

## 400G QSFP-DD XDR4+ 10km CL400GQDDXDR4+

### Product Features:

- Compliant with IEEE802.3bs standard:
  - 400GAUI-8 electrical interface
- Compliant with IEEE 802.3bs standard:
  - 4x 100GBASE-LR1 optical interface
- Compliant with QSFP-DD MSA HW Rev 5.1
  - Type 2 housing with MPO-12 connector
- Compliant with QSFP-DD CMIS Rev 4.0
- Maximum power consumption 10W
- Case operating temperature 0. C to 70. C
- Two wire serial Interface with digital diagnostic monitoring
- 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 Launch Power, each lane	AOP <sub>L</sub>	-1.9	-	4.8	dBm	1
Outer Optical Modulation Amplitude (OMA <sub>outer</sub> ), each lane	T <sub>OMA</sub>	-	-	5	dBm	
Outer Optical Modulation Amplitude (OMA <sub>outer</sub> ), each lane: for TDECQ <1.4dB for 1.4 ≤ TDECQ ≤ 3.4dB	T <sub>OMA</sub>	1.1 -0.3+	-	-	dBm	TDECQ
Transmitter and Dispersion Eye Closure for PAM4 (TDECQ), each lane	TDECQ	-	-	3.4	dB	
Transmitter eye closure for PAM4(TECQ)	TECQ	-	-	3.4	dB	
TDECQ - TECQ	-	-	-	2.5	dB	
Over/under-shoot	-	-	-	22	%	
Transmitter power excursion	-	-	-	2.8	dBm	
Average Launch Power of OFF Transmitter, each lane	T <sub>OFF</sub>	-	-	-15	dBm	
Extinction Ratio, each lane	ER	3.5	-	-	dB	
RIN <sub>15.6</sub> OMA	RIN	-	-	-136	dB/Hz	
Optical Return Loss Tolerance	ORL	-	-	15.6	dB	
Transmitter Reflectance	T <sub>R</sub>	-	-	-26	dB	
Transmitter Transition Time	T <sub>t</sub>	-	-	17	ps	

Note 1: Average launch power, each lane (min) 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, each lane	AOP <sub>D</sub>	5.8	-	-	dBm	
Average Receive Power, each lane	AOP <sub>R</sub>	-8.2	-	4.8	dBm	1
Receive Power (OMA <sub>outer</sub> ), each lane	OMA <sub>R</sub>	-	-	5	dBm	
Receiver Reflectance	RR	-	-	-26	dB	
Receiver Sensitivity (OMA <sub>outer</sub> ), each lane for TECQ <1.4dB for 1.4 ≤ TECQ ≤ 3.4dB	S <sub>OMA</sub>	-	-	-6.1 -7.5+TECQ	dBm	
Stressed Receiver Sensitivity (OMA <sub>outer</sub> ), each lane	SRS	-	-	-4.1	dBm	2
Conditions of stressed receiver sensitivity test	-	-	-	-	-	
Stressed eye closure for PAM4 (SECQ)	-	-	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 = 2.4x10<sup>-4</sup>.

## Ordering Information

Table 3 - Ordering Information

Part No.	Application	Data Rate	Laser Source	Fiber Type
CL400GQDDXDR4+	400GBASE-DR4 10km	400GB Ethernet	EML	Single Mode Fiber

## CONTACT:

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