



SPECIFICATION

Classification:

Product Code: MU50-976-01-R Rev:

Part Description: Very High Power Module 976nm, 50W Output Module

Product Line: High Power MM Un-Cooled Laser Module

Responsible Engineer:

Spec Number:

SWSPEC 021

Revision: 2R

Department: Engineering, Marketing and Sales

Type of Specification: Product Specification Basic Overview

1.0 Product Specification:

1.1 Scope

Specification for an un-cooled 976nm Multi-Mode Pump Module with more than 47W light output power. The package design is based on a compact, dust-sealed OEM package. It has isolated contacts and a single output fiber.

Non-qualified product. Refer to SvetWheel Terms and Conditions.

1.2 Specification Parameters

1.2.1 Max Ratings

Parameter	Symbol	Min	Max	Unit	Condition / Comment
ESD			500	V	HBM, C=100pF, R=1.5 kOhm
Storage temperature		0	75	°C	Non-condensing
Lead Soldering Temp.			250	°C	
Lead Soldering Time			10	sec	
Operating case temperature		15	45	°C	Reliability impacted if operating point deviates from reference condition
Relative Humidity		5	95	%	Transport, non-condensing
		5	75	%	Operating, non-condensing ¹⁾
Maximum current			13	A	< 1min
Fiber bend radius		25		mm	
Back pulse 1030-1070nm range isolation		-40		dB	Pulse back direction fiber propagated test

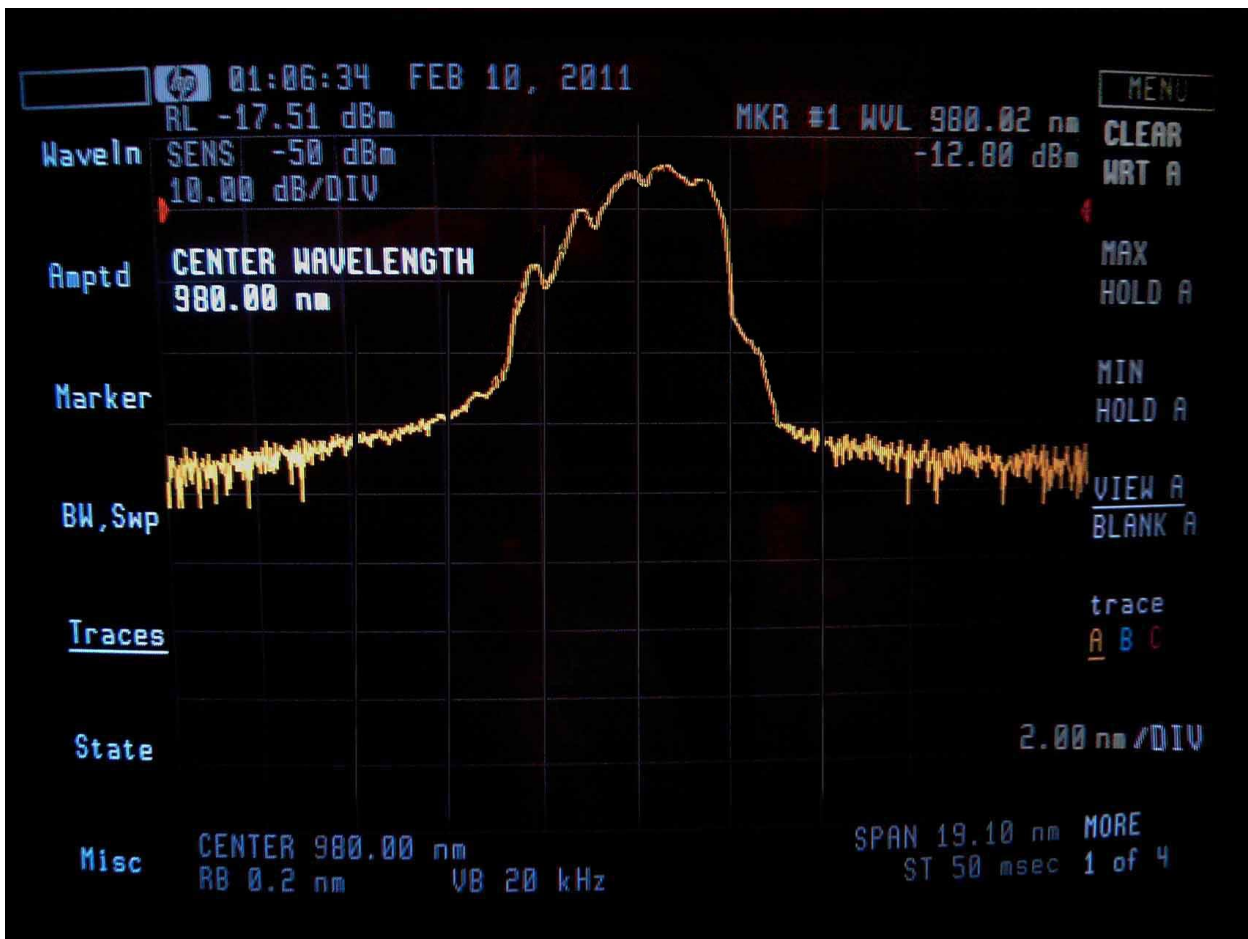
¹⁾ A relative humidity of <55% is recommended for long term stability due to the epoxy sealing of the package. Operation outside may cause irreversible or latent chip and/or module damage.

1.2.2 Laser Module E/O

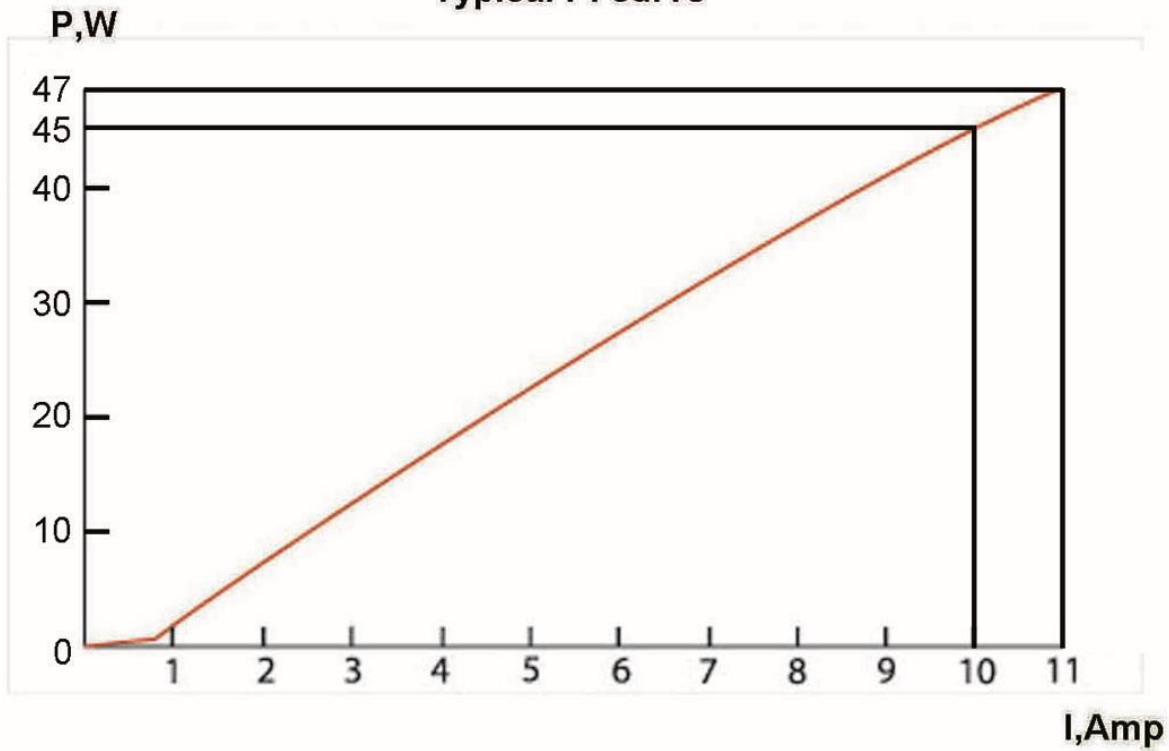
Parameters at 25 °C Heat sink temperature and the use of a thermal interface material rated for a thermal contact resistance of less than 1.0 cm K/W (0.155 in K/W).

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Operating current	Iop		11.5	12	A	47W ex-fiber
Forward voltage	V		11.0	13.0	V	47W ex-fiber
Threshold current	Ith		0.7	0.9	A	
Center wavelength	1c	974	976	986	nm	47W ex-fiber
Spectral width	DI		7.0		nm	90% of power, 47W ex-fiber

Remark: Min/Max values reflect recognized uncertainties not only from performance variations but also uncertainties from the measurement setup.



Typical PI curve



1.2.3 Hermeticity

Parameter	Symbol	Min	Max	Unit	Condition
Package hermeticity					Dust sealed OEM package

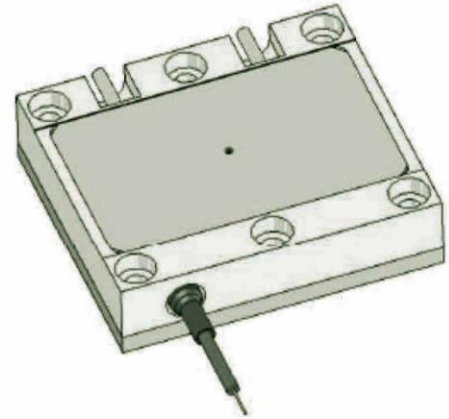
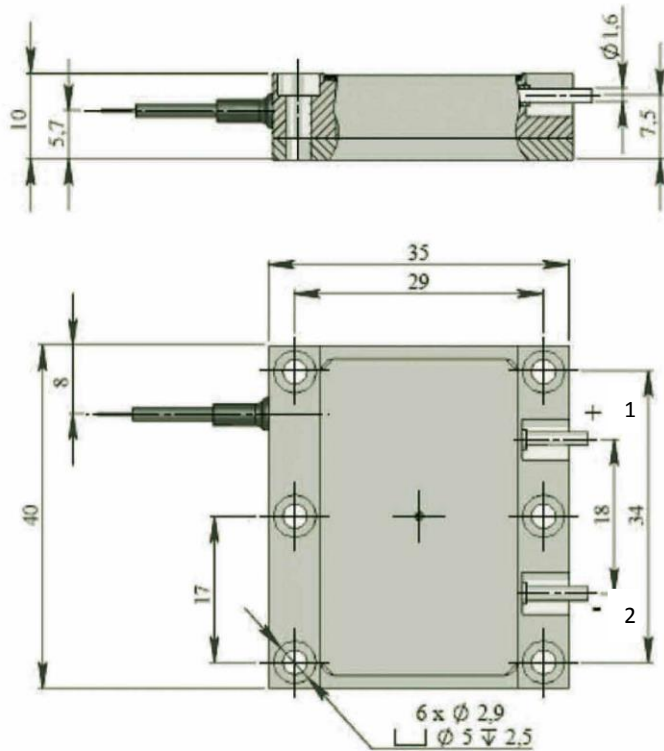
1.2.4 Fiber

Parameter	Min	Typ	Max	Unit	Remark
Fiber type					Multi-Mode Step Index
Buffer diameter	230	250	270	um	Acrylate material
Cladding diameter	123	125	128	um	
Core diameter	108	110	111	um	
Numerical aperture	0.12	0.13	0.15		
Pigtail length	1.0	1.5	1.8	m	
Connector					none

1.2.5 Pinout

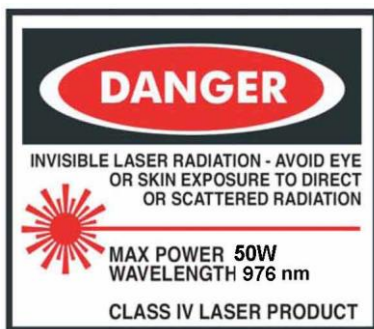
Pin	Function
1	Laser anode (+)
2	Laser cathode (-)

1.2.6 Design layout and Mechanical Dimensions



All dimensions are given in mm.

PIN-OUT ASSIGNMENT	
PIN 1	LASSER ANODE (+)
PIN 2	LASSER CATHODE (-)



This product complies with 21CFR 1040.10

List Associated Quality System Documents

SPEC-1779-7060817701

SPEC-1607-70608160702

MU50-976-01, SWSPEC -021, Revision 2

4.0 Revision History:

Revision Number: 1 Latest Revision Date: 13.11.2009 Latest Approval Date:

Reason for Change:

Revision	Sec/ Para Changed	Change Made:	Date
1	N/A	Initial Issue of Document Based on SWSpec - 018	9-Jul-2009
2	1.2.4 Fiber	Core diameter Min 108 um Typ 110 um Max111 um	22-Jun-2011
3	1.2.2 Laser Module	Operating current Typ 11 A Max 11 A	22-Jun-2011
4	Product Type	MU47-976-01-R	22-Jun-2011

Specification Author: Sergey Karnilov	Specification Manager:
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5.0 Electronic Notification List: ULE

6.0 Approvals:

First Approver's Signature	
Name: Helen Kirillova	Title: Quality Manager
Second Approver's Signature	
Name: Victor Faybishenko	Title:
Third Approver's Signature	
Name: Alex Uzov	Title: PPC