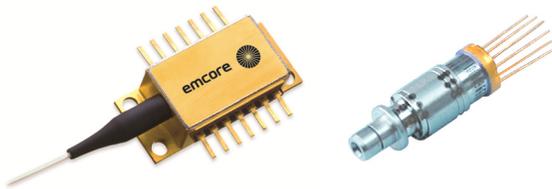


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**ABSTRACT**

EMCORE has a long history of innovation in highly linear, coherent laser sources. Our world-class device scientists have developed innovative chip devices. These devices have achieved world-class performance in such diverse applications as Telecom Modules, GPON, CATV Networks, Wireless Networks, Industrial Sensing, and LIDAR.

Data centers are expected to require higher data rates of 800 Gbps or even 1.6 Tbps in the future. Significantly large demand for transceivers is expected annually with volumes ramping by the beginning in 2024.



EMCORE has been developing a highly coherent, high-power, narrow linewidth laser for LIDAR since 2019. EMCORE does not produce Telecom and Datacom modules. Therefore, we are uniquely positioned to support transmitter module manufacturers that are in need of chip-on-carrier or TOSA-level products.

The expectation for inter- and intra-data center applications at these high data rates includes the need for a highly coherent laser source. Higher power will be desired at about 18 dBm or more. Most applications will require narrow linewidth of <200 KHz. These devices will likely be in the O-Band, however, EMCORE has the capability to support both O- or C-Band.

**Below are some performance capabilities that an EMCORE device can offer:**

Parameter	Chip on Carrier			Module		
	Min	Typ	Max	Min	Typ	Max
Threshold current		<20 mA	40 mA		<20 mA	40mA
Optical Output Power		20 dBm			15 dBm for TO, 18 dBm for BF	
Operating Temperature	15 °C		55 °C		25 °C or 45 °C	
Wavelength	1300 nm 1540 nm	1310 nm 1550 nm	1320 nm 1560 nm	1300 nm 1540 nm	1310 nm 1550 nm	1320 nm 1560 nm
Linewidth <sup>1</sup>		~60 kHz	100 kHz		~60 kHz	100 kHz
Isolation					50 dB	
SMSR		>50 dB			>50 dB	
Laser (chip) Far Field Angle		15(H)x18(V) degree				
Power consumption					1.5W: 15 dBm TO, -20 °C to 70 °C, 3W; 18 dBm BF, -20 °C to 65 °C	

<sup>1</sup> For chip, tested with >45 dB optical isolation

EMCORE is ready to engage with customers on a custom design to meet their exact needs. We are also making significant upgrades to our Wafer Fab in-order-to support these requirements.