

## 100G-LR1 10km QSFP28 Single Lamda Transceiver CL100GQSFP1R1

### Product Features:

- Compliant with QSFP28 Standard: SFF-8636 Rev 2.10a
- Compliant with IEEE802.3cu-2021 100GBASE-LR .
- High speed I/O electrical interface (CAUI-4)
- Single 3.3V Supply Voltage
- Maximum power consumption 4W
- 0-70 °C Case Operating Temperature
- 1311nm EML laser and PIN Receiver
- Hermetically sealed TO Based design
- QSFP28 MSA package with duplex LC connector
- Two Wire Serial Interface with Digital Diagnostic Monitoring
- KP4 FEC termination inside module
- Supporting 10km reach of single mode fiber
- Complies with EU Directive 2011/65/EU (RoHS compliant)
- Class 1 Laser



### Functional Characteristics (Optical)

The following tables list the performance specifications for the various functional blocks of the integrated optical transceiver module.

**Table 1 – Transmitter Optical Specifications**

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Wavelength	$\lambda_C$	1304.5	1311	1317.5	nm	
Side mode suppression ratio	SMSR	30	-	-	dB	
Average Optical Launch Power	POUT	-2.9	-	4	dBm	1
Average launch power of OFF transmitter	POUT_OFF	-	-	-15	dBm	
Extinction Ratio	ER	3.5	-	-	dB	
Outer Optical Modulation Amplitude	OMA <sub>outer</sub>	-0.8	-	4.2	dBm	
(OMA <sub>outer</sub> )						
Launch power in OMA <sub>outer</sub> minus	OMA <sub>outer</sub> - TDECQ					
TDECQ:		-2.2	-	-	dBm	
for extinction ratio $\geq 5$ dB		-1.9				
for extinction ratio $< 5$ dB						
Transmitter and dispersion eye closure	TDECQ	-	-	3.4	dB	



TDECQ – $10\log_{10}(\text{Ceq})$	CEQ	-	-	3.4	dB	
RIN15.5OMA	RIN	-	-	-136	dB/Hz	
Optical return loss tolerance	ORLT	-	-	15.5	dB	
Transmitter transition time		-	-	17	ps	
Transmitter reflectance	TR	-		-26	dB	

Note 1: Average launch power is informative and not the principal indicator of signal strength.

**Table 2 – Receiver Optical Specifications**

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Wavelength	$\lambda_C$	1304.5	1311	1317.5	nm	
Damage Threshold		5	-	-	dBm	
Average receive power		-5.9	-	4	dBm	1
Receive power (OMA <sub>outer</sub> )	RP	-	-	4.2	dBm	
Receiver reflectance	RR	-	-	-26	dB	
Receiver sensitivity (OMA <sub>outer</sub> )	RS	-	-	Max(-3.9, SECQ-5.3)	dBm	
Stressed receiver sensitivity	SRS	-	-	-1.9	dBm	2
Stressed Receiver Sensitivity Test Conditions:	-	-		-		
Stressed eye closure for PAM4 (SECQ)	SECQ	-	3.4	-	dB	
SECQ – $10\log_{10}(\text{Ceq})$	-	-	-	3.4	dB	

Note 1: Average receive power, (min) is informative and not the principal indicator of signal strength.

Note 2: Measured with conformance test signal at TP3 for the BER =  $2.4 \times 10^{-4}$ .

## Ordering Information

**Table 3 - Ordering Information**

Part No.	Application	Data Rate	Laser Source	Fiber Type	Connector	Temp.
CL100GQSFPLR1	100GBASE-LR1	100GE	1311nm EML	< SMF 10km	LC/UPC	0°C~70°C
		(53.125 GBd)				

## CONTACT:

Email: [sales@c-light.com](mailto:sales@c-light.com) <https://www.c-light.com>