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NEOS TECHNOLOGIES
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OPERATING MANUAL

TWO PORT FIBER COUPLED
ACOUSTO-OPTIC MODULATOR ASSEMBLY
MODEL NUMBER:

26035-2-1.55-LTD-FO

DOCUMENT NUMBER: 51A12223A

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US OFFICE: NEOS Technologies, Inc. ♦ 4005 Opportunity Drive ♦ Melbourne, FL 32934 ♦ USA
Tel: (321) 242-7818 ♦ Fax: (321) 242-1019 ♦ Email: neos@neostech.com

UK OFFICE: Gooch & Housego ♦ The Old Magistrates Court ♦ Ilminster, Somerset TA19 0AB ♦ UK
Tel: +44 1460 52271 ♦ Fax: +44 1460 54972 ♦ Email: sales@goochandhousego.com

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SECTION I

INSPECTION PROCEDURE

Examine the shipping carton for damage. If the shipping carton or packing material is damaged it should be kept for the carrier's inspection. Notify the carrier and NEOS Technologies. Check the contents of the shipment for completeness, mechanical damage, and then test the equipment electronically. Operating procedures are contained in Section V. If the contents are incomplete, or the equipment does not pass the electrical testing please notify NEOS Technologies.

If there is any problem with the use of this equipment, or if the equipment fails to function as expected contact NEOS Technologies, do not try to trouble shoot or repair this equipment. Consult with a NEOS service engineer. If the equipment needs repair or replacement, contact NEOS Technologies, Inc for a Return Authorization Number.

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SECTION II

DESCRIPTION

TWO PORT FIBER COUPLED ACOUSTO-OPTIC MODULATOR ASSEMBLY

26035-2-1.55-LTD-FO

The two port fiber coupled acousto-optic modulator (AOM) assembly consists of a highly efficient acousto-optic modulator assembly that is fiber coupled with single mode fibers for input and output. The AOM is designed for operation at 1.55 µm. Its operation is independent of optical polarization. The standard fiber connector used is the FC/PC with the FC/APC or SC/APC as optional. The AOM is not direction sensitive, so either fiber can be used for input or output. The maximum modulation rise time is 100 ns.

Normally the standard configuration is to couple the diffracted (+) plus first order out of the AOM, however, optional configurations are possible upon request to couple the (-) minus first order or the zero order out of the AOM. The plus first order output will have the light frequency shifted UP by 35 MHz from the light frequency applied at the input. If the minus first order output is requested, it will have the light frequency shifted DOWN by 35 MHz from the light frequency applied at the input. If the zero order output is requested, it will remain un-shifted.

If either of the first order light is coupled out of the AOM, the low loss mode will be when the RF from the driver is modulated on. If the zero order light is coupled out of the AOM, the low loss mode will be when the RF from the driver is modulated off.

NEOS manufactures a matching RF driver designed to optimize performance. If, however, another RF drive source is used, the RF power should never exceed 1.0 watt at a frequency of 35 MHz. If damage results due to overpowering the AOM, the warranty will be void.

The selection of a digitally controlled 35 MHz RF driver such as the NEOS 21035-0.4DS allows the 26035-2-1.55-LTD-FO to be used as a switch and/or as a frequency shifter. The selection of an analog controlled 35 MHz RF driver such as the NEOS 21035-0.4AS allows the 26035-2-1.55-LTD-FO to be used as an attenuating switch and/or as a frequency shifter.

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SECTION III
DEVICE SPECIFICATIONS

26035-2-1.55-LTD-FO

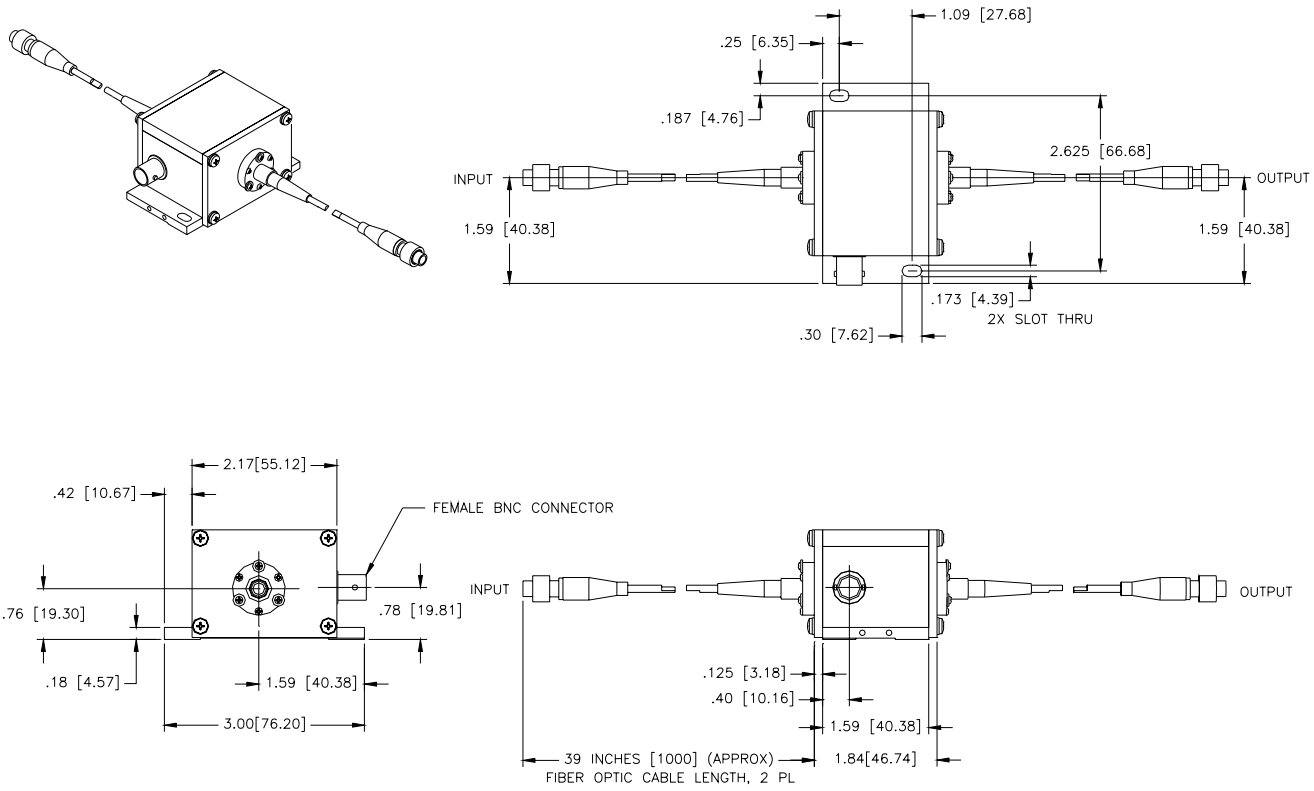
PARAMETER	SPECIFICATION
Interactive Material	AMTIR
Acoustic Mode	Longitudinal
Operating Wavelength	1520 nm to 1570 nm
Window Configuration	AR Coated
Operating Frequency	35 MHz
CW Insertion Loss	2.4 dB Maximum
Insertion Loss Stability	0.25 dB Maximum
Insertion Loss Variation CW to Modulated	0.125 dB
Back Reflection	-50 dB
CW Extinction Ratio	55 dB
Modulation Extinction Ratio	40 dB
Light Polarization	Random
Polarization Dependent Loss	0.15 dB normal 0.2dB Max.
Rise Time	100 ns Maximum
Rise Time Symmetry	15 %
AO Delay	1.35 μs ± 0.2 μs
RF Power Level	< 0.5 watt Typical
Impedance	50 ohms
Package:	53D1941A
Connector: With 3mm Jacketed Single Mode 9/125 Fiber, 1 meter long	FC/PC
Optional Connectors:	FC/APC or SC/APC
Acceptance Test Procedure:	42A12281
Acceptance Test Results form:	52A11782

Recommended Drivers:

Analog Driver System: 21035-0.4AS	Digital Driver System: 21035-0.4DS
Analog Driver Module: 21035-0.4AM	Digital Driver Module: 21035-0.4DM

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SECTION IV
OUTLINE DRAWING



26035-2-1.55-LTD-FO

53D1941

Dimensions are in inches	Tolerances:	Decimal: .xx = .01	.xxx =.005
Dimensions in [ ] are in mm.		Millimeter: .xx = .25mm	.xxx = .127mm
		Angle: = ± 30'	

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SECTION V

OPERATING PROCEDURE

When attaching a mating fiber to the fibers on the 26035-2-1.55-LTD-FO, be sure the connector end is clean. Cleaning the connector ends with a cotton swab damp with acetone will ensure there will be a low loss, dirt free connection. The use of index matching fluid is recommended if minimal connection loss is needed. Rotating the ferrel of one of the connectors will also help in aligning the fibers correctly and in turn minimize loss.

Attach the 35 MHz RF driver to the 26035-2-1.55-LTD-FO with a 50 ohm cable. Do not exceed 1.0 watt. See the Acceptance Test Report for each specific device for the settings required for the RF drive power for testing and use of the 26035-2-1.55-LTD-FO. See the driver manual for other information on input signals required for operation.

If either of the first order light is coupled out of the AOM, the low loss mode will be when the RF from the driver is modulated on. If the zero order light is coupled out of the AOM, the low loss mode will be when the RF from driver is modulated off.

The operation of the 26035-2-1.55-LTD-FO normally requires no adjustment or internal cleaning. Do not try to make any adjustment of the fiber flange, nor try to disassemble the device as this action will void the warranty.

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