C-LIGHT®

Color Light Communication – Faster·Smarter·Brighter

Telecom FTTx DWDM Data Center

400G QSFP-DD LR4 10km

CL400GQDDLR4

Product Features

- Compliant with 100G Lambda MSA:-400GBASE-LR4-10 optical interface
- Compliant with IEEE 802.3bs standard:400GAUI-8 electrical interface
- Compliant with QSFP-DD MSA HW Rev 5.1 type 2 housing with duplex LC connector
- Compliant with QSFP-DD CMIS Rev 5.0
- Operating distance at engineering link of up to 10km
- Maximum power consumption 9 W
- Case operating temperature 0℃to 70℃
- 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 L0	λC0	1264.5	1271	1277.5	nm	
Wavelength L1	λC1	1284.5	1291	1297.5	nm	
Wavelength L2	λC2	1304.5	1311	1317.5	nm	
Wavelength L3	λC3	1324.5	1331	1337.5	nm	
Side Mode Suppression Ratio	SMSR	30	-	-	dB	
Average Launch Power, each lane	AOPL	-2.7	-	5.1	dBm	1
Outer Optical Modulation Amplitude (OMAouter), each lane	TOMA	-	-	4.4	dBm	
Outer Optical Modulation Amplitude (OMAouter) each lane: for TDECQ <1.4dB for 1.4≤TDECQ≤3.4dB	TOMA	0.3 -1.1+TDECQ				
Difference in launch power between any two lanes (OMAouter)	DP	-	-	4	dB	
Transmitter and Dispersion Eye Closure for PAM4 (TDECQ), each lane	TDECQ	-	-	3.9	dB	
Transmitter eye closure for PAM4(TECQ)	TECQ	-	-	3.9	dB	
| TDECQ - TECQ |	-	-	-	2.5	dB	
Over/under-shoot	-	-	-	25	%	
Transmitter peak-to-peak power	-	-	-	5.2	dBm	
Average Launch Power of OFF Transmitter, each lane	TOFF	-	-	-16	dBm	
Extinction Ratio, each lane	ER	3.5	-	-	dB	
Transmitter transition time	-	-	-	17	ps	
RIN15.6OMA	RIN	-	-	-136	dB/Hz	
Optical Return Loss Tolerance	ORL	-	-	15.6	dB	

Transmitter Reflectance	TR	-	-	-26	dB	

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 L0	λC0	1264.5	1271	1277.5	nm	
Wavelength L1	λC1	1284.5	1291	1297.5	nm	
Wavelength L2	λC2	1304.5	1311	1317.5	nm	
Wavelength L3	λC3	1324.5	1331	1337.5	nm	
Damage Threshold, each lane	AOPD	6.1	-	-	dBm	
Average Receive Power, each lane	AOPR	-9	-	5.1	dBm	1
Receive Power (OMAouter), each lane	OMAR	-	-	4.4	dBm	
Difference in receive power between any two lanes (OMAouter)	DR	-	-	4.3	dB	
Receiver Reflectance	RR	-	-	-26	dB	
Receiver Sensitivity (OMAouter), each lane for TECQ <1.4dB for 1.4≤TECQ≤3.4dB	SOMA	-	-	-6.8 -8.2+TECQ	dBm	
Stressed Receiver Sensitivity (OMAouter), each lane	SRS	-	-	-4.3	dBm	
Conditions of stressed receiver sensitivity test						
Stressed eye closure for PAM4 (SECQ)	-	-	3.9	-	dB	
OMAouter of each aggressor lane	-	-	-0.4	-	dBm	

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

Ordering Information

Table 3 - Ordering Information

Part No.	Application	Data Rate	Laser Source	Fiber Type
CL400GQDDLR4	400GBASE-LR4-10	400GB Ethernet	EML	Single Mode Fiber

CONTACT:

Email: sales@c-light.com http://www.c-light.com