



LIACC FO Access Duct Dielectric cable type UDD2 up to 24 cores, single tube



*All images are indicative

Features

Small diameter and very light weight
All Dielectric Non-Metallic design
Waterproof
HDPE and UV-Resistant outer jacket

Standards of reference and applications

IEC 60793, IEC 60794-1, IEC60794-3-20, ANSI/ICEA S-104-696, EN 187105, Telcordia GR-20 | Telcordia GR-409
Intrabuilding Voice and Data/LAN Communication Networks
Telecommunication, MAN, WAN
FTTx backbone and access
Interconnection of distribution boxes, frames and panels at customer's side

Installation Features

Store at -40 to +70 °C

Install at -30 to +60 °C, **Bend minimum** 20 times O.D.

Operate at -30 to +70 °C, **Bend minimum** 15 times O.D.

Design

Optical fiber : 125/250µm Single Mode or Multi Mode

Buffer : PBTP loose tube filled with thixotropic jelly (typical diam. 2.8mm)

Strength elements : 2 x FRP rods inside the outer jacket

Peripheral elements : glass yarns with ripcord

Outer jacket : Black HDPE material UV-Resistant

Marking : APS Finland - ww/yy - Fiber Optic Cable UDD2 fiber count x fiber type - P/N - lot + meter

Environmental properties

UV resistant : UL1581, IEC11801

Mechanical properties

Pulling tension in installation : 700N ($\Delta\alpha$ reversible, IEC 60794-1-2-E1)

Pulling tension in operation : 200N ($\Delta\alpha$ reversible, IEC 60794-1-2-E1)

Crush : 200N/100mm, max 15 min. ($\Delta\alpha$ reversible, IEC 60794-1-2-E3)

Impact : 1Nm, 3 impacts, R=300mm ($\Delta\alpha$ reversible, IEC 60794-1-2-E4)

Torsion : 1m, 100N, +/-180°, 10 cycles ($\Delta\alpha$ reversible, IEC 60794-1-2-E7)

Repeated bending : R=20xOD, 100N, 35 cycles ($\Delta\alpha$ reversible, IEC 60794-1-2-E6)

Bending radius : R=20xOD, 4 turns, 3 cycles ($\Delta\alpha$ reversible, IEC 60794-1-2-E11)

Temperature cycling : -40°C to +70°C, ($\Delta\alpha$ reversible, IEC 60794-1-2-F1)

Water penetration : 3m cable, 1m water, 24 hours (no leakage, IEC 60794-1-2-F5B)

Colour code of tubes and fibers

Tube	1												
	Natural												
Fibers	Option 1	1x24											

	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua
	13	14	15	16	17	18	19	20	21	22	23	24
	Blue/black	Orange/black	Green/Black	Brown/black	Grey/black	White/black	Red/black	Natural	Yellow/black	Violet/black	Pink/black	Aqua/black
Fibers	Option 2	2x12										
Bundle A	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua
Bundle B	13	14	15	16	17	18	19	20	21	22	23	24
	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua

Fiber Optic characteristics

See detailed specification of optical fibers.

Ordering and delivery information

Fiber Count	Part Number	No. of tubes	Fibers per tube	Fillers	Nominal O.D. (mm)	Weight (kg/km)	Packaging
2 (option 1)	UDD21 02 xx Eoo	1	2	0	7.2	42	Drum (2 or 4km)
4 (option 1)	UDD21 04 xx Eoo	1	4	0	7.2	42	Drum (2 or 4km)
8 (option 1)	UDD21 08 xx Eoo	1	8	0	7.2	42	Drum (2 or 4km)
12 (option 1)	UDD21 12 xx Eoo	1	12	0	7.2	42	Drum (2 or 4km)
24 (option 1)	UDD21 24 xx Eoo	1	24	0	7.2	42	Drum (2 or 4km)
2 (option 2)	UDD22 02 xx Eoo	1	2	0	7.2	42	Drum (2 or 4km)
4 (option 2)	UDD22 04 xx Eoo	1	4	0	7.2	42	Drum (2 or 4km)
8 (option 2)	UDD22 08 xx Eoo	1	8	0	7.2	42	Drum (2 or 4km)
12 (option 2)	UDD22 12 xx Eoo	1	12	0	7.2	42	Drum (2 or 4km)
24 (option 2)	UDD22 24 xx Eoo	1	24	0	7.2	42	Drum (2 or 4km)

xx = fiber type ex. OS2=S2, G657A1= 71, OM1=M1, OM2=M2, OM3=M3, OM4=M4, OM5=M5
 oo = delivery length ex. 2000m=D2, 4000m=D4 (tolerance ±5%)

Recommended connectivity

Pigtails : APS LIIN-25 series

Patch cords : APS LIIN-25 series

Adapters : APS LIIN-25 series

Patch Panels : APS LIIN-25 series

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LIACC FO Access Duct Metallic cable type UDD2 up to 24 cores, single tube



*All images are indicative

Features

Small diameter and very light weight

Metallic strength members
Waterproof
HDPE and UV-Resistant outer jacket

Standards of reference and applications

IEC 60793, IEC 60794-1, IEC60794-3-20, ANSI/ICEA S-104-696, EN 187105, Telcordia GR-20 | Telcordia GR-409
Intrabuilding Voice and Data/LAN Communication Networks
Telecommunication, MAN, WAN
FTTx backbone and access
Interconnection of distribution boxes, frames and panels at customer's side

Installation Features

Store at -40 to +70 °C
Install at -30 to +60 °C, **Bend minimum** 20 times O.D.
Operate at -30 to +70 °C, **Bend minimum** 15 times O.D.

Design

Optical fiber : 125/250µm Single Mode or Multi Mode
Buffer : PBTP loose tube filled with thixotropic jelly (typical diam. 2.8mm)
Strength elements : 2 x steel rods inside the outer jacket
Peripheral elements : glass yarns with ripcord
Outer jacket : Black HDPE material UV-Resistant
Marking : APS Finland - ww/yy - Fiber Optic Cable UDM2 fiber count x fiber type - P/N - lot + meter

Environmental properties

UV resistant : UL1581, IEC11801

Mechanical properties

Pulling tension in installation : 100N ($\Delta\alpha$ reversible, IEC 60794-1-2-E1)
Pulling tension in operation : 400N ($\Delta\alpha$ reversible, IEC 60794-1-2-E1)
Crush : 200N/100mm, max 15 min. ($\Delta\alpha$ reversible, IEC 60794-1-2-E3)
Impact : 1Nm, 3 impacts, R=300mm ($\Delta\alpha$ reversible, IEC 60794-1-2-E4)
Torsion : 1m, 100N, +/-180°, 10 cycles ($\Delta\alpha$ reversible, IEC 60794-1-2-E7)

Repeated bending : R=20xOD, 100N, 35 cycles ($\Delta\alpha$ reversible, IEC 60794-1-2-E6)

Bending radius : R=20xOD, 4 turns, 3 cycles ($\Delta\alpha$ reversible, IEC 60794-1-2-E11)

Temperature cycling : -40°C to +70°C, ($\Delta\alpha$ reversible, IEC 60794-1-2-F1)

Water penetration : 3m cable, 1m water, 24 hours (no leakage, IEC 60794-1-2-F5B)

Colour code of tubes and fibers

Tube	1											
	Natural											
Fibers	Option 1	1x24										
	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua
	13	14	15	16	17	18	19	20	21	22	23	24
	Blue/black	Orange/black	Green/Black	Brown/black	Grey/black	White/black	Red/black	Natural	Yellow/black	Violet/black	Pink/black	Aqua/black
Fibers	Option 2	2x12										
Bundle A	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua
Bundle B	13	14	15	16	17	18	19	20	21	22	23	24
	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua

Fiber Optic characteristics

See detailed specification of optical fibers.

Ordering and delivery information

Fiber Count	Part Number	No. of tubes	Fibers per tube	Fillers	Nominal O.D. (mm)	Weight (kg/km)	Packaging
2 (option 1)	UDM21 02 xx Eoo	1	2	0	7.2	42	Drum (2 or 4km)
4 (option 1)	UDM21 04 xx Eoo	1	4	0	7.2	42	Drum (2 or 4km)
8 (option 1)	UDM21 08 xx Eoo	1	8	0	7.2	42	Drum (2 or 4km)
12 (option 1)	UDM21 12 xx Eoo	1	12	0	7.2	42	Drum (2 or 4km)

Fiber Count	Part Number	No. of tubes	Fibers per tube	Fillers	Nominal O.D. (mm)	Weight (kg/km)	Packaging
24 (option 1)	UDM21 24 xx Eoo	1	24	0	7.2	42	Drum (2 or 4km)
2 (option 2)	UDM22 02 xx Eoo	1	2	0	7.2	42	Drum (2 or 4km)
4 (option 2)	UDM22 04 xx Eoo	1	4	0	7.2	42	Drum (2 or 4km)
8 (option 2)	UDM22 08 xx Eoo	1	8	0	7.2	42	Drum (2 or 4km)
12 (option 2)	UDM22 12 xx Eoo	1	12	0	7.2	42	Drum (2 or 4km)
24 (option 2)	UDM22 24 xx Eoo	1	24	0	7.2	42	Drum (2 or 4km)

xx = fiber type ex. OS2=S2, G657A1= 71, OM1=M1, OM2=M2, OM3=M3, OM4=M4, OM5=M5
oo = delivery length ex. 2000m=D2, 4000m=D4 (tolerance ±5%)

Recommended connectivity

Pigtails : APS LIIN-25 series

Patch cords : APS LIIN-25 series

Adapters : APS LIIN-25 series

Patch Panels : APS LIIN-25 series

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LIACC FO Access cable MTE 2-48 cores, Outdoor, 1500N



*All images are indicative

Features

Outdoor and duct installation
All Dielectric Non-Metallic design
Light weight

Standards of reference and applications

IEC 60793, IEC 60794
Intrabuilding Voice and Data/LAN Communication Networks
Installation in Ducts & Conduits
Building access in FTTx networks

Installation Features

Store at -40 to +70 °C
Install at -5 to +50 °C
Operate at -40 to +60 °C
Bend minimum 20 times O.D. (installation)
Bend minimum 15 times O.D. (static)

Design

Optical fiber : 125/250µm Single Mode or Multi Mode
Buffer : PBTP loose tube filled with jelly (nominal diameter 2.3mm).
Central member : FRP (nominal diameter 2.0mm).
Assembling : tubes and fillers assembled together according to "Colour Code" table
Wrapping : water blocking tape.
Protection : anti-rodent glass yarns.
Outer jacket : Black HDPE material, UV resistant (nominal thickness 1.5mm)
Marking : APS Finland - ww/yy - Fiber Optic Cable MTE fiber count x fiber type - P/N - lot + meter

Environmental properties

UV resistant : UL1581, IEC11801

Mechanical properties

Pulling tension : 1500 N ($\Delta\alpha$ reversible, IEC 60794-1-2-E1)

Crush : 2000N/100mm ($\Delta\alpha$ reversible, IEC 60794-1-2-E3)

Impact : 10J ($\Delta\alpha$ reversible, IEC 60794-1-2-E4)

Water penetration : 3m cable, 1m water, 24 hours (IEC 60794-1-2-F5)

Colour code of tubes and fibers

	1	2	3	4	5	6	7	8	9	10	11	12
Tube Colours	Blue	Orange	Green	Brown	Grey	White (natural)	Red	Black	Yellow	Violet	Pink	Aqua
Fiber Colours	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua
Fillers	Black											

Fiber Optic characteristics

See detailed specification of optical fibers.

Ordering and delivery information

Fiber Count	Part Number	No. of tubes	Fibers per tube	Fillers	O.D. (mm)	Weight (kg/km)	Packaging						
2	MTE1502xxoo	1	2	5	11.5	60	Drum						
4	MTE1504xxoo	1	4	5	11.5	60	Drum						
8	MTE1508xxoo	1	8	5	11.5	60	Drum						
12	MTE1512xxoo	1	12	5	11.5	60	Drum						
24	MTE15243xxoo	3	8	3	11.5	60	Drum						
24	MTE15242xxoo	2	12	4	11.5	60	Drum						

Fiber Count	Part Number	No. of tubes	Fibers per tube	Fillers	O.D. (mm)	Weight (kg/km)	Packaging					
48	MTE1548xxoo	4	12	2	11.5	60	Drum					

xx = fiber type ex. OS2=S2, OM1=M1, OM2=M2, OM3=M3, OM4=M4
oo = delivery length ex. 2000m=D2, 4000m=D4

Recommended connectivity

- Pigtails** : APS LIIN-25 series
- Patch cords** : APS LIIN-25 series
- Adapters** : APS LIIN-25 series
- Patch Panels** : APS LIIN-25 series

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LIACC FO Access cable MTE 24-144 cores, Outdoor,

4000N

*All images are indicative



Features

Outdoor and duct installation
All Dielectric Non-Metallic design
Light weight

Standards of reference and applications

IEC 60793, IEC 60794
Intrabuilding Voice and Data/LAN Communication Networks
Installation in Ducts & Conduits
Building access in FTTx networks

Installation Features

Store at -40 to +70 °C
Install at -5 to +50 °C, **Bend minimum** 20 times O.D.
Operate at -40 to +70 °C, **Bend minimum** 10 times O.D.

Design

Optical fiber : 125/250µm Single Mode or Multi Mode
Buffer : PBTP loose tube filled with jelly (nominal diameter 2.0mm).
Central member : FRP (nominal diameter 2.5mm).
Assembling : tubes and fillers assembled together according to "Colour Code" table
Wrapping : water blocking tape.
Protection : anti-rodent glass yarns.
Rip cord : under the outer jacket.
Outer jacket : Black HDPE material, UV resistant (nominal thickness 1.5mm)
Marking : APS Finland - ww/yy - Fiber Optic Cable MTE40 fiber count x fiber type - P/N - lot + meter

Environmental properties

UV resistant : UL1581, IEC11801

Mechanical properties

Pulling tension : 4000 N ($\Delta\alpha$ reversible, IEC 60794-1-2-E1)

Crush : 2000N/100mm ($\Delta\alpha$ reversible, IEC 60794-1-2-E3)

Impact : 3J ($\Delta\alpha$ reversible, IEC 60794-1-2-E4)

Water penetration : 3m cable, 1m water, 24 hours (IEC 60794-1-2-F5)

Colour code of tubes and fibers

	1	2	3	4	5	6	7	8	9	10	11	12
Tube Colours	Blue	Orange	Green	Brown	Grey	White (natural)	Red	Black	Yellow	Violet	Pink	Aqua
Fiber Colours	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua
Fillers	Black											

Fiber Optic characteristics

See detailed specification of optical fibers.

Ordering and delivery information

Fiber Count	Part Number	No. of tubes	Fibers per tube	Fillers	O.D. (mm)	Weight (kg/km)	Packaging
24	MTE4024xxoo	2	12	4	9.5	95	Drum
48	MTE4048xxoo	4	12	2	9.5	95	Drum
72	MTE4072xxoo	6	12	0	12.0	130	Drum
96	MTE4096xxoo	8	12	0	12.0	130	Drum
144	MTE40A4xxoo	12	12	0	12.0	130	Drum

xx = fiber type

ex. OS2=S2, G657A1 = A1, OM1=M1, OM2=M2, OM3=M3, OM4=M4, OM5=M5

oo = delivery length

ex. 2000m=D2, 4000m=D4

Recommended connectivity

Pigtails : APS LIIN-25 series

Patch cords : APS LIIN-25 series

Adapters : APS LIIN-25 series

Patch Panels : APS LIIN-25 series

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