10 GHz Lithium Niobate Phase Modulator with Internal Polarizer

LN65S-FC
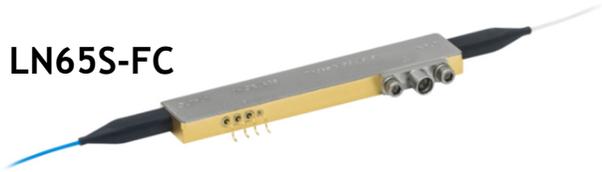
Description

The LN65S-FC is a broadband LiNbO$_3$ phase modulator. This modulator can provide phase modulation from DC to 15 GHz with a very low V$_\pi$. The input fiber is polarization-maintaining (PM), and the output fiber is standard single mode fiber, both terminated with FC/PC connectors. The key of the input FC/PC connector is aligned to the slow axis of the PM fiber, which is in turn aligned with the extraordinary mode of the chip. The RF input connector is a field-replaceable SMP (GPO®-compatible) connector.

The LN65S-FC includes an internal polarizer that is aligned with the extraordinary mode of the chip.

Specifications

| LN65S-FC			
Optical Specifications	**Min**	**Typical**	**Max**
Operating Wavelength[a]	1525 nm	-	1605 nm
Optical Insertion Loss	-	3.0 dB	4.5 dB
Optical Return Loss	40 dB	-	-
Optical Input Power	-	-	100 mW
Electrical Specifications	**Min**	**Typical**	**Max**
S11 (DC to 10 GHz)	-	-12 dB	-10 dB
E/O Bandwidth (-3 dB)	-	10 GHz	-
Operating Frequency Range	DC to 15 GHz (Typ.)		
RF V$_\pi$ (@ 10 GHz)	-	7.0 V	8.0 V
RF Port Input Power	-	-	24 dBm
Mechanical Specifications			
Crystal Orientation	Z-Cut		
RF Connection	Male SMP (GPO® Compatible), Full Detent		
Fiber Type	Input: PANDA Polarization Maintaining Output: SMF-28® Single Mode		
Fiber Lead Length	1.5 m (Typ.)		
Environmental Specifications	**Min**	**Typical**	**Max**
Operating Temperature	0 °C	-	70 °C
Storage Temperature	-40 °C	-	85 °C
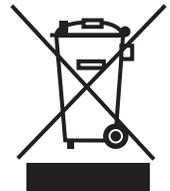
a. The modulator is designed for use at the specified wavelengths. Using the modulator at other wavelengths may cause an increase in the optical loss that is not covered under warranty. In some cases, this loss can be temporary; for instance, the increase in loss caused by shorter wavelengths can usually be reversed by heating the modulator to 80 °C for an hour.

105.0 mm (4.13")

65.0 mm (2.56")

OUTPUT THORLABS Phase Modulator INPUT

1 2 3 4

RF INPUT

7.5 mm (0.29")

7.5 mm (0.30")

#2-56 Cap Screw 2 Places

6.8 mm (0.27")

Field Replaceable SMP Connector

4.9 mm (0.19")

10.0 mm (0.39")

2.5 mm (0.10") 3 Places

##RXX000001

12.0 mm (0.47")

2.6 mm (0.10")

2.6 mm (0.10") 4 Places

2.4 mm (0.09") 2 Places

2.0 mm (0.08")

33.0 mm (1.30")

2-56 Tap 4 Places

2.0 mm (0.08")

19.8 mm (0.78")

25.4 mm (1.00")

1.6 mm (0.06")

11.4 mm (0.45")