. The units are offered with Multimode, Polarization Maintaining Single Mode or Single Mode fiber, 3mm or 0.9mm jacketing and a range of collimator options.



Optical and Electrical Characteristics

Item	Symbol	Unit	Min	Typ	Max	Test Condition
Test Conditions						
Optical power	P _O	mW	5	6	-	T _c =25°C
Threshold current	I _{TH}	mA	-	15	25	T _c =25°C
Operating current	I _{OP}	mA	-	40	60	T _c =25°C
Operating voltage	V _{OP}	V	1.6	2.0	2.5	T _c =25°C
Lasing wavelength	λ	nm	890	905	920	T _c =25°C
Monitor current	I _{MON}	mA	0.1	0.4	0.6	T _c =25°C
Electrical pin out			A, B, E			

Absolute Maximum Rating

Item	Symbol	Unit	Min	Max	Test Condition
Operating temperature	T _{OPR}	°C	-10	+50	
Storage temperature	T _{STG}	°C	-40	+85	
LD reverse voltage	V _R (LD)	V	-	2	T _c =25°C
PD reverse voltage	V _R (PD)	V	-	30	T _c =25°C

Fiber Specs

Single mode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.13	
Mode Field Diameter @ 630nm	MFD	um	3.5	4.0	4.5
Length	L	meter	-	1	-

FiberMax905

Fiber Pigtailed 905nm Laser Module

Polarization maintaining fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.11	
Mode Field Diameter @ 630nm	MFD	um	4.5	5.0	5.5
Length	L	meter	-	1	-
Polarization Extinction Ratio	PER	dB	17	20	-

*Note: Polarization and slow axis is aligned to the keyway on the connector.
The keyway is narrow Key for FC/APC connector.*

Multimode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.22	
Core Diameter	MFD	um	50	50	100
Length	L	meter	-	1	-

Collimator Options (SM or PM)

Type	M	N	P	Q
Beam Diameter ($1/e^2$, mm, $\pm 25\%$)	0.8	1.3	1.9	3.2
Divergence (mrad)	<1.2	<0.8	<0.5	<0.4

FiberMax905 PART ORDERING TABLE

FMXL-905-ZZZ-Q-FCW

XXX = Wavelength
905 = 905nm

ZZZ = Power Out
005 = 5mW

Q = Cable Type

T = 900um / SMF

S = 3mm / SMF

M = 900um / PMF

P = 3mm / PMF

A = 3mm/62.5 MMF

B = 3mm/50 MMF

E = 900um/SMF28

F = 3mm/SMF28

K = 3mm Armor/SMF

N = 3mm Armor/PMF

Y = 3mm/100 MMF

Z = 900um/100 MMF

F = Connector

0 = No connector

S = SC/PC

G = SC/APC

F = FC/PC

A = FC/APC

R = ferrule only

C = Collimator

0 = None

M = 0.8 mm

N = 1.3 mm

P = 1.9 mm

Q = 3.2 mm

W = Pin out

A

B

E

Example:

FMXL-905-005-P-A0B

905 = 905 nm wavelength

005 = 5 mW output

P = PM Fiber 3mm jacket

A = FC/APC connector

0 = no collimator

B = B type pin out

FiberMax905

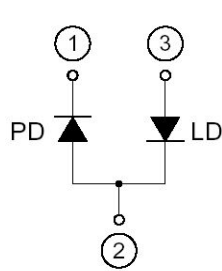
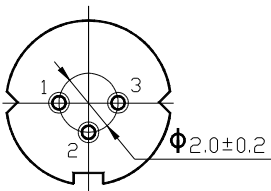
Fiber Pigtailed 905nm Laser Module



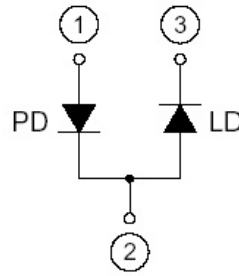
Shipping Data Includes:

I_{OP} , I_{TH} , I_{MON} at P_o @ 25C, L-I curve, V-I curve, and L- I_{MON} curve to P_o
Each purchased FiberMax is provided with test data.
Please refer to this data before using the FiberMax.

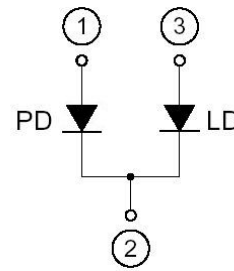
Electrical Pin Out Configurations Available



A Pin Out

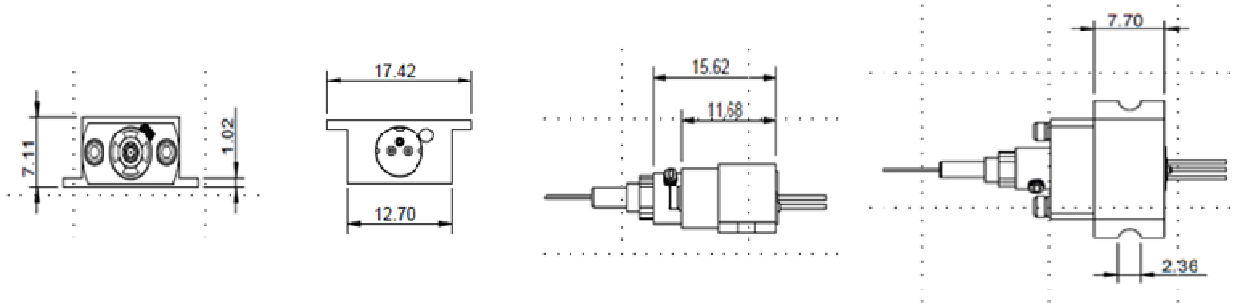


B Pin Out



E Pin Out

Mechanical Outline (Dimensions in mm)



Blue Sky Research is able to manufacture additional wavelength FMXL's, and has the capability to use 3.8, 5.6 and/or 9.0 mm TO packages.

FiberMax905

Fiber Pigtailed 905nm Laser Module

Handling Care and Precautions for Use of FiberMax™ Modules

1. Absolute Maximum Ratings

Do not exceed, *even momentarily*, the maximum ratings (see page 1, table). When a FiberMax module is driven in excess of its maximum ratings, it can cause at minimum a considerable reduction in reliability, and potentially instantaneous failure.

- FiberMax modules may be damaged by surge currents generated at power on-off operation. Check on the transient characteristics of the power supply to make sure that such surges do not exceed the maximum ratings.
- The maximum ratings are specified for a case temperature of 25°C. Designs should be made to work well within this temperature range. As the case temperature goes up, power dissipation as well as maximum light output power is reduced.

2. Soldering Conditions

Maximum solder-tip temperature is 260°C and soldering time must be within 3.0 seconds. A minimum solder clearance of 1.6mm should be maintained from the root of the lead.

3. Prevention of Breakdown due to Static Electricity

FiberMax modules may be adversely affected by static electricity and surge currents and, consequently, cause breakdown of the module and reduction of reliability unless the following precautions are taken:

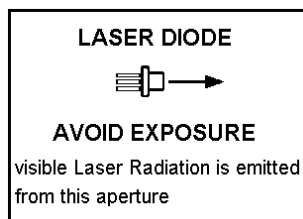
- Power supplies, installation and measuring equipment should be grounded. A noise filter or noise-cut transformer should be provided on any power supply inputs.
- Anyone working with a FiberMax module should be grounded through high resistance (500 K Ohm - 1M Ohm) by means of a ground strap and wrist band (for example).
- Soldering irons should be grounded to protect laser modules from voltage leaks.
- During operation of the FiberMax module, working clothes, hats, and shoes should be static-protected. Cotton-based clothing is preferred.
- Any container for carriage and storage should be static-protected.
- Avoid using laser modules in an environment where high frequency surge currents may be generated by an inductive electric field (such as a fluorescent lamp). These fields can also cause breakdown or deterioration of the laser module.

4. Package Handling

- The laser module package should not be cut off, reworked, or deformed. Care should be taken when handling the fiber to avoid kinking it.
- Do not touch the ferrule end. Any scratch or contamination may result in reduction of optical characteristics.
- Remove small contaminants on the ferrule surface carefully using a soft cotton tip stick with a small amount of methyl alcohol.

5. Safety

The output light from laser modules is harmful to a human body even if it is invisible. Avoid looking at the output light of a FiberMax module directly, or even indirectly through a lens during operation. Observance of operation should be through an infrared TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.



info@amstechnologies.com
www.amstechnologies-webshop.com



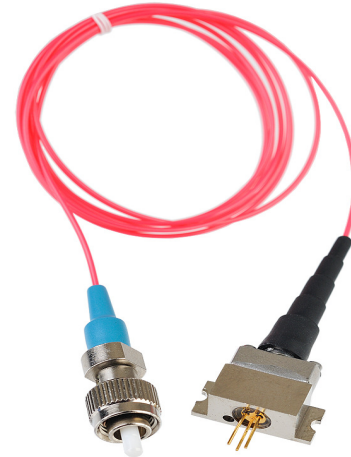
FiberMax980

Fiber Pigtailed 980nm Laser Module



Description

FiberMax980 is a fiber-pigtailed IR laser module delivering superior performance for today's demanding electro-optic applications. Based on Blue Sky Research laser packaging technology, the FiberMax980 provides excellent coupling efficiency and stability in a cost effective package. The thermally stable design of the FiberMax980, based on our standard FiberMAX packaging technology, is a proven, stable package with many thousands of lasers operating in demanding applications. The units are offered with Multimode, Polarization Maintaining Single Mode or Single Mode fiber, 3mm or 0.9mm jacketing and a range of collimator options.



Optical and Electrical Characteristics

Item	Symbol	Unit	Min	Typ	Max	Test Condition
Test Conditions						
Optical power	P _O	mW	20	25	-	T _c =25°C
Threshold current	I _{TH}	mA	-	12	20	T _c =25°C
Operating current	I _{OP}	mA	-	75	100	T _c =25°C
Operating voltage	V _{OP}	V	1.0	1.5	2.1	T _c =25°C
Lasing wavelength	λ	nm	970	980	990	T _c =25°C
Monitor current	I _{MON}	mA	0.1	0.3	0.5	T _c =25°C
Electrical pin out				B		

Absolute Maximum Rating

Item	Symbol	Unit	Min	Max	Test Condition
Operating temperature	T _{OPR}	°C	-10	+50	
Storage temperature	T _{STG}	°C	-40	+85	
LD reverse voltage	V _R (LD)	V	-	2	T _c =25°C
PD reverse voltage	V _R (PD)	V	-	30	T _c =25°C

Fiber Specs

Single mode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.13	
Mode Field Diameter @ 630nm	MFD	um	3.5	4.0	4.5
Length	L	meter	-	1	-

FiberMax980

Fiber Pigtailed 980nm Laser Module

Polarization maintaining fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.11	
Mode Field Diameter @ 630nm	MFD	um	4.5	5.0	5.5
Length	L	meter	-	1	-
Polarization Extinction Ratio	PER	dB	17	20	-

*Note: Polarization and slow axis is aligned to the keyway on the connector.
The keyway is narrow Key for FC/APC connector.*

Multimode fiber w/ 3mm, 900um or metal protective jacketing

Item	Symbol	Unit	Min	Typ	Max
Fiber numerical aperture	NA		-	0.22	
Core Diameter	MFD	um	50	50	100
Length	L	meter	-	1	-

Collimator Options (SM or PM)

Type	M	N	P	Q
Beam Diameter ($1/e^2$, mm, $\pm 25\%$)	0.8	1.3	1.9	3.2
Divergence (mrad)	<1.2	<0.8	<0.5	<0.4

FiberMax980 PART ORDERING TABLE

FMXL-980-ZZZ-Q-FCW

XXX = Wavelength
980 = 980nm

ZZZ = Power Out
025 = 25mW

Q = Cable Type
T = 900um / SMF
S = 3mm / SMF

F = Connector
0 = No connector
S = SC/PC

C = Collimator
0 = None
M = 0.8 mm

W = Pin out
B

Example:

FMXL-980-025-P-A0B

980 = 980 nm wavelength

025 = 25 mW output

P = PM Fiber 3mm jacket

A = FC/APC connector

0 = no collimator

B = B type pin out

M = 900um / PMF

P = 3mm / PMF

A = 3mm/62.5 MMF

B = 3mm/50 MMF

E = 900um/SMF28

F = 3mm/SMF28

K = 3mm Armor/SMF

N = 3mm Armor/PMF

G = SC/APC

F = FC/PC

A = FC/APC

R = ferrule only

N = 1.3 mm

P = 1.9 mm

Q = 3.2 mm

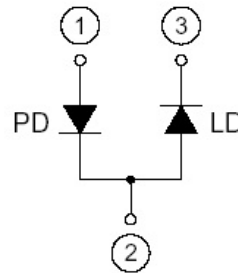
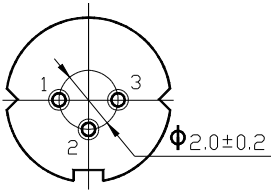
FiberMax980

Fiber Pigtailed 980nm Laser Module



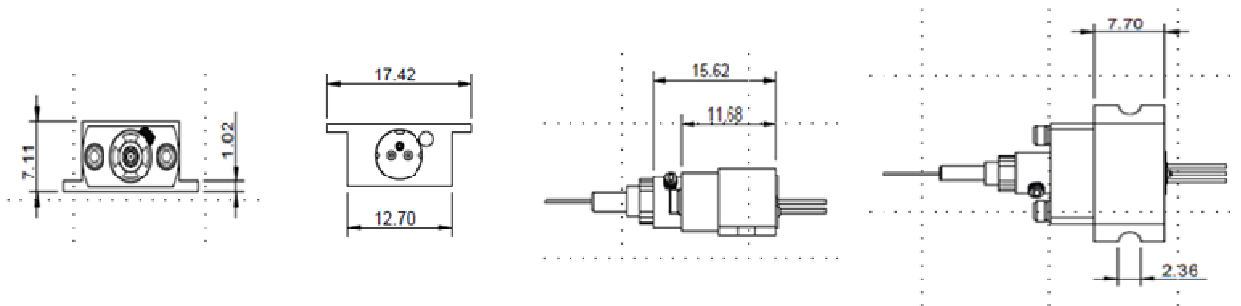
Shipping Data Includes: I_{OP} , I_{TH} , I_{MON} at P_o @ 25C, L-I curve, V-I curve, and L- I_{MON} curve to P_o
Each purchased FiberMax is provided with test data.
Please refer to this data before using the FiberMax.

Electrical Pin Out Configurations Available



B Pin Out

Mechanical Outline (Dimensions in mm)



Blue Sky Research is able to manufacture additional wavelength FMXL's, and has the capability to use 3.8, 5.6 and/or 9.0 mm TO packages.

FiberMax980

Fiber Pigtailed 980nm Laser Module

Handling Care and Precautions for Use of FiberMax™ Modules

1. Absolute Maximum Ratings

Do not exceed, *even momentarily*, the maximum ratings (see page 1, table). When a FiberMax module is driven in excess of its maximum ratings, it can cause at minimum a considerable reduction in reliability, and potentially instantaneous failure.

- a. FiberMax modules may be damaged by surge currents generated at power on-off operation. Check on the transient characteristics of the power supply to make sure that such surges do not exceed the maximum ratings.
- b. The maximum ratings are specified for a case temperature of 25°C. Designs should be made to work well within this temperature range. As the case temperature goes up, power dissipation as well as maximum light output power is reduced.

2. Soldering Conditions

Maximum solder-tip temperature is 260°C and soldering time must be within 3.0 seconds. A minimum solder clearance of 1.6mm should be maintained from the root of the lead.

3. Prevention of Breakdown due to Static Electricity

FiberMax modules may be adversely affected by static electricity and surge currents and, consequently, cause breakdown of the module and reduction of reliability unless the following precautions are taken:

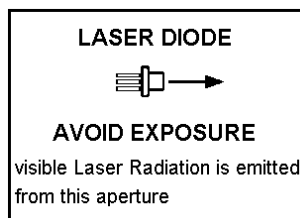
- a. Power supplies, installation and measuring equipment should be grounded. A noise filter or noise-cut transformer should be provided on any power supply inputs.
- b. Anyone working with a FiberMax module should be grounded through high resistance (500 K Ohm - 1M Ohm) by means of a ground strap and wrist band (for example).
- c. Soldering irons should be grounded to protect laser modules from voltage leaks.
- d. During operation of the FiberMax module, working clothes, hats, and shoes should be static-protected. Cotton-based clothing is preferred.
- e. Any container for carriage and storage should be static-protected.
- f. Avoid using laser modules in an environment where high frequency surge currents may be generated by an inductive electric field (such as a fluorescent lamp). These fields can also cause breakdown or deterioration of the laser module.

4. Package Handling

- a. The laser module package should not be cut off, reworked, or deformed. Care should be taken when handling the fiber to avoid kinking it.
- b. Do not touch the ferrule end. Any scratch or contamination may result in reduction of optical characteristics.
- c. Remove small contaminants on the ferrule surface carefully using a soft cotton tip stick with a small amount of methyl alcohol.

5. Safety

The output light from laser modules is harmful to a human body even if it is invisible. Avoid looking at the output light of a FiberMax module directly, or even indirectly through a lens during operation. Observance of operation should be through an infrared TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products.



info@amstechnologies.com
www.amstechnologies-webshop.com

