TECHNICAL PARAMETERS FOR OPTICAL CONNECTORS WITH CYLINDRICAL FERRULE ASSEMBLED BY DLL PARTNERS CLASS MM PC STANDARD

Attenuation

Attenuation based on a standards IEC 61753-022-2, IEC 61300-3-6, IEC 61300-3-34:

- Insertion loss max.: ≤ 0,5 dB (for ± 95%) (grade M),
  ≤ 0,75 dB (for 100%) (grade M),
- Insertion loos typical : ≤ 0,35 dB, (grade M),
- Return loss: ≥ 20 dB (grade M).

Geometric parameters

Geometric parameters:

- Radius of curvature: 5 - 30 mm,
- Angle max.: 0,6°,
- Fiber height: -100°÷100 nm.

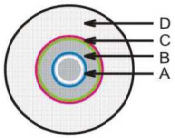
* A negative value means protruding fiber.

Visual requirements

Visual requirements based on a standard IEC 61300-3-35, table 6 (MM PC):

Zone name	Scratches	Defects
A: core (0-65 µm)	No limit ≤ 3 µm None > 3 µm	4 < 5 µm None > 5 µm
B: cladding (65-120 µm)	No limit ≤ 5 µm None > 5 µm	No limit < 2 µm 5 from 2-5 µm None > 5 µm
C: adhesive (120-130 µm)	No limit	No limit
D: contact (130-250 µm)	No limit	None ≥ 10 µm

For scratches, the requirement refers to widht.
No visible subsurface cracks are allowed in the core or cladding.
All loose particles should be removed.
There are no requirements for the area outside the contact zone.



TECHNICAL PARAMETERS FOR OPTICAL CONNECTORS WITH CYLINDRICAL FERRULE ASSEMBLED BY DLL PARTNERS CLASS MM PC PREMIUM

Attenuation

Attenuation based on a standards IEC 61753-022-2 (higher performance) , IEC 61300-3-6, IEC 61300-3-34:

- Insertion loss max.: ≤ 0,25 dB (for ≥ 97%),
- Insertion loos typical : ≤ 0,12 dB,
- Return loss: ≥ 26 dB.

Geometric parameters

Geometric parameters:

- Radius of curvature: 5 - 30 mm,
- Apex offset: 0-50 µm,
- Angle max.: 0,3°,
- Fiber height: -100°÷A_{max}**,

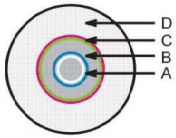
* a negative value means protruding fiber
**maximum value is detrmined by the following formula:
for ferrule 2.5 mm: A_{max} =1988 * $B^{0.4765}$ B * 10°+(B'' * 10' C')$^{0.5}$ * 10' - 60
for ferrule 1.25 mm: A_{max} =1798 * $B^{0.4765}$ B * 10°+(B'' * 10' C')$^{0.5}$ * 10' - 60
B - Radius of curvature
C - Apex offset

Visual requirements

Visual requirements based on a standard IEC 61300-3-35:

Zone name	Scratches	Defects
A: core (0-65 µm)	2 ≤ 3 µm None > 3 µm	None
B: cladding (65-120 µm)	No limit ≤ 3 µm None > 3 µm	No limit < 2 µm 5 from 2-5 µm None > 5 µm
C: adhesive (120-130 µm)	No limit	No limit
D: contact (130-250 µm)	No limit	None ≥ 10 µm

For scratches, the requirement refers to widht.
No visible subsurface cracks are allowed in the core or cladding.
All loose particles should be removed.
There are no requirements for the area outside the contact zone.



TECHNICAL PARAMETERS FOR OPTICAL CONNECTORS WITH CYLINDRICAL FERRULE ASSEMBLED BY DLL PARTNERS CLASS SM UPC STANDARD

Attenuation

Attenuation based on a standards IEC 61755-2-1, IEC 61300-3-6, IEC 61300-3-34:

- Insertion loss max.: ≤ 0,50 dB (for ≥ 97%) (grade C),
- Insertion loos typical : ≤ 0,25 dB (grade C),
- Return loss: ≥ 45 dB (grade 2).

Geometric parameters

Geometric parameters based on a standards IEC 61755-3-1, grade C:

- Radius of curvature: 5 - 30 mm,
- Apex offset: 0-50 µm,
- Angle max.: 0,3°,
- Fiber height: -100°÷A_{max}**,

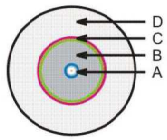
* a negative value means protruding fiber
**maximum value is detrmined by the following formula:
for ferrule 2.5 mm: A_{max} =1988 * $B^{0.4765}$ B * 10°+(B'' * 10' C')$^{0.5}$ * 10' - 60
for ferrule 1.25 mm: A_{max} =1798 * $B^{0.4765}$ B * 10°+(B'' * 10' C')$^{0.5}$ * 10' - 60
B - Radius of curvature
C - Apex offset

Visual requirements

Visual requirements based on a standard IEC 61300-3-35, table 3 (RL≥45 dB):

Zone name	Scratches	Defects
A: core (0-25 µm)	None	None
B: cladding (25-120 µm)	No limit ≤ 3 µm None > 3 µm	No limit < 2 µm 5 from 2-5 µm None > 5 µm
C: adhesive (120-130 µm)	No limit	No limit
D: contact (130-250 µm)	No limit	None ≥ 10 µm

For scratches, the requirement refers to widht.
No visible subsurface cracks are allowed in the core or cladding.
All loose particles should be removed.
There are no requirements for the area outside the contact zone.



TECHNICAL PARAMETERS FOR OPTICAL CONNECTORS WITH CYLINDRICAL FERRULE ASSEMBLED BY DLL PARTNERS CLASS SM UPC PREMIUM

Attenuation

Attenuation based on a standards IEC 61755-2-1, IEC 61300-3-6, IEC 61300-3-34:

- Insertion loss max.: ≤ 0,25 dB (for ≥ 97%) (grade B),
- Insertion loos typical : ≤ 0,12 dB (grade B),
- Return loss: ≥ 45 dB (grade 2).

Geometric parameters

Geometric parameters based on a standards IEC 61755-3-1 (higher performance):

- Radius of curvature: 7 - 25 mm,
- Apex offset: 0-50 µm,
- Angle max.: 0,2°,
- Fiber height: -60°÷A_{max}**,

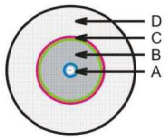
* a negative value means protruding fiber
**maximum value is detrmined by the following formula:
for ferrule 2.5 mm: A_{max} =1988 * $B^{0.4765}$ B * 10°+(B'' * 10' C')$^{0.5}$ * 10' - 60
for ferrule 1.25 mm: A_{max} =1798 * $B^{0.4765}$ B * 10°+(B'' * 10' C')$^{0.5}$ * 10' - 60
B - Radius of curvature
C - Apex offset

Visual requirements

Visual requirements based on a standard IEC 61300-3-35, table 3 (RL≥45 dB):

Zone name	Scratches	Defects
A: core (0-25 µm)	None	None
B: cladding (25-120 µm)	No limit ≤ 3 µm None > 3 µm	No limit < 2 µm 5 from 2-5 µm None > 5 µm
C: adhesive (120-130 µm)	No limit	No limit
D: contact (130-250 µm)	No limit	None ≥ 10 µm

For scratches, the requirement refers to widht.
No visible subsurface cracks are allowed in the core or cladding.
All loose particles should be removed.
There are no requirements for the area outside the contact zone.



TECHNICAL PARAMETERS FOR OPTICAL CONNECTORS WITH MT FERRULE ASSEMBLED BY DLL PARTNERS CLASS MM STANDARD

Attenuation

Attenuation based on a standards IEC 61753-022-2, IEC 61300-3-6, IEC 61300-3-34:

- Insertion loss max.: ≤ 0,5 dB (for ± 95%) (grade M),
  ≤ 0,75 dB (for 100%) (grade M),
- Insertion loos typical : ≤ 0,35 dB, (grade M),
- Return loss: ≥ 20 dB (grade M).

Visual requirements

Visual requirements based on a standard IEC 61300-3-35, table 6:

Zone name	Scratches	Defects
A: core (0-65 µm)	No limit ≤ 3 µm None > 3 µm	4 < 5 µm None > 5 µm
B: cladding (65-115 µm)	No limit ≤ 5 µm None > 5 µm	No limit < 2 µm 5 from 2-5 µm None > 5 µm

For scratches, the requirement refers to widht.
No visible subsurface cracks are allowed in the core or cladding.
All loose particles should be removed.
There are no requirements for the area outside the cladding zone.

TECHNICAL PARAMETERS FOR OPTICAL CONNECTORS WITH MT FERRULE ASSEMBLED BY DLL PARTNERS CLASS SM STANDARD

Attenuation

Attenuation based on a standards IEC 61755-2-1, IEC 61300-3-6, IEC 61300-3-34:

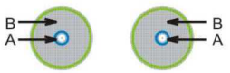
- Insertion loss max.: ≤ 1,0 dB (for ≥ 97%) (grade D),
- Insertion loos typical : ≤ 0,5 dB, (grade D),
- Return loss: ≥ 26 dB (grade 4).

Visual requirements

Visual requirements based on a standard IEC 61300-3-35 (SM≥26 dB):

Zone name	Scratches	Defects
A: core (0-25 µm)	2 ≤ 3 µm None > 3 µm	2 < 5 µm None > 5 µm
B: cladding (25-115 µm)	No limit ≤ 3 µm 3 > 3 µm	No limit < 2 µm 5 from 2-5 µm None > 5 µm

For scratches, the requirement refers to widht.
No visible subsurface cracks are allowed in the core or cladding.
All loose particles should be removed.
There are no requirements for the area outside the cladding zone.



TECHNICAL PARAMETERS FOR OPTICAL CONNECTORS WITH CYLINDRICAL FERRULE ASSEMBLED BY DLL PARTNERS CLASS SM APC 8° STANDARD

Attenuation

Attenuation based on a standards IEC 61755-2-2, IEC 61300-3-6, IEC 61300-3-34:

- Insertion loss max.: ≤ 0,50 dB (for ≥ 97%) (grade C),
- Insertion loos typical : ≤ 0,25 dB (grade C),
- Return loss: ≥ 60 dB (grade 1).

Geometric parameters

Geometric parameters based on a standards IEC 61755-3-2, grade C:

- Radius of curvature: 5 - 12 mm,
- Apex offset: 0-50 µm,
- Angle max.: 0,3°,
- Fiber height: -100°÷A_{max}**,

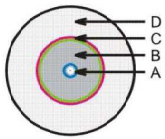
* a negative value means protruding fiber
**maximum value is detrmined by the following formula:
for ferrule 2.5 mm: A_{max} =1988 * $B^{0.4765}$ B * 10°+(B'' * 10' C')$^{0.5}$ * 10' - 60
for ferrule 1.25 mm: A_{max} =1798 * $B^{0.4765}$ B * 10°+(B'' * 10' C')$^{0.5}$ * 10' - 60
B - Radius of curvature
C - Apex offset

Visual requirements

Visual requirements based on a standard IEC 61300-3-35, table 4 (SM APC):

Zone name	Scratches	Defects
A: core (0-25 µm)	≤ 4	None
B: cladding (25-120 µm)	No limit	No limit < 2 µm 5 from 2-5 µm None > 5 µm
C: adhesive (120-130 µm)	No limit	No limit
D: contact (130-250 µm)	No limit	None ≥ 10 µm

For scratches, the requirement refers to widht.
No visible subsurface cracks are allowed in the core or cladding.
All loose particles should be removed.
There are no requirements for the area outside the contact zone.



TECHNICAL PARAMETERS FOR OPTICAL CONNECTORS WITH CYLINDRICAL FERRULE ASSEMBLED BY DLL PARTNERS CLASS SM APC 8° PREMIUM

Attenuation

Attenuation based on a standards IEC 61755-2-2, IEC 61300-3-6, IEC 61300-3-34:

- Insertion loss max.: ≤ 0,25 dB (for ≥ 97%) (grade B),
- Insertion loos typical : ≤ 0,12 dB (grade B),
- Return loss: ≥ 60 dB (grade 1).

Geometric parameters

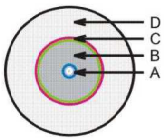
Geometric parameters based on a standards IEC 61755-3-2 (higher performance):

- Radius of curvature: 5 - 12 mm,
- Apex offset: 0-50 µm,
- Angle max.: 0,2°,
- Fiber height: -60°÷A_{max}**,

* a negative value means protruding fiber
**maximum value is detrmined by the following formula:
for ferrule 2.5 mm: A_{max} =1988 * $B^{0.4765}$ B * 10°+(B'' * 10' C')$^{0.5}$ * 10' - 60
for ferrule 1.25 mm: A_{max} =1798 * $B^{0.4765}$ B * 10°+(B'' * 10' C')$^{0.5}$ * 10' - 60
B - Radius of curvature
C - Apex offset

Visual requirements

Visual requirements based on a standard IEC 61300-3-35, table 4 (SM APC):

Zone name	Scratches	Defects
A: core (0-25 µm)	≤ 4	None
B: cladding (25-120 µm)	No limit	No limit < 2 µm 5 from 2-5 µm None > 5 µm
C: adhesive (120-130 µm)	No limit	No limit
D: contact (130-250 µm)	No limit	None ≥ 10 µm

For scratches, the requirement refers to widht.
No visible subsurface cracks are allowed in the core or cladding.
All loose particles should be removed.
There are no requirements for the area outside the contact zone.