

# GHMT PVP Testplan-LWL MPO/MTP® Ed. 1.0 (summary)

Fibre Optic Interconnecting Devices and Passive Components –  
Terminated MPO/MTP® Cable Assemblies



## Performance Requirements

Optical Parameters (MM: 850nm, 1.300nm; SM: 1.310nm, 1.550nm)

|                          | Ferrule  | Level 1        | Level 2        | Level 3        |
|--------------------------|----------|----------------|----------------|----------------|
| Max. random Attenuation* | PC / APC | $\leq 0,15$ dB | $\leq 0,25$ dB | $\leq 0,50$ dB |
| Min. Return Loss**       | MM PC    | $\geq 40$ dB   | $\geq 30$ dB   | $\geq 20$ dB   |
|                          | SM PC    | $\geq 50$ dB   | $\geq 45$ dB   | $\geq 35$ dB   |
|                          | SM APC   | $\geq 75$ dB   | $\geq 70$ dB   | $\geq 60$ dB   |

\*according IEC 61300-3-4 (Insertion method C2; limit for 100% of plugs)

\*\*according IEC 61300-3-6

Geometric Parameters (Ferrule Endface) – 12 Fasern – IEC 61755-3-31 (SM & MM)

|                      |    | Level 1                              | Level 2                              | Level 3                              |
|----------------------|----|--------------------------------------|--------------------------------------|--------------------------------------|
| Radius about x-axis  | Rx | min. 2.000mm                         | min. 2.000mm                         | min. 2.000mm                         |
| Radius about y-axis  | Ry | min. 5mm                             | min. 5mm                             | min. 5mm                             |
| X Angle              | Sx | $-0,15^\circ \leq x \leq 0,15^\circ$ | $-0,15^\circ \leq x \leq 0,15^\circ$ | $-0,15^\circ \leq x \leq 0,15^\circ$ |
| Y Angle tolerance    | Sy | $-0,2^\circ \leq x \leq 0,2^\circ$   | $-0,2^\circ \leq x \leq 0,2^\circ$   | $-0,2^\circ \leq x \leq 0,2^\circ$   |
| Nominal Y Angle – SM | Sy | 8°                                   | 8°                                   | 8°                                   |
| Nominal Y Angle – MM | Sy | 0°                                   | 0°                                   | 0°                                   |

|                                              |    |                                             |                                             |                                             |
|----------------------------------------------|----|---------------------------------------------|---------------------------------------------|---------------------------------------------|
| Fiber protrusion (for each individual fiber) | H  | $1\mu\text{m} \leq x \leq 3,5\mu\text{m}$   | $1\mu\text{m} \leq x \leq 3,5\mu\text{m}$   | $1\mu\text{m} \leq x \leq 5\mu\text{m}$     |
| Minus side coplanarity                       | CF | $0\mu\text{m} \leq x \leq 0,40\mu\text{m}$  | $0\mu\text{m} \leq x \leq 0,40\mu\text{m}$  | $0\mu\text{m} \leq x \leq 0,40\mu\text{m}$  |
| Maximum core dip (only MM)                   | Cd | $0\mu\text{m} \leq x \leq 0,125\mu\text{m}$ | $0\mu\text{m} \leq x \leq 0,125\mu\text{m}$ | $0\mu\text{m} \leq x \leq 0,125\mu\text{m}$ |
| Radius of fiber tip                          | RF | min. 1mm                                    | min. 1mm                                    | min. 1mm                                    |

Mating Cycle Test (Fibre Optic Mating Adapters)

|  |                   |                |
|--|-------------------|----------------|
|  | $\Delta$ IL Max.: | $\leq 0,20$ dB |
|--|-------------------|----------------|

### Remark:

The tested component has to PASS the limits **before** and **after** the change of temperature test.

## Test Conditions

Change of Temperature Test [IEC 61300-2-22 Cat. C]

|                 |                   |         |  |
|-----------------|-------------------|---------|--|
| Test Procedure: | Number of Cycles: | 5       |  |
|                 | Min. Temperature: | -10 °C  |  |
|                 | Max. Temperature: | +60 °C  |  |
|                 | Humidity:         | -       |  |
|                 | Rate of Change:   | 1 K/min |  |
|                 | Time of Exposure: | 60 min. |  |

Mating Cycle Test (Fibre Optic Coupler)

|                 |                    |        |  |
|-----------------|--------------------|--------|--|
| Test Procedure: | Number of Matings: | 3 x 50 |  |
|-----------------|--------------------|--------|--|