

## Single-Channel Superluminescent Diode Light Source (Single-SLED) Integrated Spectral Bench (ISB1)

The Single-SLED Integrated Spectral Bench (ISB1) product is a compact Superluminescent Diode (SLED) solution that employs Luxmux's high-performance Optical Spectral Engine (OSE) module. The ISB1 is a broadband light source that operates in the near infrared range. It is a turn-key product that can easily be integrated into existing devices that require light power.



The Single-SLED ISB1 includes an integrated isolator and a proprietary driver and controller, each of which enable the light power to easily be adjusted. A Graphical User Interface (GUI) with a USB, RS232 or Ethernet connection allows for external monitoring and adjustment capabilities.

The Single-SLED ISB1's light output is powered by a standard FC/APC connector (FC/PC or SMA available upon request). The central wavelength of the light-output ranges from 1300nm to 1680nm, thereby delivering high-power densities across the spectral range of the SLED.

### KEY FEATURES

- User-controlled box with one SLED enclosed
- Compact and user-friendly
- Centre wavelength (CW) options: 1300nm, 1340nm, 1390nm, 1430nm, 1480nm, 1550nm, 1615nm, and 1680nm
- SLED can be run from 0% to 100% of maximum rating
- Bandwidth FWHM: 40nm-60nm
- Internally optimized for maximum coupling efficiency with PM1550-XP Fiber or PM1300-XP
- Monolithic integration of a broadband dual stage PMF isolator (35dB)
- Includes a monitor photodiode
- Light output connector: FC/APC (optional: FC/PC or SMA)
- Multiple communication interfaces: USB, RS-232, Ethernet
- Low Degree of Polarization (DOP) outputs available
- User-friendly GUI and custom API available for test automation
- Optional power meter available

### APPLICATIONS

- Optical Component Testing
- Telecom Test Equipment
- Medical Optical Coherence Tomography
- Industrial Optical Coherence Tomography
- Metrology
- Fiber Optic Gyroscopes
- Biomedical Imaging Systems
- Optical Sensing
- White Light Interferometry
- Research and Development

### LASER TYPE ORDERING OPTION

- **Low-Degree of Polarization (DOP):** the ISB1 provides under 5% DOP across entire 1250nm – 1700nm range. This minimizes polarization sensitivity of fiber sensors, and reduces the effects of polarization dependent loss
- **Power Meter:** an integrated InGaAs Power Meter can be added to ISB1 models upon customer request. The power meter adapters can come with FC/APC, FC/PC or SMA connector



## KEY MEASUREMENTS

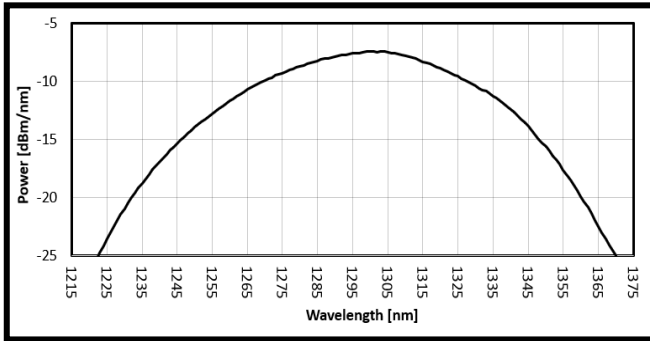
Part Number	SLED	Spectral Coverage (SC)	Full-Width Half-Maximum (FWHM)	Center Wavelength (CW)	Light Output Power (LOP)
ASMXX2XX1	1300nm	1270nm – 1330nm	60nm	1300nm	12mW
ASMXX2XX2	1340nm	1310nm – 1370nm	60nm	1340nm	12mW
ASMXX2XX3	1390nm	1360nm – 1420nm	60nm	1390nm	10mW
ASMXX2XX4	1430nm	1410nm – 1450nm	40nm	1430nm	10mW
ASMXX2XX5	1480nm	1455nm – 1505nm	50nm	1480nm	13mW
ASMXX2XX6	1550nm	1515nm – 1585nm	70nm	1550nm	15mW
ASMXX2XX7	1615nm	1585nm – 1645nm	60nm	1615nm	6mW
ASMXX2XX8	1680nm	1655nm – 1705nm	60nm	1680nm	13mW
ASMXX2XX9	1550nm	1500nm – 1600nm	70nm	1550nm	8mW
ASMXX2X12	1550nm	1532nm – 1568nm	35nm	1550nm	30mW

**Additional Information:**

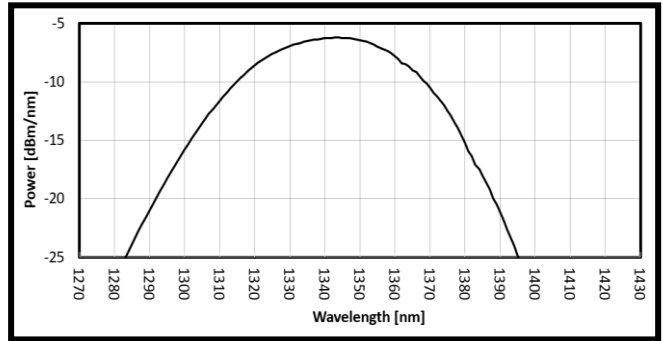
- a) Each product includes one of three different light output mechanisms (PM: polarization maintaining fiber or SM: single mode fiber), and one of two different degrees of polarization (LP: low degree of polarization or HP: high degree of polarization).
- b) XXX (e.g., ASMXXX01) has been used as a placeholder for this table. For a full ordering code for each specific product, see ORDERING CODE table below.

## TYPICAL SPECTRUMS – FIBER COUPLED MODELS

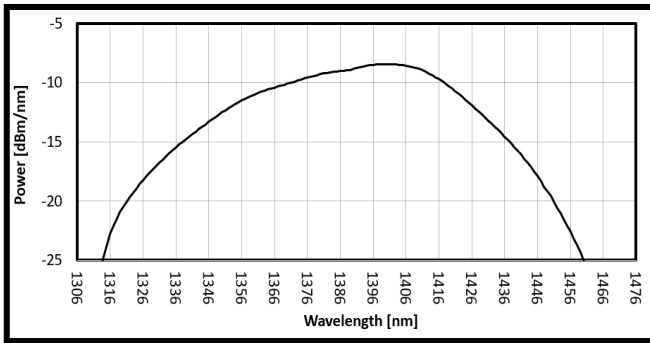
**ASMXX2X01**



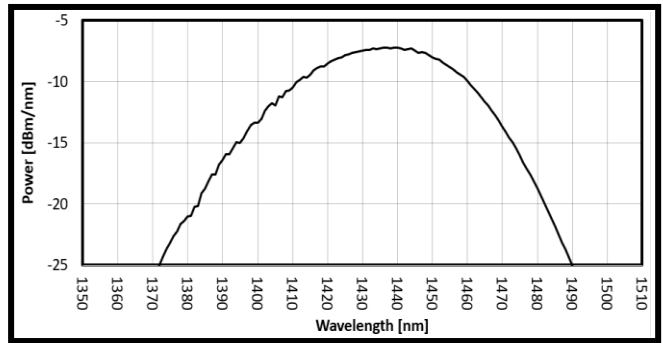
**ASMXX2X02**



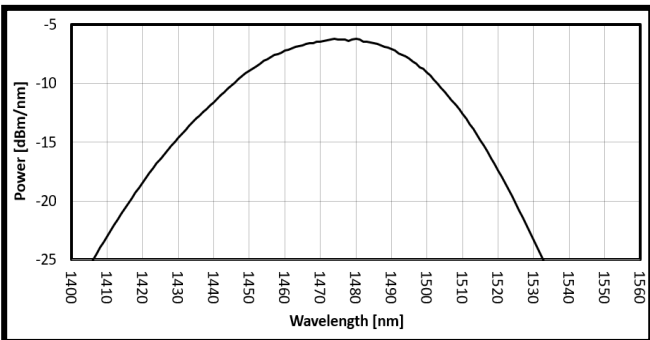
**ASMXX2X03**



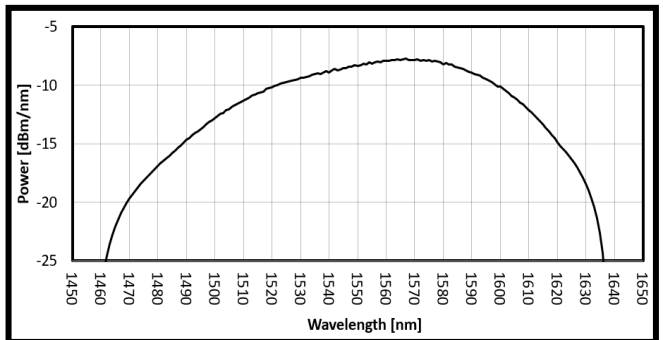
**ASMXX2X04**



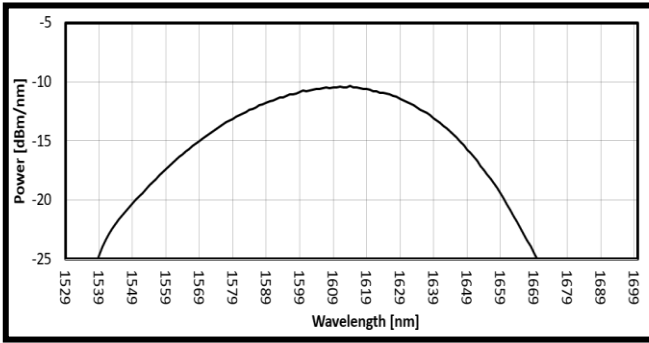
**ASMXX2X05**



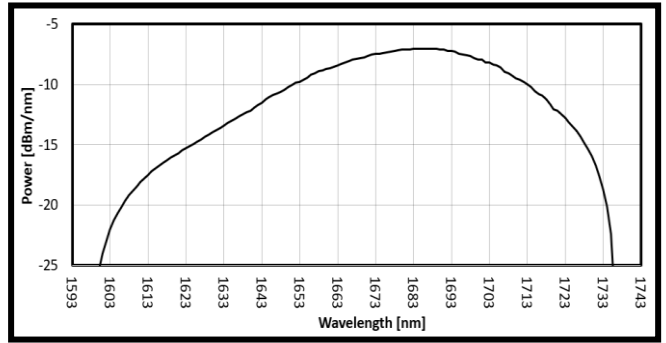
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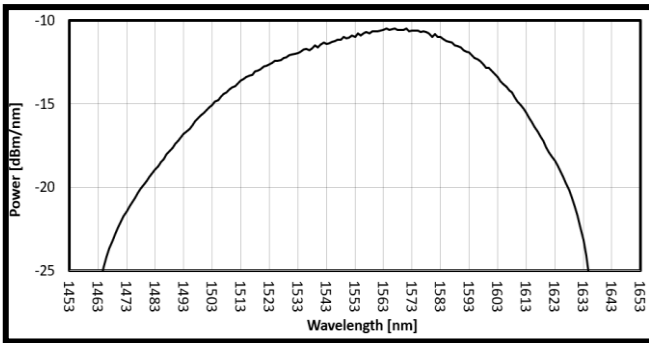
**ASMXX2X07**



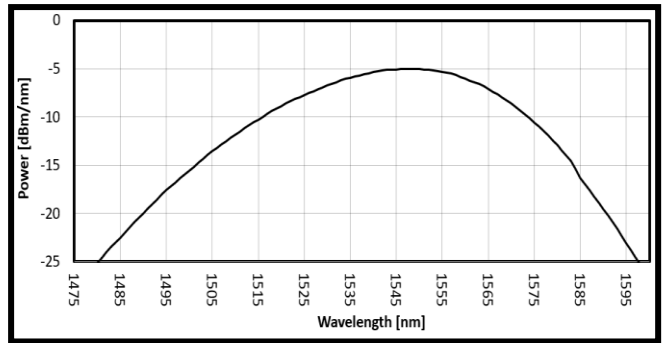
**ASMXX2X08**



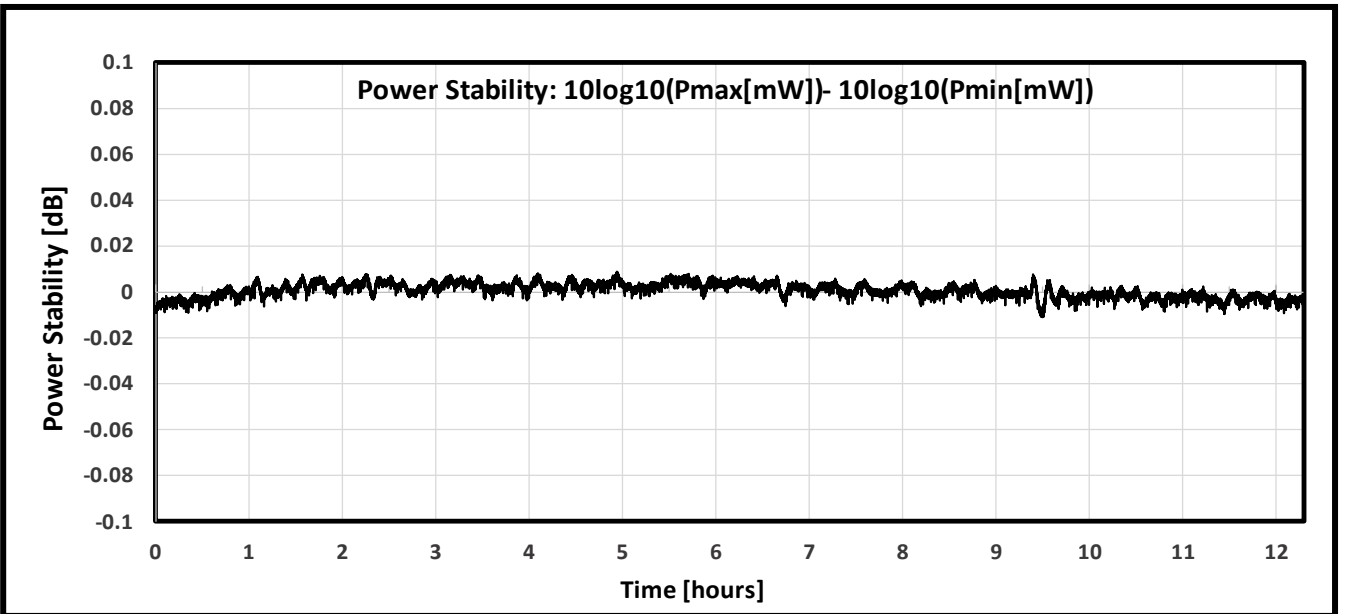
**ASMXX2X09**



**ASMXX2X12**

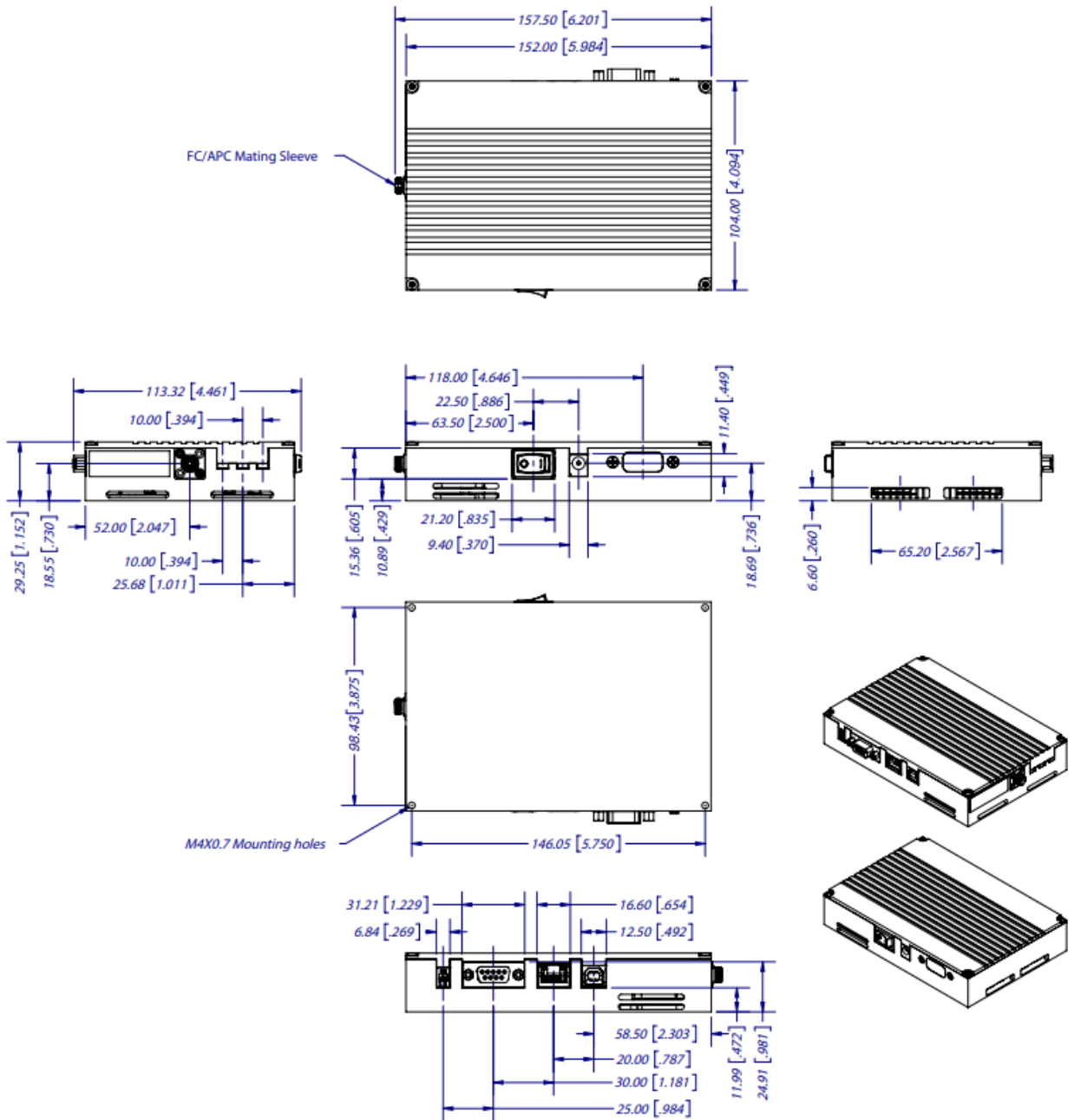


## TYPICAL POWER STABILITY

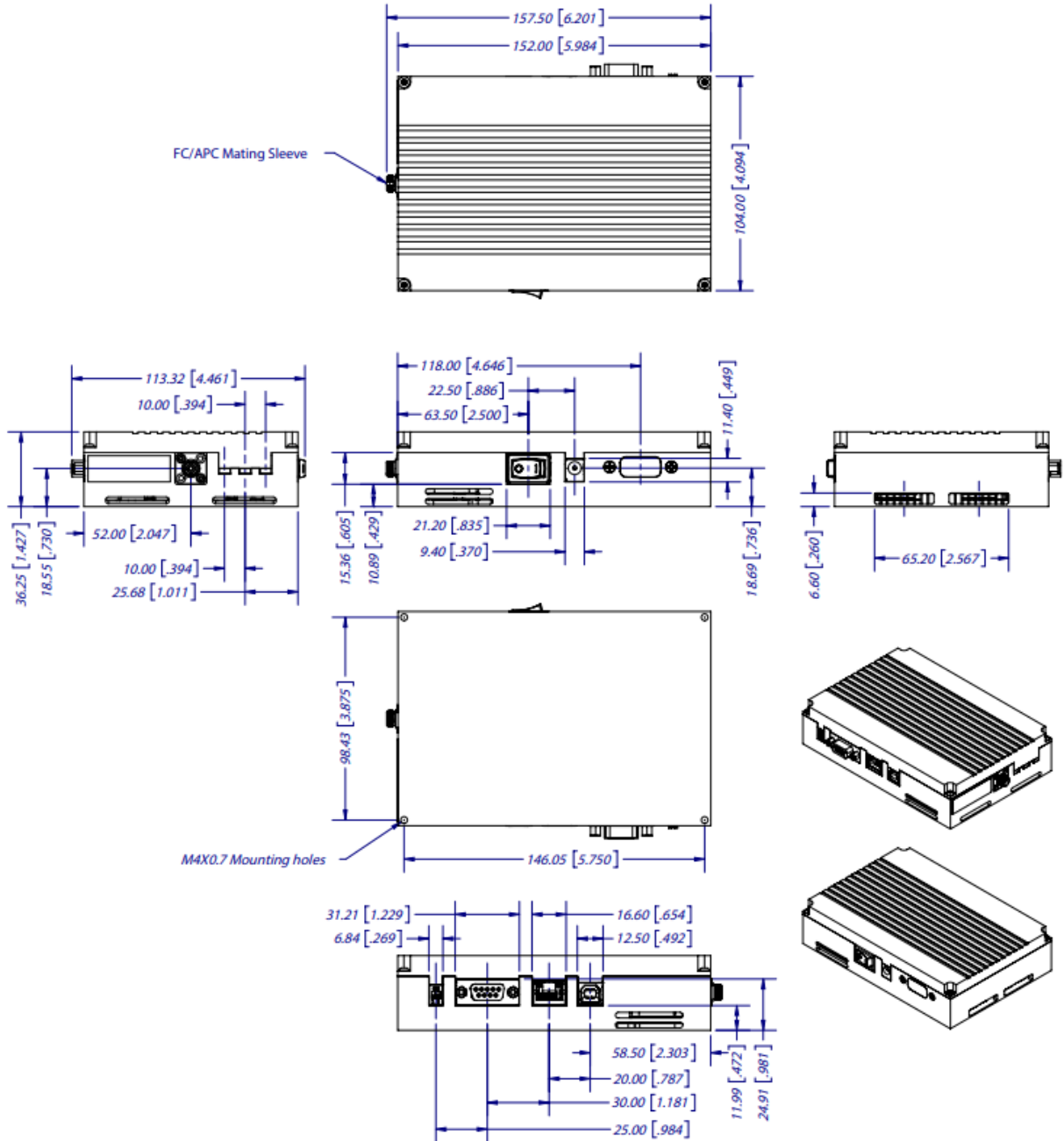


## DIMENSIONS

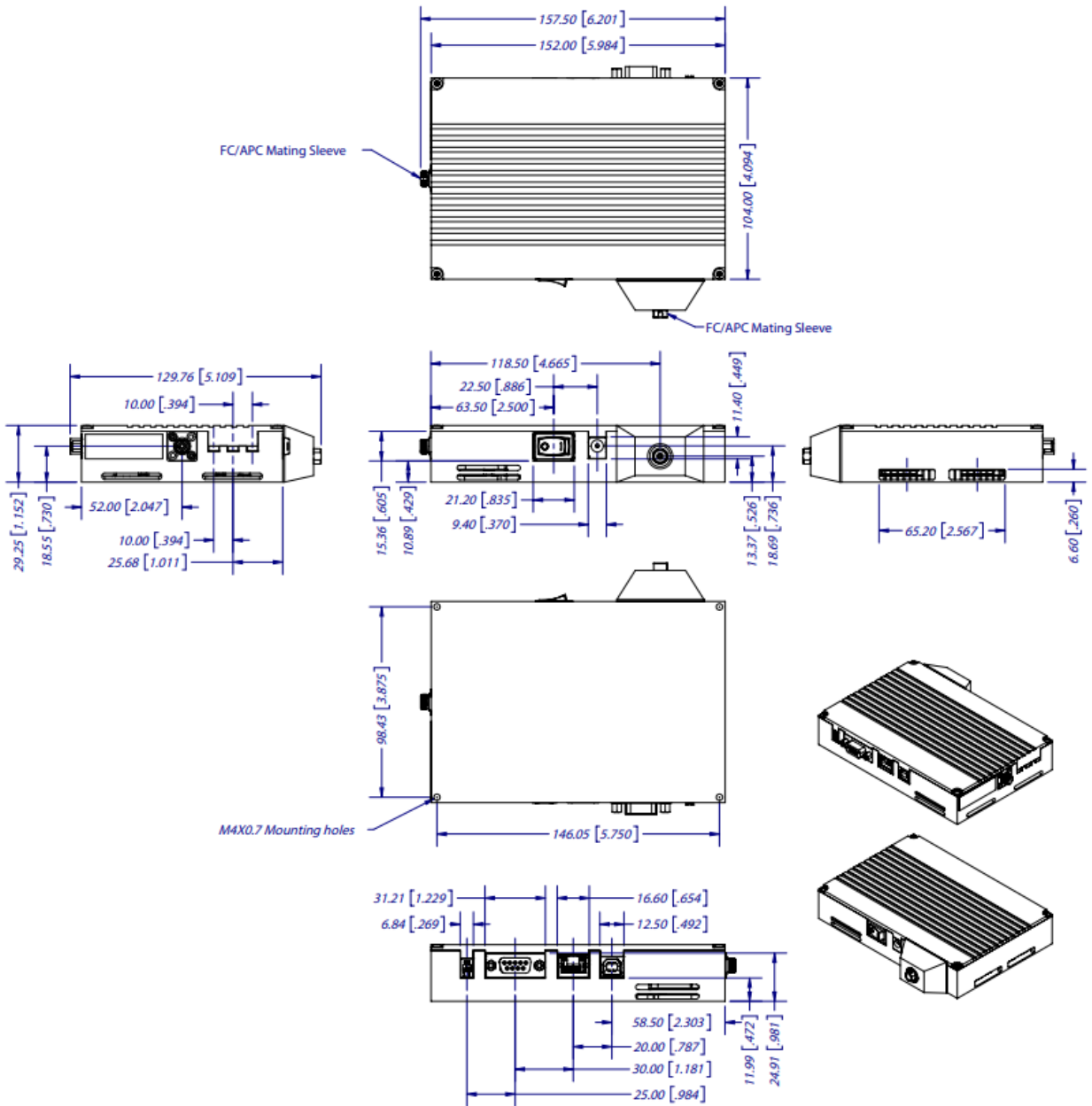
Single-SLED – Standard:



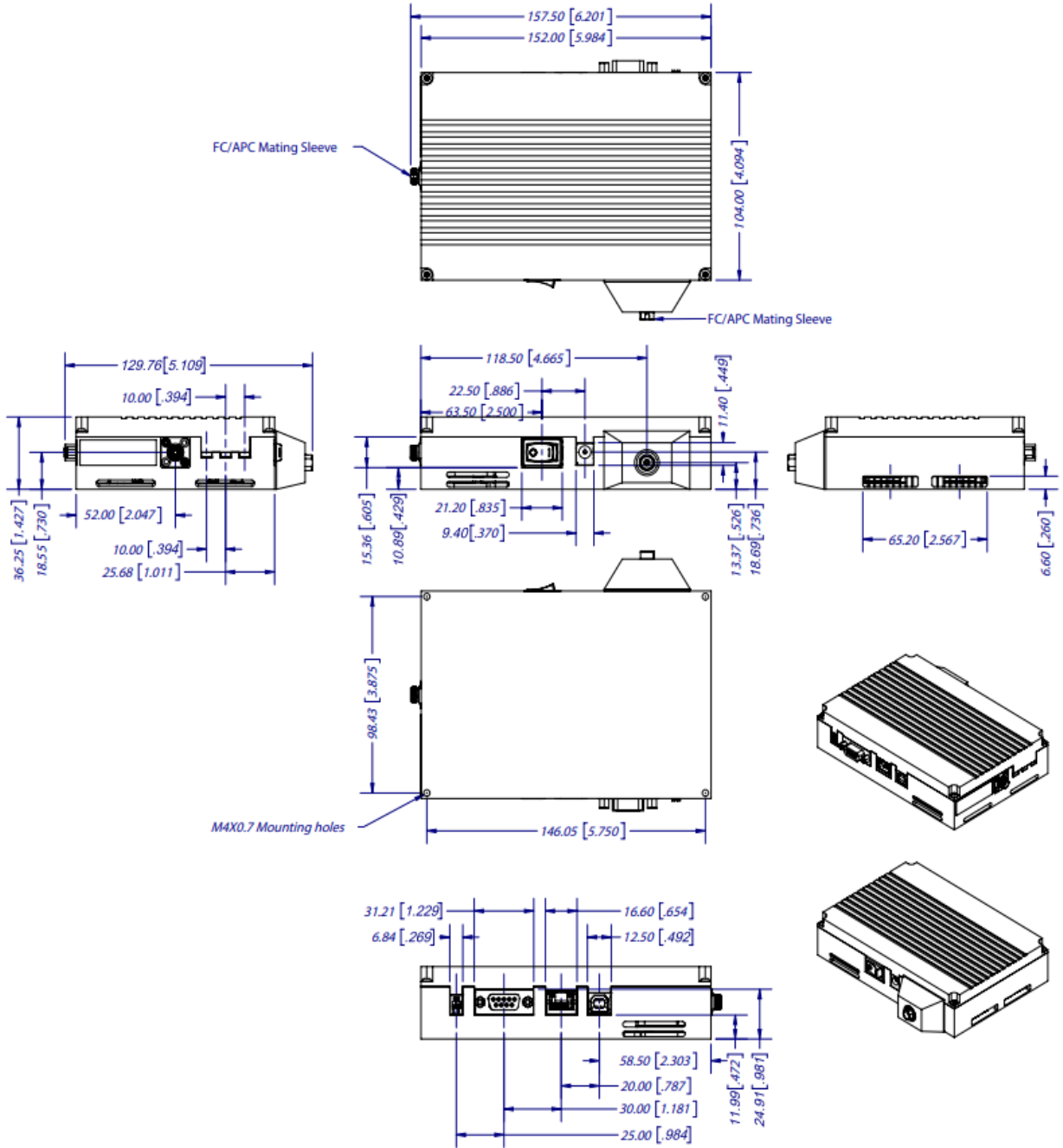
## Single-SLED – Low DOP:



## Single-SLED – Standard with Power Meter:



## Single-SLED – Low DOP with Power Meter:







# Redefining Spectral Boundaries

## ORDERING CODE

ORDERING CODE:		LTC	ISB1	SLEDs	FT	DOP	SC	FWHM	CW	LOP
LTC	Luxmux Technology Corporation									
ISB1	Single-sled® Integrated Spectral Bench G1									
SLEDs	SLED center wavelength, choose one of the following models: 1300nm, 1340nm, 1390nm, 1430nm, 1480nm, 1550nm, 1615nm, 1680nm									
FT	Fiber Type, choose 1: PM: Polarization Maintaining SM: Single Mode									
DOP	Degree of Polarization LP: Low Degree of Polarization HP: High Degree of Polarization									
SC	Spectral Coverage [nm]									
FWHM	Full Width Half Maximum [nm] [FWHM defined as the bandwidth from the lowest spectral dip]									
CW	Center Wavelength [nm]									
LOP	Light Output Power [mW]									

Product Code
Available Options
Taken From Table

Part Number	Ordering Code: LTC-ISB1-(SLED)-(FT)-(DOP)-(SC)-(FWHM)-(CW)-(LOP)	SLED [nm]	FT	SC [nm]	FWHM [nm]	CW [nm]	LOP [mW]
ASM002501	LTC-ISB1-1300-PM-HP-1270_1330-60-1300-12	1300	PM	1270-1330	60	1300	12
ASM002502	LTC-ISB1-1340-PM-HP-1310_1370-60-1340-12	1340	PM	1310-1370	60	1340	12
ASM002503	LTC-ISB1-1390-PM-HP-1360_1420-60-1390-10	1390	PM	1360-1420	60	1390	10
ASM002504	LTC-ISB1-1430-PM-HP-1410_1450-40-1430-10	1430	PM	1410-1450	40	1430	10
ASM002505	LTC-ISB1-1480-PM-HP-1455_1505-50-1480-13	1480	PM	1455-1505	50	1480	13
ASM002506	LTC-ISB1-1550-PM-HP-1515_1585-70-1550-15	1550	PM	1515-1585	70	1550	15
ASM002507	LTC-ISB1-1615-PM-HP-1585_1645-60-1615-6	1615	PM	1585-1645	60	1615	6
ASM002508	LTC-ISB1-1680-PM-HP-1655_1705-50-1680-13	1680	PM	1655-1705	50	1680	8
ASM002509	LTC-ISB1-1550-PM-HP-1500_1600-70-1550-8	1550	PM	1500-1600	70	1550	8
ASM002512	LTC-ISB1-1550-PM-HP-1532_1568-35-1550-30	1550	PM	1532-1568	35	1550	30

Part Number	Ordering Code: LTC-ISB1-(SLED)-(FT)-(DOP)-(SC)-(FWHM)-(CW)-(LOP)	SLED [nm]	FT	SC [nm]	FWHM [nm]	CW [nm]	LOP [mW]
ASM002601	LTC-ISB1-1300-SM-HP-1270_1330-60-1300-12	1300	SM	1270-1330	60	1300	12
ASM002602	LTC-ISB1-1340-SM-HP-1310_1370-60-1340-12	1340	SM	1310-1370	60	1340	12
ASM002603	LTC-ISB1-1390-SM-HP-1360_1420-60-1390-10	1390	SM	1360-1420	60	1390	10
ASM002604	LTC-ISB1-1430-SM-HP-1410_1450-40-1430-10	1430	SM	1410-1450	40	1430	10
ASM002605	LTC-ISB1-1480-SM-HP-1455_1505-50-1480-13	1480	SM	1455-1505	50	1480	13
ASM002606	LTC-ISB1-1550-SM-HP-1515_1585-70-1550-15	1550	SM	1515-1585	70	1550	15
ASM002607	LTC-ISB1-1615-SM-HP-1585_1645-60-1615-6	1615	SM	1585-1645	60	1615	6
ASM002608	LTC-ISB1-1680-SM-HP-1655_1705-50-1680-13	1680	SM	1655-1705	50	1680	8
ASM002609	LTC-ISB1-1550-SM-HP-1500_1600-70-1550-8	1550	SM	1500-1600	70	1550	8
ASM002612	LTC-ISB1-1550-SM-HP-1532_1568-35-1550-30	1550	SM	1532-1568	35	1550	30

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## Redefining Spectral Boundaries

Part Number	Ordering Code: LTC-ISB1-(SLED)-(FT)-(DOP)-(SC)-(FWHM)-(CW)-(LOP)	SLED [nm]	FT	SC [nm]	FWHM [nm]	CW [nm]	LOP [mW]
ASM002701	LTC-ISB1-1300-SM-LP-1270_1330-60-1300-12	1300	SM	1270-1330	60	1300	12
ASM002702	LTC-ISB1-1340-SM-LP-1310_1370-60-1340-12	1340	SM	1310-1370	60	1340	12
ASM002703	LTC-ISB1-1390-SM-LP-1360_1420-60-1390-10	1390	SM	1360-1420	60	1390	10
ASM002704	LTC-ISB1-1430-SM-LP-1410_1450-40-1430-10	1430	SM	1410-1450	40	1430	10
ASM002705	LTC-ISB1-1480-SM-LP-1455_1505-50-1480-13	1480	SM	1455-1505	50	1480	13
ASM002706	LTC-ISB1-1550-SM-LP-1515_1585-70-1550-15	1550	SM	1515-1585	70	1550	15
ASM002707	LTC-ISB1-1615-SM-LP-1585_1645-60-1615-6	1615	SM	1585-1645	60	1615	6
ASM002708	LTC-ISB1-1680-SM-LP-1655_1705-50-1680-13	1680	SM	1655-1705	50	1680	8
ASM002709	LTC-ISB1-1550-SM-LP-1500_1600-70-1550-8	1550	SM	1500-1600	70	1550	8
ASM002712	LTC-ISB1-1550-SM-LP-1532_1568-35-1550-30	1550	SM	1532-1568	35	1550	30

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