

INTERNATIONAL ELECTROTECHNICAL COMMISSION
COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

IEC 62149-3
Edition 3.0 2020-07

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**FIBRE OPTIC ACTIVE COMPONENTS AND
DEVICES – PERFORMANCE STANDARDS –**

**COMPOSANTS ET DISPOSITIFS ACTIFS
FIBRONIQUES – NORMES DE PERFORMANCES –**

**Part 3: Modulator-integrated laser diode
transmitters for 40-Gbit/s fibre optic
transmission systems**

**Partie 3: Émetteurs à diodes laser à modulateur
intégré pour systèmes de
transmission fibroniques 40 Gbit/s**

CORRIGENDUM 1

Corrections to the French version appear after the English text.

Les corrections à la version française sont données après le texte anglais.

Clause 2 – Normative references

Add the following new reference:

IEC 61300-2-4, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-4: Tests – Fibre or cable retention*

Table 6 – Performance test plan

Replace the existing Table 6 with the following new table:

Test		Reference	Conditions	Sample size
Endurance tests of module	High temperature storage	IEC 60068-2-2	Temperature: $T = T_{\text{stg max}}$. Duration: > 2 000 h ^b	11
	Low temperature storage	IEC 60068-2-1	Temperature: $T = T_{\text{stg min}}$. Duration: > 2 000 h ^b	11
	Temperature cycling	IEC 60068-2-14	Test Na Temperature: $T_A = T_{\text{stg min}}$. $T_B = T_{\text{stg max}}$. Number of cycles = 100 duration of exposure ^d	11
	Damp heat	IEC 60068-2-78	$T = 40\text{ °C}$, RH = 95 %, 56 days	11

Test		Reference	Conditions	Sample size
	Cyclic moisture resistance	MIL-STD-883-1 Method 1004.7		11
Endurance test of laser diode on submount		IEC 62572-3	Temperature: at least two test temperatures: ϕ_e specified, constant power $T_{sub1} = T_{sub\ max.}$ $T_{sub2} \leq (T_{sub1} - 20) \text{ }^\circ\text{C}$ or $T_{sub2} \leq (T_{sub1} - 10) \text{ }^\circ\text{C}$ if applicable Duration: > 5 000 h ^b	By agreement ^c By agreement ^c
Endurance test of photodiode in representative package		IEC 62572-3	Temperature: at least two test temperatures: V_R or I_R specified $T_{sub1} = 125 \text{ }^\circ\text{C min.}$ ^a $T_{sub2} \leq (T_{sub1} - 30 \text{ }^\circ\text{C})$ Duration: > 1 000 h	By agreement ^c By agreement ^c
Power cycle tests of the thermoelectric cooler			Number of cycles: 20 000 $T_{CASE} = T_{op\ max.}$ $T_{sub} = T_{CASE}$ to $(T_{CASE} - \Delta T_{max})$	11
High temperature storage of the thermal sensor		MIL-STD-883-1 Method 1008.2	$T = T_{stg\ max}$ of the sensor	25
Fibre pull		IEC 61300-2-4	5 s, 3 times, pull force ^e : 10 N for fibre cables 5,0 N for buffered fibres 2,0 N for primary coated fibres	11
Mechanical shock		IEC 60068-2-27	5 000 m/s ² , 1,0 ms 5 times/axis	11
Vibration		IEC 60068-2-6	200 m/s ² , 20 Hz to 2 000 Hz, 4 min/cycle, 4 cycles/axis	11
Thermal shock		IEC 60068-2-14	$\Delta T = 100 \text{ }^\circ\text{C}$	11
ESD		IEC 60749-26	Human body model	11
Internal moisture		IEC 60749-7	$\leq 5\ 000 \times 10^{-6}$	11

^a Or as limited by technology.

^b Provided data about the distribution of wear-out lifetime is accumulated with significant accuracy. Provisional approval for product shipment shall be granted at 2 000 h. It is also recommended to continue the test until accurate extrapolation of lifetime is possible with an upper limit of 10 000 h. Duration up to 5 000 h may be needed for accurate lifetime prediction.

^c The number shall be determined by discussion between the manufacturers and users concerned.

^d Duration of exposure shall be specified in the relevant specification.

^e Pull force shall be specified by the corresponding fibre/cable categories described in IEC 61300-2-4.