

C482, C484, and C486 (C48-Type) 2.5 Gb/s Cooled Laser Transmitters



Offering multiple output power options and SONET/SDH compatibility, the C48-Type 2.5 Gb/s Cooled Laser Transmitters are manufactured in a 24-pin plastic DIP with a single-mode fiber pigtail.

Features

- Data rates to 2.5 Gb/s
- Two-channel selectable at 100 GHz spacing
- SONET and ITU-T compliant at OC-48 and STM-16
- Cooled, InGaAsP MQW-DFB laser
- Wavelength range, 1528.77 nm—1563.86 nm
- User-selectable wavelengths
- Clocked or nonclocked operation with single-ended inputs; clocked operation with differential input
- 50 Ω ac-coupled PECL compatible data and clock inputs
- Operation from 3.3 V and 5 V power supplies
- Low-profile, 24-pin package
- Automatic optical power control

- Wide operating case temperature range, -15°C to $+70^{\circ}\text{C}$
- Laser bias monitor alarm/laser degrade alarm
- Laser back-facet monitor output
- Transmitter-enable input
- FC/PC, SC/PC, LU or MU connectors

Applications

- Telecommunications:
 - SONET/SDH SR/IR/LR
 - Subscriber loop
 - Metropolitan area networks
- High-speed data communications

Description

The C48-type 2.5 Gb/s cooled laser transmitters are designed for use in transmission systems and high-speed data communication applications. The transmitter operates at the SONET OC-48 rate, as well as the ITU-T SDH rate of STM-16. The device supports two wavelengths. The second wavelength is selectable via pin 10.

The transmitters meet all present *Telcordia Technologies*TM GR-253-CORE requirements and the ITU-T G.957 and G.958 recommendations. They are also ideally suited for extended-distance data and networking applications.

Manufactured in a 24-pin DIP, the transmitter incorporates a hermetic multiquantum well (MQW) isolated 1550 nm digital distributed feedback (DFB) laser (D2526 versions), an InGaAs PIN photodiode back-facet monitor, and a GaAs laser driver IC. The unit uses two power supplies. The laser transmitter requires 5 V, and the thermoelectric cooler (TEC) requires 3.3 V. The clock may be enabled for those applications where jitter is critical.

Pin information is listed in Table 1.

Transmitter Processing

The transmitter can withstand normal wave soldering processes. The complete transmitter module is not hermetically sealed; therefore, it should not be immersed in, or sprayed with, any cleaning solution or solvents. The process cap and fiber pigtail jacket can deform at temperatures greater than 85 °C. The transmitter pins can be wave-soldered at a maximum temperature of 250 °C for 10 seconds.

Installation Considerations

Although the transmitter has been designed with ruggedness in mind, care should be used during handling. The optical connector should be kept free from dust, and the process cap should be kept in place as a dust cover when the device is not connected to a cable. If contamination is present on the optical connector, the use of canned air with an extension tube should remove any debris. Other cleaning procedures are identified in the *Cleaning Fiber-Optic Assemblies* Technical Note (TN95-010LWP).

Connector Options

The standard fiber-optic pigtail is an 8 μm core single-mode fiber in a 0.036 in. (914 μm) diameter, tight-buffered outer jacket. The standard length is 39 in. ± 4 in. (1 m ± 10 cm) and is terminated with an FC/PC, SC/PC, LC, or MU optical connector. Other connector options may be available on special order. Please contact your Account Manager at CyOptics for ordering information.

Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operations sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Min	Max	Unit
Supply Voltage	—	—	5.25	V
Operating Case Temperature Range	T _C	-15	70	°C
Storage Case Temperature Range	T _{stg}	-40	85	°C
Lead Soldering Temperature/Time	—	—	250/10	°C/s
Relative Humidity (noncondensing)	RH	—	85	%
Minimum Fiber-bend Radius	—	1.00 (25.4)	—	in. (mm)
TEC Voltage	V _{TEC}	—	3.5	V

Table 1. Pin Descriptions

Pin Number	Name
1	Ground (TEC)
2	Back-facet Monitor ¹
3	Bias Monitor/Laser Degrade Alarm ¹
4	Tx Enable
5	Clock Select
6	Ground
7	Wavelength-Deviation Error Alarm
8	NUC ²
9	NUC ²
10	Wavelength Selection Command ³
11	Ground
12	VEE ⁴
13	Vcc
14	VTEC (TEC supply voltage)
15	Ground
16	DATA
17	Ground
18	DATA
19	Ground
20	CLOCK
21	Ground
22	CLOCK
23	Ground
24	Vcc

1. Laser back-facet (pin 2) and bias alarm functions (pin 3) are customer-use options that are not required for normal operations of the transmitter and are normally used during manufacture and for diagnostics. Pin 3 output will optionally be either an analog bias monitor (default) or a digital logic signal (LDA). (See Table 2.)
2. Pins designated no user connection (NUC) must **not** be tied to ground or any other circuit potential.
3. When logic 0, the nominal channel wavelength (n) is selected; when logic 1, the n – 1 channel wavelength is selected.
4. VEE is not used. This pin is NUC. The VEE labeling is maintained for MSA purposes.

Characteristics

Minimum and maximum values specified over operating case temperature range at 50% duty cycle data signal. Typical values are measured at room temperature unless otherwise noted.

Table 2. Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
dc Power Supply Voltage	V _{CC}	4.75	5.0	5.25	V
dc Power Supply Current:					
C482, C484	I _{CC}	—	350	400	mA
C486	I _{CC}	—	—	500	mA
Power Dissipation	P _{DIS}	—	4.5	5.2	W
Input Data/Clock Voltage: ^{1, 2}					
Single-ended Input	V _{IN}	250	900	1300	mVp-p
Differential Input	V _{IN}	125	450	650	mVp-p
Nonclocked/Clocked Select Voltage: ^{3, 4}					
Clocked Operation	V _{SEL_CLK}	0.0	—	0.8	V
Nonclocked Operation	V _{DIS_CLK}	2.0	—	V _{CC}	V
Input Impedance	R _{IN}	—	50	—	Ω
Transmitter Enable Voltage (TTL) V _{IL}	V _{EN}	0.0	—	0.8	V
Transmitter Disable Voltage (TTL) V _{IH}	V _{DIS}	2.0	—	V _{CC}	V
Wavelength Selection Voltage (TTL) V _{IL} ⁵	V _{λN}	0.0	—	0.8	V
Wavelength Selection Voltage (TTL) V _{IH} ⁵	V _{λN-1}	2.0	—	V _{CC}	V
λ Deviation Alarm:					
Levels (CMOS) V _{OL}	V _{NO-λALARM}	0	—	0.3	V
Levels (CMOS) V _{OH}	V _{λALARM}	4.5	—	V _{CC}	V
Setting (active-high) ⁶	λ _{ALARM}	-100	—	100	pm
Laser Bias Monitor Voltage (default)	V _{LBM}	—	20	—	mV/mA
Laser Degrade Alarm (option):					
Levels (CMOS) V _{OH}	V _{NO-ALARM}	4.5	—	V _{CC}	V
Levels (CMOS) V _{OL}	V _{ALARM}	0	—	0.3	V
Setting (active-low)	LD _{ALARM}	—	—	55	mA
Laser Back-facet Monitor Voltage (50% duty cycle) ⁷	V _{BF}	—	500	—	mV/mW
Clock Duty Cycle	C _{DC}	40	50	60	%
TEC Current	I _{TEC}	—	0.6	1.2	A
TEC Voltage	V _{TEC}	3.0	3.3	3.5	V
Return Loss: ^{8,9}					
Input Data	RL _{DATA}	-10	—	—	dB
Input Clock	RL _{CLK}	-12	—	—	dB

- Inputs are ac-coupled into an equivalent input impedance of 50 Ω.
- Single-ended or differential operation may be used. If the inputs are driven single-ended, the unused inputs must be terminated in 50 Ω.
- Clocked operation is optional. For clocked operation, pin 5 must be a logic 0. With clocked operation, the optical output changes state with the rising edge of the input clock signal.
- If left unselected, clocked operation will be selected.
- λ_N is the ITU center wavelength, where N is the ITU frequency product designator ranging from 17 to 61. For example, if N = 23, then λ_N = 1558.98 nm (f_N = 192.3 THz) and λ_{N-1} = 1559.79 nm (f_{N-1} = 192.2 THz).
- Deviation due to temperature variation detected by the thermistor.
- This voltage is measured from pin 2 to GND.
- Frequency range: 100 kHz—2 GHz.
- At frequency of 2.5 GHz.

Characteristics (continued)

Table 3. Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Average Optical Power Output: ¹ C482, C484	P _{AVG BOL}	0	1.0	2.0	dBm
	P _{AVG EOL}	-0.5	—	2.0	dBm
Average Optical Power Output: ¹ C486	P _{AVG BOL}	6.0	6.7	8.0	dBm
	P _{AVG EOL}	5.5	—	8.5	dBm
Output Power Variation (over temperature and wavelength)	ΔP	-0.5	—	0.5	dBm
Center Wavelength Range (See Tables 6—21.)	λ _C	1528.77	—	1563.86	nm
Wavelength Accuracy ²	Δλ _C	-15	—	15	pm
Wavelength Variation and Aging ²	Δλ _C	-100	—	100	pm
Wavelength Chirp (on-state/off-state λ) ³	Δλ	—	—	200	pm
Side-mode Suppression Ratio ⁴	SMSR	30	—	—	dB
Jitter, Intrinsic ⁵	—	—	—	0.05	Ulp-p
Extinction Ratio ⁶	r _e	8.2	—	—	dB
Eye Mask of Optical Output ^{7, 8}	—	Meets SONET and ITU-T			—
Optical Rise/Fall Time (20%—80%): C482, C484	t _R , t _F	—	—	130	ps
	t _R , t _F	—	—	150	ps
Maximum Return Loss (optical)	ORL	—	—	24	dB

1. Output power definitions and measurement per ITU-T Recommendation G.957.

2. At room temperature; takes into account the initial variation in temperature as well as long-term aging. Please refer to the application note, *Wavelength Tolerance in DWDM* for more information on this value.

3. Measured using time resolved spectroscopy (TRS). This corresponds to approximately 0.3 nm maximum at full width 20 dB down using a spectrometer with resolution of 0.05 nm.

4. Ratio of the average output power in the dominant longitudinal mode to the power in the most significant side mode under fully modulated conditions.

5. Filter bandwidth from 12 kHz—20 MHz, according to ITU-T G813.

6. Ratio of logic 1 output power to logic 0 output under fully modulated conditions; with fourth-order Bessel-Thomson filter on.

7. GR-253-CORE, *Synchronous Optical Network (SONET) Transport Systems: Common Generic Criteria*.

8. ITU-T Recommendation G.957, *Optical Interfaces for Equipment and Systems Relating to the Synchronous Digital Hierarchy*.

Characteristics (continued)

Table 4. Dispersion Performance

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dispersion Penalty for Extended Reach: C482, C486	DP	1800 ps/nm	—	—	2.0	dB
C484	DP	3000 ps/nm	—	—	2.0	dB

Table 5. Data Timing

Symbol	Setup (Min)	Hold (Min)	Unit
t1	35	—	ps
t2	—	60	ps

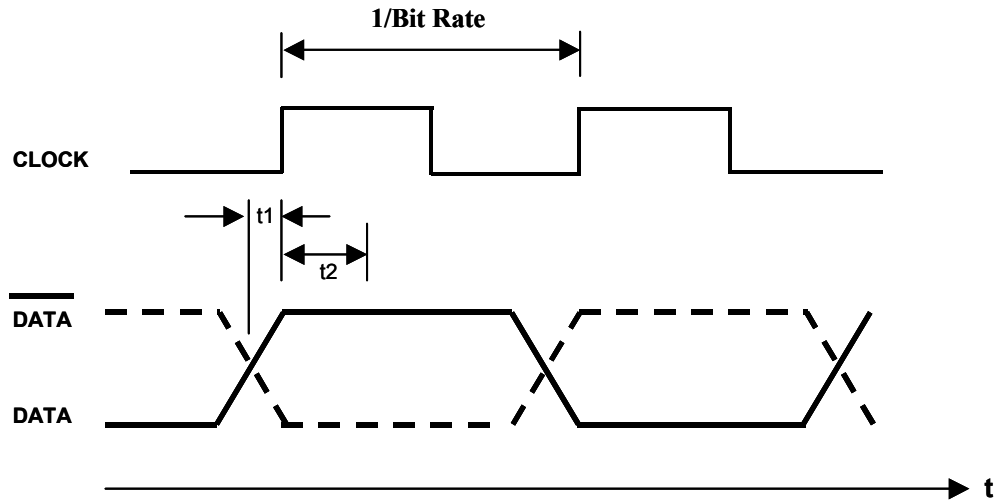
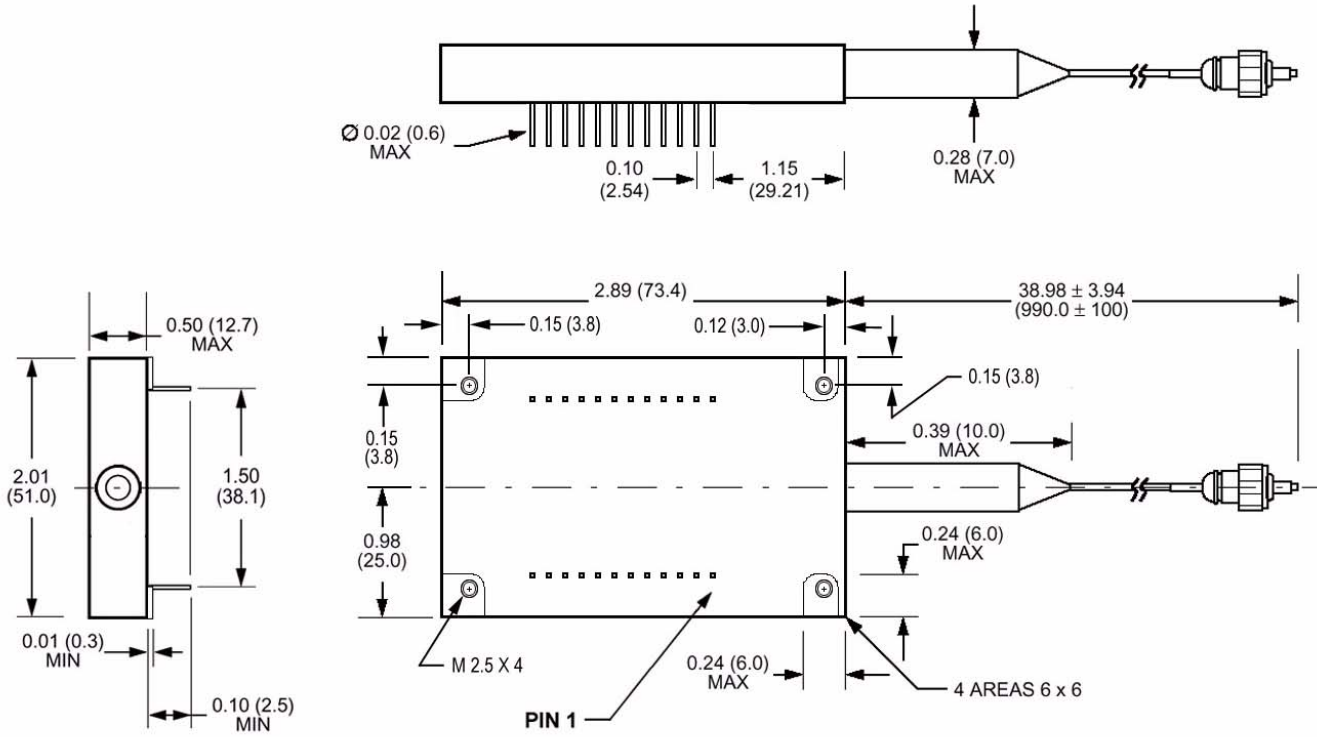


Figure 1. Data Timing Diagram

Outline Drawings

Dimensions are in inches and (millimeters).



Qualification and Reliability

To help ensure high product reliability and customer satisfaction, CyOptics is committed to an intensive quality program that starts in the design phase and proceeds through the manufacturing process. Optoelectronics modules are qualified to CyOptics' internal standards using MIL-STD-883 test methods and procedures and using sampling techniques consistent with *Telcordia Technologies* requirements. This qualification program fully meets the intent of *Telcordia Technologies* reliability practices TR-NWT-000468 and TA-TSY-000983. In addition, the CyOptics optoelectronics design, development, and manufacturing facility has been certified to be in full compliance with the latest ISO[®] 9001 Quality System Standards.

Electrostatic Discharge

CAUTION: This device is susceptible to damage as a result of electrostatic discharge. Take proper precautions during both handling and testing. Follow guidelines such as JEDEC Publication No. 108-A (Dec. 1988).

CyOptics employs a human-body model (HBM) for ESD-susceptibility testing and protection-design evaluation. ESD voltage thresholds are dependent on the critical parameters used to define the model. A standard HBM (resistance = 1.5 k Ω , capacitance = 100 pF) is widely used and can be used for comparison purposes.

Laser Safety Information

Class I Laser Product

FDA/CDRH Class I laser product. The C482-Type and C484-Type Transmitters are Class I laser products per CDRH, 21 CFR 1040 Laser Safety requirements. Both versions are Class I laser products per IEC[®] 60825-1:1993.

This product complies with 21 CFR 1040.10 and 1040.11.

8 μm /125 μm single-mode fiber with 914 μm tight-buffered cladding, and connector

Wavelength = 1528.77 nm—1563.86 nm

Maximum power = 1.6 mW

Product is not shipped with power supply.

Caution: Use of controls, adjustments, and procedures other than those specified herein may result in hazardous laser radiation exposure.

NOTICE
UNTERMINATED OPTICAL CONNECTORS CAN EMIT LASER RADIATION. DO NOT VIEW WITH OPTICAL INSTRUMENTS.

Laser Safety Information (continued)

Class I/Class 3A Laser Product

FDA/CDRH Class I laser product. The C486-Type Transmitter is a Class I laser product per CDRH, 21 CFR 1040 Laser Safety requirements. The C486-Type Transmitter is a Class 3A laser product per *IEC* 60825-1:1993. The device can be referenced to FDA Accession Number 0020283 and the *IEC* certificate USA/T2179074.

This product complies with 21 CFR 1040.10 and 1040.11.

8 μm /125 μm single-mode fiber with 914 μm tight-buffered cladding, and connector.

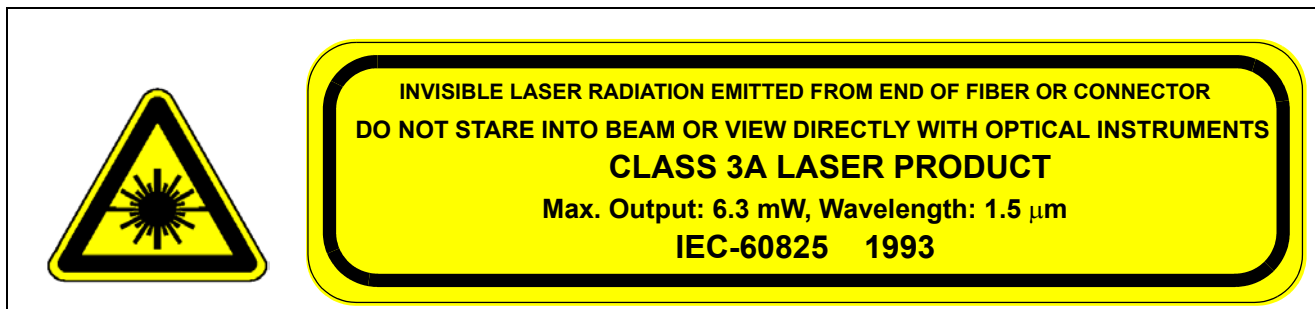
Wavelength = 1528.77 nm—1563.86 nm.

Maximum power = 6.3 mW under normal operating conditions.

Product is not shipped with power supply.

Caution: Use of controls, adjustments, and procedures other than those specified herein may result in hazardous laser radiation exposure.

NOTICE
UNTERMINATED OPTICAL CONNECTORS CAN EMIT LASER RADIATION. DO NOT VIEW WITH OPTICAL INSTRUMENTS.



Ordering Information

Table 6. C482-Type Transmitter with FC/PC Connector and Analog Bias Monitor

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C482FD17	108522459	191.7	1563.86	FC/PC
C482FD18	108522467	191.8	1563.05	FC/PC
C482FD19	108522541	191.9	1562.23	FC/PC
C482FD20	108522558	192.0	1561.42	FC/PC
C482FD21	108522566	192.1	1560.61	FC/PC
C482FD22	108522574	192.2	1559.79	FC/PC
C482FD23	108522582	192.3	1558.98	FC/PC
C482FD24	108522608	192.4	1558.17	FC/PC
C482FD25	108522616	192.5	1557.36	FC/PC
C482FD26	108522624	192.6	1556.55	FC/PC
C482FD27	108522632	192.7	1555.75	FC/PC
C482FD28	108522640	192.8	1554.94	FC/PC
C482FD29	108522657	192.9	1554.13	FC/PC
C482FD30	108522665	193.0	1553.33	FC/PC
C482FD31	108522673	193.1	1552.52	FC/PC
C482FD32	108522681	193.2	1551.72	FC/PC
C482FD33	108522699	193.3	1550.92	FC/PC
C482FD34	108522707	193.4	1550.12	FC/PC
C482FD35	108522715	193.5	1549.32	FC/PC
C482FD36	108522723	193.6	1548.51	FC/PC
C482FD37	108522731	193.7	1547.72	FC/PC
C482FD38	108522905	193.8	1546.92	FC/PC
C482FD39	108522913	193.9	1546.12	FC/PC
C482FD40	108522921	194.0	1545.32	FC/PC
C482FD41	108522939	194.1	1544.53	FC/PC
C482FD42	108522947	194.2	1543.73	FC/PC
C482FD43	108522954	194.3	1542.94	FC/PC
C482FD44	108522962	194.4	1542.14	FC/PC
C482FD45	108522970	194.5	1541.35	FC/PC
C482FD46	108522988	194.6	1540.56	FC/PC
C482FD47	108522996	194.7	1539.77	FC/PC
C482FD48	108523036	194.8	1538.98	FC/PC
C482FD49	108523044	194.9	1538.19	FC/PC
C482FD50	108523051	195.0	1537.40	FC/PC
C482FD51	108523069	195.1	1536.61	FC/PC
C482FD52	108523077	195.2	1535.82	FC/PC
C482FD53	108523085	195.3	1535.04	FC/PC
C482FD54	108523093	195.4	1534.25	FC/PC
C482FD55	108523101	195.5	1533.47	FC/PC
C482FD56	108523119	195.6	1532.68	FC/PC
C482FD57	108523127	195.7	1531.90	FC/PC
C482FD58	108523135	195.8	1531.12	FC/PC
C482FD59	108523143	195.9	1530.33	FC/PC
C482FD60	108523150	196.0	1529.55	FC/PC
C482FD61	108523168	196.1	1528.77	FC/PC

Ordering Information (continued)

Table 7. C482-Type Transmitter with FC/PC Connector and Digital LDA

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C482FA17	108681362	191.7	1563.86	FC/PC
C482FA18	108681388	191.8	1563.05	FC/PC
C482FA19	108681396	191.9	1562.23	FC/PC
C482FA20	108681388	192.0	1561.42	FC/PC
C482FA21	108681404	192.1	1560.61	FC/PC
C482FA22	108681412	192.2	1559.79	FC/PC
C482FA23	108681420	192.3	1558.98	FC/PC
C482FA24	108681438	192.4	1558.17	FC/PC
C482FA25	108681446	192.5	1557.36	FC/PC
C482FA26	108681453	192.6	1556.55	FC/PC
C482FA27	108681461	192.7	1555.75	FC/PC
C482FA28	108681479	192.8	1554.94	FC/PC
C482FA29	108681487	192.9	1554.13	FC/PC
C482FA30	108681495	193.0	1553.33	FC/PC
C482FA31	108681503	193.1	1552.52	FC/PC
C482FA32	108681511	193.2	1551.72	FC/PC
C482FA33	108681529	193.3	1550.92	FC/PC
C482FA34	108681537	193.4	1550.12	FC/PC
C482FA35	108681545	193.5	1549.32	FC/PC
C482FA36	108681552	193.6	1548.51	FC/PC
C482FA37	108681560	193.7	1547.72	FC/PC
C482FA38	108681578	193.8	1546.92	FC/PC
C482FA39	108681586	193.9	1546.12	FC/PC
C482FA40	108681594	194.0	1545.32	FC/PC
C482FA41	108681602	194.1	1544.53	FC/PC
C482FA42	108681610	194.2	1543.73	FC/PC
C482FA43	108681628	194.3	1542.94	FC/PC
C482FA44	108681636	194.4	1542.14	FC/PC
C482FA45	108681750	194.5	1541.35	FC/PC
C482FA46	108681768	194.6	1540.56	FC/PC
C482FA47	108681776	194.7	1539.77	FC/PC
C482FA48	108681784	194.8	1538.98	FC/PC
C482FA49	108681792	194.9	1538.19	FC/PC
C482FA50	108681800	195.0	1537.40	FC/PC
C482FA51	108681818	195.1	1536.61	FC/PC
C482FA52	108681826	195.2	1535.82	FC/PC
C482FA53	108681834	195.3	1535.04	FC/PC
C482FA54	108681842	195.4	1534.25	FC/PC
C482FA55	108681859	195.5	1533.47	FC/PC
C482FA56	108681867	195.6	1532.68	FC/PC
C482FA57	108681875	195.7	1531.90	FC/PC
C482FA58	108681883	195.8	1531.12	FC/PC
C482FA59	108681891	195.9	1530.33	FC/PC
C482FA60	108681909	196.0	1529.55	FC/PC
C482FA61	108681917	196.1	1528.77	FC/PC

Ordering Information (continued)

Table 8. C482-Type Transmitter with SC/PC Connector and Analog Bias Monitor

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C482CD17	108642281	191.7	1563.86	SC/PC
C482CD18	108642299	191.8	1563.05	SC/PC
C482CD19	108642307	191.9	1562.23	SC/PC
C482CD20	108642315	192.0	1561.42	SC/PC
C482CD21	108642323	192.1	1560.61	SC/PC
C482CD22	108642331	192.2	1559.79	SC/PC
C482CD23	108642349	192.3	1558.98	SC/PC
C482CD24	108642356	192.4	1558.17	SC/PC
C482CD25	108642364	192.5	1557.36	SC/PC
C482CD26	108642372	192.6	1556.55	SC/PC
C482CD27	108642380	192.7	1555.75	SC/PC
C482CD28	108642398	192.8	1554.94	SC/PC
C482CD29	108642406	192.9	1554.13	SC/PC
C482CD30	108642414	193.0	1553.33	SC/PC
C482CD31	108642422	193.1	1552.52	SC/PC
C482CD32	108642430	193.2	1551.72	SC/PC
C482CD33	108642638	193.3	1550.92	SC/PC
C482CD34	108642646	193.4	1550.12	SC/PC
C482CD35	108642653	193.5	1549.32	SC/PC
C482CD36	108642661	193.6	1548.51	SC/PC
C482CD37	108642679	193.7	1547.72	SC/PC
C482CD38	108642687	193.8	1546.92	SC/PC
C482CD39	108642695	193.9	1546.12	SC/PC
C482CD40	108642729	194.0	1545.32	SC/PC
C482CD41	108642737	194.1	1544.53	SC/PC
C482CD42	108642745	194.2	1543.73	SC/PC
C482CD43	108642760	194.3	1542.94	SC/PC
C482CD44	108642778	194.4	1542.14	SC/PC
C482CD45	108642786	194.5	1541.35	SC/PC
C482CD46	108642802	194.6	1540.56	SC/PC
C482CD47	108642810	194.7	1539.77	SC/PC
C482CD48	108642844	194.8	1538.98	SC/PC
C482CD49	108642869	194.9	1538.19	SC/PC
C482CD50	108642877	195.0	1537.40	SC/PC
C482CD51	108642885	195.1	1536.61	SC/PC
C482CD52	108642893	195.2	1535.82	SC/PC
C482CD53	108642901	195.3	1535.04	SC/PC
C482CD54	108642919	195.4	1534.25	SC/PC
C482CD55	108642927	195.5	1533.47	SC/PC
C482CD56	108642935	195.6	1532.68	SC/PC
C482CD57	108642943	195.7	1531.90	SC/PC
C482CD58	108642950	195.8	1531.12	SC/PC
C482CD59	108642968	195.9	1530.33	SC/PC
C482CD60	108642976	196.0	1529.55	SC/PC
C482CD61	108642984	196.1	1528.77	SC/PC

Ordering Information (continued)

Table 9. C482-Type Transmitter with SC/PC Connector and Digital LDA

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C482CA17	108681925	191.7	1563.86	SC/PC
C482CA18	108681933	191.8	1563.05	SC/PC
C482CA19	108681941	191.9	1562.23	SC/PC
C482CA20	108681958	192.0	1561.42	SC/PC
C482CA21	108681966	192.1	1560.61	SC/PC
C482CA22	108681974	192.2	1559.79	SC/PC
C482CA23	108681982	192.3	1558.98	SC/PC
C482CA24	108681990	192.4	1558.17	SC/PC
C482CA25	108682006	192.5	1557.36	SC/PC
C482CA26	108682014	192.6	1556.55	SC/PC
C482CA27	108682022	192.7	1555.75	SC/PC
C482CA28	108682030	192.8	1554.94	SC/PC
C482CA29	108682048	192.9	1554.13	SC/PC
C482CA30	108682055	193.0	1553.33	SC/PC
C482CA31	108682063	193.1	1552.52	SC/PC
C482CA32	108682071	193.2	1551.72	SC/PC
C482CA33	108682097	193.3	1550.92	SC/PC
C482CA34	108682105	193.4	1550.12	SC/PC
C482CA35	108682113	193.5	1549.32	SC/PC
C482CA36	108682154	193.6	1548.51	SC/PC
C482CA37	108682162	193.7	1547.72	SC/PC
C482CA38	108682170	193.8	1546.92	SC/PC
C482CA39	108682188	193.9	1546.12	SC/PC
C482CA40	108682196	194.0	1545.32	SC/PC
C482CA41	108682204	194.1	1544.53	SC/PC
C482CA42	108682212	194.2	1543.73	SC/PC
C482CA43	108682220	194.3	1542.94	SC/PC
C482CA44	108682238	194.4	1542.14	SC/PC
C482CA45	108682246	194.5	1541.35	SC/PC
C482CA46	108682253	194.6	1540.56	SC/PC
C482CA47	108682261	194.7	1539.77	SC/PC
C482CA48	108682279	194.8	1538.98	SC/PC
C482CA49	108682287	194.9	1538.19	SC/PC
C482CA50	108682295	195.0	1537.40	SC/PC
C482CA51	108682303	195.1	1536.61	SC/PC
C482CA52	108682311	195.2	1535.82	SC/PC
C482CA53	108682329	195.3	1535.04	SC/PC
C482CA54	108682337	195.4	1534.25	SC/PC
C482CA55	108682345	195.5	1533.47	SC/PC
C482CA56	108682352	195.6	1532.68	SC/PC
C482CA57	108682360	195.7	1531.90	SC/PC
C482CA58	108682378	195.8	1531.12	SC/PC
C482CA59	108682386	195.9	1530.33	SC/PC
C482CA60	108682394	196.0	1529.55	SC/PC
C482CA61	108682402	196.1	1528.77	SC/PC

Ordering Information (continued)

Table 10. C484-Type Transmitter with FC/PC Connector and Analog Bias Monitor

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C484FD17	108638990	191.7	1563.86	FC/PC
C484FD18	108639808	191.8	1563.05	FC/PC
C484FD19	108639816	191.9	1562.23	FC/PC
C484FD20	108639824	192.0	1561.42	FC/PC
C484FD21	108639832	192.1	1560.61	FC/PC
C484FD22	108639857	192.2	1559.79	FC/PC
C484FD23	108639865	192.3	1558.98	FC/PC
C484FD24	108639881	192.4	1558.17	FC/PC
C484FD25	108639899	192.5	1557.36	FC/PC
C484FD26	108639923	192.6	1556.55	FC/PC
C484FD27	108639931	192.7	1555.75	FC/PC
C484FD28	108639956	192.8	1554.94	FC/PC
C484FD29	108639972	192.9	1554.13	FC/PC
C484FD30	108639980	193.0	1553.33	FC/PC
C484FD31	108640004	193.1	1552.52	FC/PC
C484FD32	108640012	193.2	1551.72	FC/PC
C484FD33	108640038	193.3	1550.92	FC/PC
C484FD34	108640046	193.4	1550.12	FC/PC
C484FD35	108640053	193.5	1549.32	FC/PC
C484FD36	108640079	193.6	1548.51	FC/PC
C484FD37	108640087	193.7	1547.72	FC/PC
C484FD38	108640103	193.8	1546.92	FC/PC
C484FD39	108640111	193.9	1546.12	FC/PC
C484FD40	108640129	194.0	1545.32	FC/PC
C484FD41	108640137	194.1	1544.53	FC/PC
C484FD42	108640145	194.2	1543.73	FC/PC
C484FD43	108640152	194.3	1542.94	FC/PC
C484FD44	108640160	194.4	1542.14	FC/PC
C484FD45	108640178	194.5	1541.35	FC/PC
C484FD46	108640335	194.6	1540.56	FC/PC
C484FD47	108640343	194.7	1539.77	FC/PC
C484FD48	108640350	194.8	1538.98	FC/PC
C484FD49	108640368	194.9	1538.19	FC/PC
C484FD50	108640376	195.0	1537.40	FC/PC
C484FD51	108640384	195.1	1536.61	FC/PC
C484FD52	108640392	195.2	1535.82	FC/PC
C484FD53	108640400	195.3	1535.04	FC/PC
C484FD54	108640418	195.4	1534.25	FC/PC
C484FD55	108640426	195.5	1533.47	FC/PC
C484FD56	108640434	195.6	1532.68	FC/PC
C484FD57	108640442	195.7	1531.90	FC/PC
C484FD58	108640459	195.8	1531.12	FC/PC
C484FD59	108640467	195.9	1530.33	FC/PC
C484FD60	108640475	196.0	1529.55	FC/PC
C484FD61	108640483	196.1	1528.77	FC/PC

Ordering Information (continued)

Table 11. C484-Type Transmitter with FC/PC Connector and Digital LDA

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C484FA17	108682410	191.7	1563.86	FC/PC
C484FA18	108682428	191.8	1563.05	FC/PC
C484FA19	108682436	191.9	1562.23	FC/PC
C484FA20	108682444	192.0	1561.42	FC/PC
C484FA21	108682451	192.1	1560.61	FC/PC
C484FA22	108682469	192.2	1559.79	FC/PC
C484FA23	108682477	192.3	1558.98	FC/PC
C484FA24	108682485	192.4	1558.17	FC/PC
C484FA25	108682501	192.5	1557.36	FC/PC
C484FA26	108682519	192.6	1556.55	FC/PC
C484FA27	108682527	192.7	1555.75	FC/PC
C484FA28	108682535	192.8	1554.94	FC/PC
C484FA29	108682550	192.9	1554.13	FC/PC
C484FA30	108682568	193.0	1553.33	FC/PC
C484FA31	108682576	193.1	1552.52	FC/PC
C484FA32	108682584	193.2	1551.72	FC/PC
C484FA33	108682592	193.3	1550.92	FC/PC
C484FA34	108682600	193.4	1550.12	FC/PC
C484FA35	108682618	193.5	1549.32	FC/PC
C484FA36	108682626	193.6	1548.51	FC/PC
C484FA37	108682634	193.7	1547.72	FC/PC
C484FA38	108682642	193.8	1546.92	FC/PC
C484FA39	108682659	193.9	1546.12	FC/PC
C484FA40	108682667	194.0	1545.32	FC/PC
C484FA41	108682675	194.1	1544.53	FC/PC
C484FA42	108682683	194.2	1543.73	FC/PC
C484FA43	108682691	194.3	1542.94	FC/PC
C484FA44	108682709	194.4	1542.14	FC/PC
C484FA45	108682717	194.5	1541.35	FC/PC
C484FA46	108682725	194.6	1540.56	FC/PC
C484FA47	108682733	194.7	1539.77	FC/PC
C484FA48	108682741	194.8	1538.98	FC/PC
C484FA49	108682758	194.9	1538.19	FC/PC
C484FA50	108682766	195.0	1537.40	FC/PC
C484FA51	108682774	195.1	1536.61	FC/PC
C484FA52	108682782	195.2	1535.82	FC/PC
C484FA53	108682790	195.3	1535.04	FC/PC
C484FA54	108682808	195.4	1534.25	FC/PC
C484FA55	108682816	195.5	1533.47	FC/PC
C484FA56	108682824	195.6	1532.68	FC/PC
C484FA57	108688322	195.7	1531.90	FC/PC
C484FA58	108682840	195.8	1531.12	FC/PC
C484FA59	108682857	195.9	1530.33	FC/PC
C484FA60	108682865	196.0	1529.55	FC/PC
C484FA61	108682873	196.1	1528.77	FC/PC

Ordering Information (continued)

Table 12. C484-Type Transmitter with SC/PC Connector and Analog Bias Monitor

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C484CD17	108641432	191.7	1563.86	SC/PC
C484CD18	108641440	191.8	1563.05	SC/PC
C484CD19	108641457	191.9	1562.23	SC/PC
C484CD20	108641465	192.0	1561.42	SC/PC
C484CD21	108641473	192.1	1560.61	SC/PC
C484CD22	108641861	192.2	1559.79	SC/PC
C484CD23	108641879	192.3	1558.98	SC/PC
C484CD24	108641887	192.4	1558.17	SC/PC
C484CD25	108641895	192.5	1557.36	SC/PC
C484CD26	108641903	192.6	1556.55	SC/PC
C484CD27	108641911	192.7	1555.75	SC/PC
C484CD28	108641929	192.8	1554.94	SC/PC
C484CD29	108641937	192.9	1554.13	SC/PC
C484CD30	108641945	193.0	1553.33	SC/PC
C484CD31	108641952	193.1	1552.52	SC/PC
C484CD32	108641960	193.2	1551.72	SC/PC
C484CD33	108641978	193.3	1550.92	SC/PC
C484CD34	108641986	193.4	1550.12	SC/PC
C484CD35	108641994	193.5	1549.32	SC/PC
C484CD36	108642000	193.6	1548.51	SC/PC
C484CD37	108642018	193.7	1547.72	SC/PC
C484CD38	108642026	193.8	1546.92	SC/PC
C484CD39	108642034	193.9	1546.12	SC/PC
C484CD40	108642042	194.0	1545.32	SC/PC
C484CD41	108642059	194.1	1544.53	SC/PC
C484CD42	108642067	194.2	1543.73	SC/PC
C484CD43	108642075	194.3	1542.94	SC/PC
C484CD44	108642083	194.4	1542.14	SC/PC
C484CD45	108642109	194.5	1541.35	SC/PC
C484CD46	108642117	194.6	1540.56	SC/PC
C484CD47	108642125	194.7	1539.77	SC/PC
C484CD48	108642133	194.8	1538.98	SC/PC
C484CD49	108642141	194.9	1538.19	SC/PC
C484CD50	108642158	195.0	1537.40	SC/PC
C484CD51	108642166	195.1	1536.61	SC/PC
C484CD52	108642174	195.2	1535.82	SC/PC
C484CD53	108642182	195.3	1535.04	SC/PC
C484CD54	108642190	195.4	1534.25	SC/PC
C484CD55	108642208	195.5	1533.47	SC/PC
C484CD56	108642224	195.6	1532.68	SC/PC
C484CD57	108642232	195.7	1531.90	SC/PC
C484CD58	108642240	195.8	1531.12	SC/PC
C484CD59	108642257	195.9	1530.33	SC/PC
C484CD60	108642265	196.0	1529.55	SC/PC
C484CD61	108642273	196.1	1528.77	SC/PC

Ordering Information (continued)

Table 13. C484-Type Transmitter with SC/PC Connector and Digital LDA

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C484CA17	108862956	191.7	1563.86	SC/PC
C484CA18	108862964	191.8	1563.05	SC/PC
C484CA19	108862972	191.9	1562.23	SC/PC
C484CA20	108862980	192.0	1561.42	SC/PC
C484CA21	108862998	192.1	1560.61	SC/PC
C484CA22	108863004	192.2	1559.79	SC/PC
C484CA23	108863012	192.3	1558.98	SC/PC
C484CA24	108863020	192.4	1558.17	SC/PC
C484CA25	108863038	192.5	1557.36	SC/PC
C484CA26	108863046	192.6	1556.55	SC/PC
C484CA27	108863053	192.7	1555.75	SC/PC
C484CA28	108863061	192.8	1554.94	SC/PC
C484CA29	108863079	192.9	1554.13	SC/PC
C484CA30	108863087	193.0	1553.33	SC/PC
C484CA31	108863095	193.1	1552.52	SC/PC
C484CA32	108863103	193.2	1551.72	SC/PC
C484CA33	108863111	193.3	1550.92	SC/PC
C484CA34	108863129	193.4	1550.12	SC/PC
C484CA35	108863137	193.5	1549.32	SC/PC
C484CA36	108863145	193.6	1548.51	SC/PC
C484CA37	108863152	193.7	1547.72	SC/PC
C484CA38	108863160	193.8	1546.92	SC/PC
C484CA39	108863178	193.9	1546.12	SC/PC
C484CA40	108863186	194.0	1545.32	SC/PC
C484CA41	108863194	194.1	1544.53	SC/PC
C484CA42	108863202	194.2	1543.73	SC/PC
C484CA43	108863210	194.3	1542.94	SC/PC
C484CA44	108863228	194.4	1542.14	SC/PC
C484CA45	108863236	194.5	1541.35	SC/PC
C484CA46	108863244	194.6	1540.56	SC/PC
C484CA47	108863251	194.7	1539.77	SC/PC
C484CA48	108863269	194.8	1538.98	SC/PC
C484CA49	108863277	194.9	1538.19	SC/PC
C484CA50	108863285	195.0	1537.40	SC/PC
C484CA51	108863293	195.1	1536.61	SC/PC
C484CA52	108863301	195.2	1535.82	SC/PC
C484CA53	108863319	195.3	1535.04	SC/PC
C484CA54	108863327	195.4	1534.25	SC/PC
C484CA55	108863335	195.5	1533.47	SC/PC
C484CA56	108863343	195.6	1532.68	SC/PC
C484CA57	108863350	195.7	1531.90	SC/PC
C484CA58	108863368	195.8	1531.12	SC/PC
C484CA59	108863376	195.9	1530.33	SC/PC
C484CA60	108863384	196.0	1529.55	SC/PC
C484CA61	108863400	196.1	1528.77	SC/PC

Ordering Information (continued)

Table 14. C484-Type Transmitter with MU Connector and Analog Bias Monitor

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C484YD17	108891318	191.7	1563.86	MU
C484YD18	108891326	191.8	1563.05	MU
C484YD19	108891334	191.9	1562.23	MU
C484YD20	108890203	192.0	1561.42	MU
C484YD21	108890211	192.1	1560.61	MU
C484YD22	108890229	192.2	1559.79	MU
C484YD23	108890237	192.3	1558.98	MU
C484YD24	108890245	192.4	1558.17	MU
C484YD25	108890252	192.5	1557.36	MU
C484YD26	108890260	192.6	1556.55	MU
C484YD27	108890278	192.7	1555.75	MU
C484YD28	108890286	192.8	1554.94	MU
C484YD29	108890294	192.9	1554.13	MU
C484YD30	108890302	193.0	1553.33	MU
C484YD31	108890310	193.1	1552.52	MU
C484YD32	108890328	193.2	1551.72	MU
C484YD33	108890336	193.3	1550.92	MU
C484YD34	108890344	193.4	1550.12	MU
C484YD35	108890351	193.5	1549.32	MU
C484YD36	108890369	193.6	1548.51	MU
C484YD37	108890377	193.7	1547.72	MU
C484YD38	108890385	193.8	1546.92	MU
C484YD39	108891565	193.9	1546.12	MU
C484YD40	108890393	194.0	1545.32	MU
C484YD41	108890401	194.1	1544.53	MU
C484YD42	108891342	194.2	1543.73	MU
C484YD43	108891359	194.3	1542.94	MU
C484YD44	108891367	194.4	1542.14	MU
C484YD45	108891375	194.5	1541.35	MU
C484YD46	108891383	194.6	1540.56	MU
C484YD47	108891391	194.7	1539.77	MU
C484YD48	108891409	194.8	1538.98	MU
C484YD49	108891417	194.9	1538.19	MU
C484YD50	108891425	195.0	1537.40	MU
C484YD51	108891433	195.1	1536.61	MU
C484YD52	108891441	195.2	1535.82	MU
C484YD53	108891458	195.3	1535.04	MU
C484YD54	108891466	195.4	1534.25	MU
C484YD55	108891474	195.5	1533.47	MU
C484YD56	108891482	195.6	1532.68	MU
C484YD57	108891490	195.7	1531.90	MU
C484YD58	108891508	195.8	1531.12	MU
C484YD59	108891516	195.9	1530.33	MU
C484YD60	108891524	196.0	1529.55	MU
C484CD61	108891532	196.1	1528.77	MU

Ordering Information (continued)

Table 15. C486-Type Transmitter with FC/PC Connector and Analog Bias Monitor

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C486FD17	108637661	191.7	1563.86	FC/PC
C486FD18	108637679	191.8	1563.05	FC/PC
C486FD19	108637687	191.9	1562.23	FC/PC
C486FD20	108637695	192.0	1561.42	FC/PC
C486FD21	108637703	192.1	1560.61	FC/PC
C486FD22	108637711	192.2	1559.79	FC/PC
C486FD23	108637729	192.3	1558.98	FC/PC
C486FD24	108637950	192.4	1558.17	FC/PC
C486FD25	108637968	192.5	1557.36	FC/PC
C486FD26	108637976	192.6	1556.55	FC/PC
C486FD27	108637984	192.7	1555.75	FC/PC
C486FD28	108637992	192.8	1554.94	FC/PC
C486FD29	108638024	192.9	1554.13	FC/PC
C486FD30	108638040	193.0	1553.33	FC/PC
C486FD31	108638123	193.1	1552.52	FC/PC
C486FD32	108638131	193.2	1551.72	FC/PC
C486FD33	108638156	193.3	1550.92	FC/PC
C486FD34	108638164	193.4	1550.12	FC/PC
C486FD35	108638180	193.5	1549.32	FC/PC
C486FD36	108638198	193.6	1548.51	FC/PC
C486FD37	108638214	193.7	1547.72	FC/PC
C486FD38	108638222	193.8	1546.92	FC/PC
C486FD39	108638230	193.9	1546.12	FC/PC
C486FD40	108638255	194.0	1545.32	FC/PC
C486FD41	108638768	194.1	1544.53	FC/PC
C486FD42	108638776	194.2	1543.73	FC/PC
C486FD43	108638784	194.3	1542.94	FC/PC
C486FD44	108638792	194.4	1542.14	FC/PC
C486FD45	108638800	194.5	1541.35	FC/PC
C486FD46	108638818	194.6	1540.56	FC/PC
C486FD47	108638834	194.7	1539.77	FC/PC
C486FD48	108638842	194.8	1538.98	FC/PC
C486FD49	108638859	194.9	1538.19	FC/PC
C486FD50	108638867	195.0	1537.40	FC/PC
C486FD51	108638875	195.1	1536.61	FC/PC
C486FD52	108638891	195.2	1535.82	FC/PC
C486FD53	108638909	195.3	1535.04	FC/PC
C486FD54	108638917	195.4	1534.25	FC/PC
C486FD55	108638925	195.5	1533.47	FC/PC
C486FD56	108638933	195.6	1532.68	FC/PC
C486FD57	108638941	195.7	1531.90	FC/PC
C486FD58	108638958	195.8	1531.12	FC/PC
C486FD59	108638966	195.9	1530.33	FC/PC
C486FD60	108638974	196.0	1529.55	FC/PC
C486FD61	108638982	196.1	1528.77	FC/PC

Ordering Information (continued)

Table 16. C486-Type Transmitter with FC/PC Connector and Digital LDA

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C486FA17	108683418	191.7	1563.86	FC/PC
C486FA18	108683426	191.8	1563.05	FC/PC
C486FA19	108683442	191.9	1562.23	FC/PC
C486FA20	108683459	192.0	1561.42	FC/PC
C486FA21	108683467	192.1	1560.61	FC/PC
C486FA22	108683475	192.2	1559.79	FC/PC
C486FA23	108683483	192.3	1558.98	FC/PC
C486FA24	108683533	192.4	1558.17	FC/PC
C486FA25	108683558	192.5	1557.36	FC/PC
C486FA26	108683566	192.6	1556.55	FC/PC
C486FA27	108683574	192.7	1555.75	FC/PC
C486FA28	108683582	192.8	1554.94	FC/PC
C486FA29	108683590	192.9	1554.13	FC/PC
C486FA30	108683608	193.0	1553.33	FC/PC
C486FA31	108683616	193.1	1552.52	FC/PC
C486FA32	108683624	193.2	1551.72	FC/PC
C486FA33	108683632	193.3	1550.92	FC/PC
C486FA34	108683640	193.4	1550.12	FC/PC
C486FA35	108683657	193.5	1549.32	FC/PC
C486FA36	108683665	193.6	1548.51	FC/PC
C486FA37	108683673	193.7	1547.72	FC/PC
C486FA38	108683681	193.8	1546.92	FC/PC
C486FA39	108683699	193.9	1546.12	FC/PC
C486FA40	108683707	194.0	1545.32	FC/PC
C486FA41	108683715	194.1	1544.53	FC/PC
C486FA42	108683723	194.2	1543.73	FC/PC
C486FA43	108683731	194.3	1542.94	FC/PC
C486FA44	108683749	194.4	1542.14	FC/PC
C486FA45	108683756	194.5	1541.35	FC/PC
C486FA46	108683764	194.6	1540.56	FC/PC
C486FA47	108683772	194.7	1539.77	FC/PC
C486FA48	108683780	194.8	1538.98	FC/PC
C486FA49	108683798	194.9	1538.19	FC/PC
C486FA50	108683806	195.0	1537.40	FC/PC
C486FA51	108683814	195.1	1536.61	FC/PC
C486FA52	108683822	195.2	1535.82	FC/PC
C486FA53	108683830	195.3	1535.04	FC/PC
C486FA54	108683848	195.4	1534.25	FC/PC
C486FA55	108683855	195.5	1533.47	FC/PC
C486FA56	108683863	195.6	1532.68	FC/PC
C486FA57	108683871	195.7	1531.90	FC/PC
C486FA58	108683889	195.8	1531.12	FC/PC
C486FA59	108683897	195.9	1530.33	FC/PC
C486FA60	108683905	196.0	1529.55	FC/PC
C486FA61	108683913	196.1	1528.77	FC/PC

Ordering Information (continued)

Table 17. C486-Type Transmitter with SC/PC Connector and Analog Bias Monitor

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C486CD17	108640582	191.7	1563.86	SC/PC
C486CD18	108640590	191.8	1563.05	SC/PC
C486CD19	108640608	191.9	1562.23	SC/PC
C486CD20	108640616	192.0	1561.42	SC/PC
C486CD21	108640624	192.1	1560.61	SC/PC
C486CD22	108640632	192.2	1559.79	SC/PC
C486CD23	108640640	192.3	1558.98	SC/PC
C486CD24	108640657	192.4	1558.17	SC/PC
C486CD25	108640665	192.5	1557.36	SC/PC
C486CD26	108640673	192.6	1556.55	SC/PC
C486CD27	108640681	192.7	1555.75	SC/PC
C486CD28	108640699	192.8	1554.94	SC/PC
C486CD29	108640707	192.9	1554.13	SC/PC
C486CD30	108640715	193.0	1553.33	SC/PC
C486CD31	108640723	193.1	1552.52	SC/PC
C486CD32	108640731	193.2	1551.72	SC/PC
C486CD33	108640749	193.3	1550.92	SC/PC
C486CD34	108640756	193.4	1550.12	SC/PC
C486CD35	108640764	193.5	1549.32	SC/PC
C486CD36	108640772	193.6	1548.51	SC/PC
C486CD37	108640780	193.7	1547.72	SC/PC
C486CD38	108640798	193.8	1546.92	SC/PC
C486CD39	108640806	193.9	1546.12	SC/PC
C486CD40	108640814	194.0	1545.32	SC/PC
C486CD41	108640822	194.1	1544.53	SC/PC
C486CD42	108640830	194.2	1543.73	SC/PC
C486CD43	108640848	194.3	1542.94	SC/PC
C486CD44	108640855	194.4	1542.14	SC/PC
C486CD45	108640863	194.5	1541.35	SC/PC
C486CD46	108640871	194.6	1540.56	SC/PC
C486CD47	108640889	194.7	1539.77	SC/PC
C486CD48	108640897	194.8	1538.98	SC/PC
C486CD49	108640905	194.9	1538.19	SC/PC
C486CD50	108640913	195.0	1537.40	SC/PC
C486CD51	108640921	195.1	1536.61	SC/PC
C486CD52	108640939	195.2	1535.82	SC/PC
C486CD53	108640947	195.3	1535.04	SC/PC
C486CD54	108640954	195.4	1534.25	SC/PC
C486CD55	108640962	195.5	1533.47	SC/PC
C486CD56	108640970	195.6	1532.68	SC/PC
C486CD57	108640988	195.7	1531.90	SC/PC
C486CD58	108640996	195.8	1531.12	SC/PC
C486CD59	108641002	195.9	1530.33	SC/PC
C486CD60	108641010	196.0	1529.55	SC/PC
C486CD61	108641028	196.1	1528.77	SC/PC

Ordering Information (continued)

Table 18. C486-Type Transmitter with SC/PC Connector and Digital LDA

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C486CA17	108683921	191.7	1563.86	SC/PC
C486CA18	108683939	191.8	1563.05	SC/PC
C486CA19	108683962	191.9	1562.23	SC/PC
C486CA20	108683970	192.0	1561.42	SC/PC
C486CA21	108683988	192.1	1560.61	SC/PC
C486CA22	108683996	192.2	1559.79	SC/PC
C486CA23	108684002	192.3	1558.98	SC/PC
C486CA24	108684010	192.4	1558.17	SC/PC
C486CA25	108684028	192.5	1557.36	SC/PC
C486CA26	108684036	192.6	1556.55	SC/PC
C486CA27	108684044	192.7	1555.75	SC/PC
C486CA28	108684051	192.8	1554.94	SC/PC
C486CA29	108684069	192.9	1554.13	SC/PC
C486CA30	108684077	193.0	1553.33	SC/PC
C486CA31	108684085	193.1	1552.52	SC/PC
C486CA32	108684093	193.2	1551.72	SC/PC
C486CA33	108684101	193.3	1550.92	SC/PC
C486CA34	108684119	193.4	1550.12	SC/PC
C486CA35	108684127	193.5	1549.32	SC/PC
C486CA36	108684135	193.6	1548.51	SC/PC
C486CA37	108684143	193.7	1547.72	SC/PC
C486CA38	108684150	193.8	1546.92	SC/PC
C486CA39	108684168	193.9	1546.12	SC/PC
C486CA40	108684176	194.0	1545.32	SC/PC
C486CA41	108684184	194.1	1544.53	SC/PC
C486CA42	108684192	194.2	1543.73	SC/PC
C486CA43	108684200	194.3	1542.94	SC/PC
C486CA44	108684218	194.4	1542.14	SC/PC
C486CA45	108684226	194.5	1541.35	SC/PC
C486CA46	108684234	194.6	1540.56	SC/PC
C486CA47	108684242	194.7	1539.77	SC/PC
C486CA48	108684259	194.8	1538.98	SC/PC
C486CA49	108684267	194.9	1538.19	SC/PC
C486CA50	108684275	195.0	1537.40	SC/PC
C486CA51	108684283	195.1	1536.61	SC/PC
C486CA52	108684291	195.2	1535.82	SC/PC
C486CA53	108684309	195.3	1535.04	SC/PC
C486CA54	108684317	195.4	1534.25	SC/PC
C486CA55	108684325	195.5	1533.47	SC/PC
C486CA56	108684333	195.6	1532.68	SC/PC
C486CA57	108684341	195.7	1531.90	SC/PC
C486CA58	108684358	195.8	1531.12	SC/PC
C486CA59	108684366	195.9	1530.33	SC/PC
C486CA60	108684374	196.0	1529.55	SC/PC
C486CA61	108684382	196.1	1528.77	SC/PC

Ordering Information (continued)

Table 19. C486-Type Transmitter with LC Connector and Analog Bias Monitor

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C486WD17	70009030	191.7	1563.86	LC
C486WD18	70009031	191.8	1563.05	LC
C486WD19	70009032	191.9	1562.23	LC
C486WD20	70009034	192.0	1561.42	LC
C486WD21	70009036	192.1	1560.61	LC
C486WD22	70009038	192.2	1559.79	LC
C486WD23	70009039	192.3	1558.98	LC
C486WD24	70009040	192.4	1558.17	LC
C486WD25	70009041	192.5	1557.36	LC
C486WD26	70009042	192.6	1556.55	LC
C486WD27	70009043	192.7	1555.75	LC
C486WD28	70009044	192.8	1554.94	LC
C486WD29	70009045	192.9	1554.13	LC
C486WD30	70009046	193.0	1553.33	LC
C486WD31	70009047	193.1	1552.52	LC
C486WD32	70009048	193.2	1551.72	LC
C486WD33	70009049	193.3	1550.92	LC
C486WD34	70009050	193.4	1550.12	LC
C486WD35	70009051	193.5	1549.32	LC
C486WD36	70009052	193.6	1548.51	LC
C486WD37	70009053	193.7	1547.72	LC
C486WD38	70009054	193.8	1546.92	LC
C486WD39	70009055	193.9	1546.12	LC
C486WD40	70009056	194.0	1545.32	LC
C486WD41	70009057	194.1	1544.53	LC
C486WD42	70009058	194.2	1543.73	LC
C486WD43	70009066	194.3	1542.94	LC
C486WD44	70009067	194.4	1542.14	LC
C486WD45	70009068	194.5	1541.35	LC
C486WD46	70009069	194.6	1540.56	LC
C486WD47	70009070	194.7	1539.77	LC
C486WD48	70009071	194.8	1538.98	LC
C486WD49	70009072	194.9	1538.19	LC
C486WD50	70009073	195.0	1537.40	LC
C486WD51	70009074	195.1	1536.61	LC
C486WD52	70009075	195.2	1535.82	LC
C486WD53	70009078	195.3	1535.04	LC
C486WD54	70009079	195.4	1534.25	LC
C486WD55	70009081	195.5	1533.47	LC
C486WD56	70009087	195.6	1532.68	LC
C486WD57	70009088	195.7	1531.90	LC
C486WD58	70007991	195.8	1531.12	LC
C486WD59	70009089	195.9	1530.33	LC
C486WD60	70009090	196.0	1529.55	LC
C486WD61	70009091	196.1	1528.77	LC

Ordering Information (continued)

Table 20. C486-Type Transmitter with MU Connector and Analog Bias Monitor

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C486YD17	700014288	191.7	1563.86	MU
C486YD18	700014295	191.8	1563.05	MU
C486YD19	700014300	191.9	1562.23	MU
C486YD20	700014303	192.0	1561.42	MU
C486YD21	700014308	192.1	1560.61	MU
C486YD22	700014313	192.2	1559.79	MU
C486YD23	700014317	192.3	1558.98	MU
C486YD24	700014322	192.4	1558.17	MU
C486YD25	700014327	192.5	1557.36	MU
C486YD26	700014330	192.6	1556.55	MU
C486YD27	700014334	192.7	1555.75	MU
C486YD28	700014338	192.8	1554.94	MU
C486YD29	700014342	192.9	1554.13	MU
C486YD30	700014345	193.0	1553.33	MU
C486YD31	700014349	193.1	1552.52	MU
C486YD32	700014351	193.2	1551.72	MU
C486YD33	700014352	193.3	1550.92	MU
C486YD34	700014353	193.4	1550.12	MU
C486YD35	700014354	193.5	1549.32	MU
C486YD36	700014355	193.6	1548.51	MU
C486YD37	700014356	193.7	1547.72	MU
C486YD38	700014357	193.8	1546.92	MU
C486YD39	700014360	193.9	1546.12	MU
C486YD40	700014364	194.0	1545.32	MU
C486YD41	700014368	194.1	1544.53	MU
C486YD42	700014372	194.2	1543.73	MU
C486YD43	700014377	194.3	1542.94	MU
C486YD44	700014380	194.4	1542.14	MU
C486YD45	700014384	194.5	1541.35	MU
C486YD46	700014388	194.6	1540.56	MU
C486YD47	700014392	194.7	1539.77	MU
C486YD48	700014397	194.8	1538.98	MU
C486YD49	700014401	194.9	1538.19	MU
C486YD50	700014405	195.0	1537.40	MU
C486YD51	700014408	195.1	1536.61	MU
C486YD52	700014409	195.2	1535.82	MU
C486YD53	700014410	195.3	1535.04	MU
C486YD54	700014411	195.4	1534.25	MU
C486YD55	700014412	195.5	1533.47	MU
C486YD56	700014413	195.6	1532.68	MU
C486YD57	700014414	195.7	1531.90	MU
C486YD58	700014415	195.8	1531.12	MU
C486YD59	700014416	195.9	1530.33	MU
C486YD60	700014417	196.0	1529.55	MU
C486YD61	700014418	196.1	1528.77	MU

Ordering Information (continued)

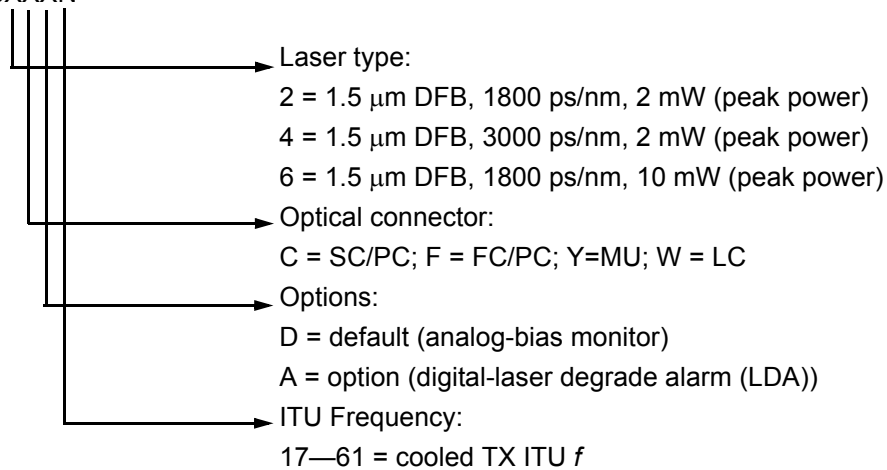
Table 21. C486-Type Transmitter with MU Connector and Digital LDA

Product Code	Comcode	ITU Frequency (THz)	Center Wavelength (nm)	Connector
C486YA17	700014966	191.7	1563.86	MU
C486YA18	700014967	191.8	1563.05	MU
C486YA19	700014968	191.9	1562.23	MU
C486YA20	700014969	192.0	1561.42	MU
C486YA21	700014970	192.1	1560.61	MU
C486YA22	700014971	192.2	1559.79	MU
C486YA23	700014972	192.3	1558.98	MU
C486YA24	700014973	192.4	1558.17	MU
C486YA25	700014974	192.5	1557.36	MU
C486YA26	700014975	192.6	1556.55	MU
C486YA27	700014976	192.7	1555.75	MU
C486YA28	700014977	192.8	1554.94	MU
C486YA29	700014978	192.9	1554.13	MU
C486YA30	700014979	193.0	1553.33	MU
C486YA31	700014980	193.1	1552.52	MU
C486YA32	700014982	193.2	1551.72	MU
C486YA33	700014985	193.3	1550.92	MU
C486YA34	700014986	193.4	1550.12	MU
C486YA35	700014987	193.5	1549.32	MU
C486YA36	700014988	193.6	1548.51	MU
C486YA37	700014990	193.7	1547.72	MU
C486YA38	700014991	193.8	1546.92	MU
C486YA39	700014992	193.9	1546.12	MU
C486YA40	700014993	194.0	1545.32	MU
C486YA41	700014994	194.1	1544.53	MU
C486YA42	700014996	194.2	1543.73	MU
C486YA43	700014997	194.3	1542.94	MU
C486YA44	700014998	194.4	1542.14	MU
C486YA45	700014999	194.5	1541.35	MU
C486YA46	700015000	194.6	1540.56	MU
C486YA47	700015001	194.7	1539.77	MU
C486YA48	700015002	194.8	1538.98	MU
C486YA49	700015003	194.9	1538.19	MU
C486YA50	700015004	195.0	1537.40	MU
C486YA51	700015005	195.1	1536.61	MU
C486YA52	700015006	195.2	1535.82	MU
C486YA53	700015008	195.3	1535.04	MU
C486YA54	700015009	195.4	1534.25	MU
C486YA55	700015010	195.5	1533.47	MU
C486YA56	700015011	195.6	1532.68	MU
C486YA57	700015012	195.7	1531.90	MU
C486YA58	700015014	195.8	1531.12	MU
C486YA59	700015018	195.9	1530.33	MU
C486YA60	700015019	196.0	1529.55	MU
C486YA61	700015021	196.1	1528.77	MU

Ordering Information (continued)

Coding Scheme

Example: C48XXXN



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