

EUROLAN

Connect IT

Eurolan 100G – MTP system for Data Centers



Copper



Fiber



Home



Rack 19"

Eurolan 100G – MTP system for Data Centers

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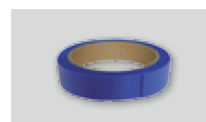
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Eurolan 100G

Eurolan 100G – MTP system for Data Centers

The Eurolan 100G system is a pre-terminated fiber-optic cable system intended for Data Centers. The Eurolan 100G is a modular system using OM3, OM4 and SM fibers with 12 or 24 MTP connectors supporting 1/10/40 and 100 Gbit Ethernet standards.

- Plug and play technology.
- Pre-terminated components allow quick deployment of the cabling infrastructure in Data Centers, eliminating on-site fiber fusion.
- Installation time is reduced by 75%.
- All components pass 100% production-type testing.
- Developed for any loss budget and has high reliability.
- Allows for high density of ports.
- Convenient organization of cables. Up to 70% reduction in total number of cables.

Eurolan components

Fiber-optic assembly, panels, cassettes and adaptor panels. A,B,C polarity methods are available. Method A is a standard one.



MTP – MTP assembly



MTP – LC assembly



MTP – LC cassette

Fields of application of 40G and 100G systems

40G	100G
• Applications access level (e.g. blade servers, virtualization) • Clusters • Storage area networks (SAN)	• Commutation switches and/or routers in the core • Aggregation • Service provider peering points • High-speed applications (e.g. streaming video)

MTP

Only MTP connectors are employed in Eurolan 100G. MTP (Mechanical Transfer Push-on) connector structure is an improved version of MPO (Multi-fiber push-on) connector. The MTP connector has elliptical centering plugs of noncorrosive steel for accurate location of fibers of the two communicating connectors and reduction of wear. Also the MT-ferrule has a floating structure that provides integrity of physical contact of the connectors under load.

Selection of 12 or 24 fiber assemblies

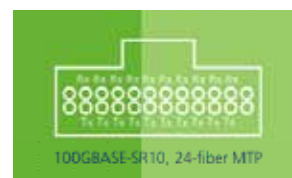
12- and 24-fiber connectors are available. Selection is determined by many factors: project requirements, expansion plans, price, optical characteristics, etc. In general, for 100G operation 20 fibers are required, thus system use with 24-fiber connectors is preferable. Also, the diameters of the 12- and 24- fiber cable assemblies are almost identical giving an advantage to 24-fiber systems due to the halving of the cable runs. Eurolan 100G supports both alternatives.

MTP channels can support 1/10G Ethernet, where only two fibers are used. In this case channels with MTP connectors are connected to cassettes and/or fanout-assemblies which are used to transition from MTP to LC or SC standard connectors.

In a transition from 1/10G to 40/100G operation, the cable run will be terminated into a cassette with MTP connectors and from there MTP pigtails will connect directly to the transceivers of the operating equipment.



12-fiber MTP connector



24-fiber MTP connector



Optical characteristics

The loss budget for the system will determine the fiber and cable type and length plus the connector type and its insertion loss.

The insertion loss requirements for 40G and 100G operation are significantly stricter in comparison with lesser high-speed Ethernet alternatives (see Table below).

In Eurolan 100G the acceptable level of insertion loss is achieved through:

- Use of connectors with minimum loss;
- Use of high-quality, factory-made fiber-optic assemblies and cassettes.

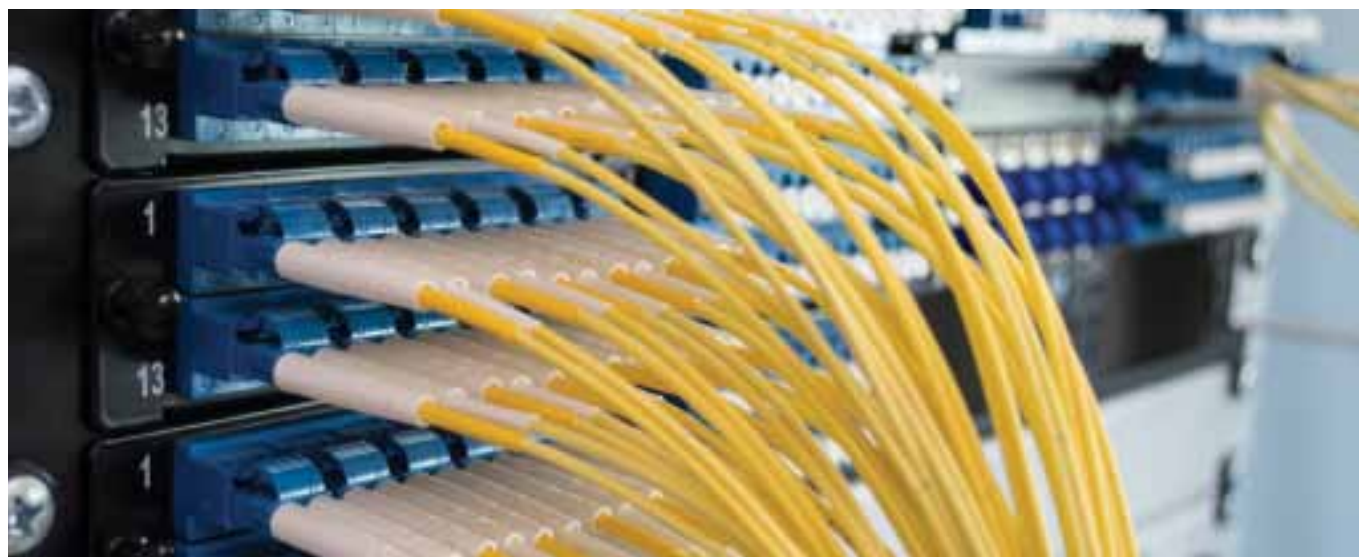
For OM3/OM4 MTP connectors of “super” class the level of insertion loss is less than 0.1dB

Optical parameters of Eurolan 100G connectors

	MTP OM3/OM4 “standard”	MTP OM3/OM4 “premium”	MTP OM3/OM4 “super”	MTP SM “standard”	MTP SM “premium”
Insertion loss IL	< 0,5 dB	< 0,35 dB	< 0,1 dB (only MTP 12)	< 0,5 dB	< 0,5 dB
Return loss RL	> 20 dB	> 25 dB	> 25 dB	> 50 dB	> 60 dB
	LC, SC OM3/OM4 “standard”	LC, SC OM3/OM4 “premium”		LC, SC SM “standard”	LC, SC SM “premium”
Insertion loss IL	< 0,35 dB	< 0,1 dB		< 0,35 dB	< 0,1 dB
Return loss RL	> 30 dB	> 30 dB		> 45 dB	> 50 dB

Factory-made and 100% tested

- 100% tested of optical parameters
- 100% tested of alignment control
- 100% polarity testing
- Test reports are available on request



OM3 or OM4 Fiber

Advantages of OM4 fiber in comparison with OM3 are an expanded transmission band allowing longer channel lengths, for example, for 40/100 Gbit Ethernet, maximum channel length using OM3 is 100m, and using OM4 is 150 meters.

Parameters of 50/125 μ multimode fiber OM3/OM4 for Eurolan 100G

Parameter	OM3, 850 nm	OM4, 850 nm
Attenuation, dB/km	3,0	3,0
Effective modal bandwidth (EMB) at 850 nm, Hz•km	2000	4700
Maximum channel length 1G, m	1000	1000
Maximum channel length 10G, m	300	550
Maximum channel length 40/100G, m	100	150

Perspective

Within the next few years Ethernet 40/100 Gbit high-speed technologies will spread to Data Centers of all types of organizations.

Modular 24-fiber MTP cable systems with the plug and play concept are the most cost-effective. The system supports existing technologies and transition to 40/100 Gbit will be easy.

The following should be taken into consideration:

- Total length of channels (in accordance with IEC specification),
- Right choice of polarity method,
- Loss budget calculation.

Color code

Cable assembly



OM3 – aqua



OM4 – magenta or aqua



SM – yellow

MTP-adaptors



OM3 – aqua or black



OM4 – magenta or black



SM – black or green

MTP-connectors



OM3 – aqua or beige



OM4 – magenta or beige



SM – green

LC-connectors



OM3 – aqua or beige



OM4 – magenta or beige



SM – blue, APC green

43	X	-	XX	-	XXX	-	XX	-	XX	-	XX	-	XX	-	XX		Pre-terminated fiber-optic assembly	
43	X																Type	
																	MTP – MTP	M
			XX														Fiber type	
																	Multimode OM3 50/125	30
																	Multimode OM4 50/125	40
																	Single mode OS2 9/125	S2
					XXX												Fiber count	
																	12, 24, 48, 72, 96, 144	
							XX										Connector (plug) type from left side	
																	MTP 12	M1
																	MTP 24	M2
									XX								Connector (plug) type from right side	
																	MTP 12	M1
																	MTP 24	M2
											XXX						Cable assembly length in meters	
																	1.0 m	001
																	1.5 m	01E
																	100 m	100
													XX				Carry-over length after connector in meters	
																	0.5 m	0E
																	1.5 m	1E
															XX		Type of MTP connector Male/Female and polarity	
																	Male A	MA
																	Female A	FA
																	B and C polarities are available on request	
																XX	Model	
																	MTP-MTP, series 30	30
																X	Class	
																	"standard"	D (-)
																	"premium"	P
																	"super"	S
																X	End finish	
																	PC/UPC	-
																	APC	A
43	X	-	XX	-	XXX	-	XX	-	XX	-	XXX	-	XX	-	XX	-	XX	Pre-terminated fiber-optic assembly

OM3 – aqua OM4 – magenta or aqua SM – yellow

OM3 – aqua
or beige

OM4 – magenta
or beige

SM – green

MTP – MTP fiber-optic assemblies



OM3 MTP-MTP assembly, 24-fiber



OM4 MTP-MTP assembly, 12-fiber



OM3 MTP-MTP assembly, 24-fiber with broach

Specification

- MTP – MTP female connectors
- 12, 24 fiber
- OM3, OM4, OS2
- Insertion loss:
“standard” < 0.5 dB,
“premium” < 0.35 dB,
“super” < 0.1 dB (MTP)
- A, B, C polarity
- Cable sheathing LSZH
- Cable diameter
12 fibers 3.0 mm
24 fibers 3.6 mm
48 fibers 8.0 mm
72, 96, 108 fibers 8.5 mm
144 fibers 9.0 mm
- MTP-connector in accordance with Telcordia GR-1435-CORE, IEC 61754-7 and TIA 604-5 MPO type
- Length- 1, 2, 3, 5, 10m and more according to the specification
- Factory-made and 100% tested
- Matching color code of cable sheathing and connectors
- Field of application:
Data Centers
storage area networks
- Individual package

Order example

	Product code	Description
1	43M-30-12-M1-M1-007-00-FA-30	Eurolan fiber-optic assembly 1 × MTP(12) – 1 × MTP(12), 12 fibers OM3, 7 m, femalefemale, A polarity
2	43M-40-12-M1-M1-010-00-FA-30	Eurolan fiber-optic assembly 1 × MTP(12) – 1 × MTP(12), 12 fibers OM4, 7 m, femalefemale, A polarity
3	43M-40-144-M1-M1-030-00-EA-30	Eurolan fiber-optic assembly 12 × MTP(12) – 12 × MTP(12), 144 fibers OM4, 3 m, carryovers 0.5 m, femalefemale, A polarity

43	X	-	XX	-	XXX	-	XX	-	XX	-	XXX	-	XX	-	XX	-	XX	-	XX		Pre-terminated fiber-optic assembly	
43	X																				Type	
																					MTP Fanout	H
			XX																		Fiber type	
																					Multimode OM3 50/125	30
																					Multimode OM4 50/125	40
																					Single mode OS2 9/125	S2
					XXX																Fiber count	
																					12, 24, 48, 72, 96, 144	
							XX														Connector (plug) type from left side	
																					MTP 12	M1
																					MTP 24	M2
																					Connector (plug) type from right side	
																					LC	LC
																					SC	SC
																					Cable assembly length in meters	
																					1.0 m	001
																					1.5 m	01E
																					100 m	100
																					Carry-over length after connector in meters	
																					0.5 m	0E
																					Other lengths of carry-overs are available upon request	
																					Type of MTP connector Male/Female and polarity	
																					Male A	MA
																					Female A	FA
																					B and C polarities are available on request	
																					Model	
																					MTP-Fanout 2,0 mm, series 20	20
																					Carry-overs with 900 μ buffered fiber are available upon request	
																					Class	
																					"standard"	D (-)
																					"premium"	P
																					"super"	S
																					End finish	
																					PC/UPC	-
																					APC	A
43	X	-	XX	-	XXX	-	XX	-	XX	-	XXX	-	XX	-	XX	-	XX	-	XX	-	XX	Pre-terminated fiber-optic assembly

OM3 – aqua OM4 – magenta or aqua SM – yellow

OM3 – aqua
or beige

OM4 – magenta
or beige

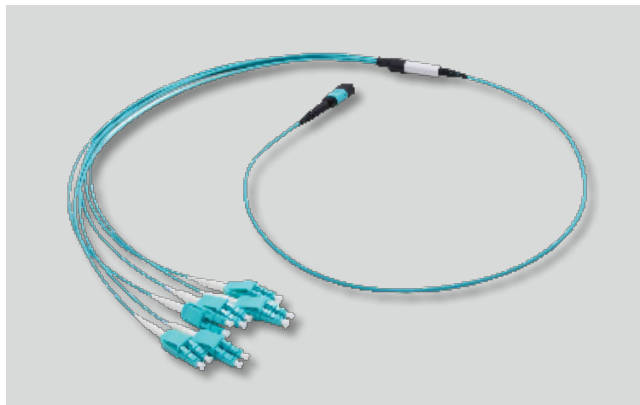
SM – green

OM3 – aqua
or beige

OM4 – magenta
or beige

SM – blue,
APC green

MTP fiber-optic assemblies – LC, SC (Fanout)



LC OM3- MTP assembly, 12-fiber



LC OM4- MTP assembly, 12-fiber

Specification

- MTP male connectors – LC, SC
- 12, 24 and more fibers
- OM3, OM4, OS2
- MTP Insertion loss
 “standard” < 0.5 dB,
 “premium” < 0.35 dB,
 “super” < 0.1 dB (MTP)
- A, B, C polarity
- Cable sheathing LSZH
- Cable diameter
 12 fibers 3.0 mm
 24 fibers 3.6 mm
 48 fibers 8.0 mm
 72, 96, 108 fibers 8.5 mm
 144 fibers 9.0 mm
- Diameter of carry-over cable 900μ – 2.0 mm
- MTP-connector in accordance with Telcordia GR-1435-CORE, IEC 61754-7 and TIA 604-5 MPO type
- Length – 1, 1.5, 2, 3, 5, 10 m and more according to specification
- Factory-made and 100% tested
- Matching color code of cable sheathing and connectors
- Field of application:
 Data Centers
 storage area networks
- Individual package

Order example

	Product code	Description
1	43H-S2-12-M1-LC-003-0E-MA-20	Eurolan fiber-optic assembly 1 × MTP(12) – 12 × LC, 12 fibers OS2, 3 m, carry-over 0.5 m, 2.0 mm, male, A polarity
2	43H-30-12-M1-LC-002-01-MA-20	Eurolan fiber-optic assembly 1 × MTP(12) – 12 × LC, 12 fiber OM3, 2,0m, carry-over 1.0 m, 2.0 mm, male, A polarity
3	43H-40-12-M1-LC-01E-0E-MA-20	Eurolan fiber-optic assembly 1 × MTP(12) – 12 × LC, 12 fibers OM4, 1,5m, carry-over 0.5 m, 2.0 mm, male, A polarity
4	43H-S2-24-M2-LC-00E-0E-MA-19	Eurolan fiber-optic assembly 1 × MTP(24) – 24 × LC, 24 fibers OS2, 0.5m, carry-over 0.5 m, 900 micrometers, male, A polarity
5	43H-40-96-M1-LC-050-01-MA-20	Eurolan fiber-optic assembly 8 × MTP(12) – 96 × LC, 96 fibers OM4, 50m, carry-over 1.0 m, 2.0 mm, male, A polarity

Fiber-optic patch cords

MTP cable assembly code

41	X	-	XX	-	XX	-	XX	-	XX	-	XX	Patch cord
41	X											Cord type
												Simplex
												E
												Duplex
												F
			XX									Fiber type
												Multimode OM3 50/125
												30
												Multimode OM4 50/125
												40
												Single mode OS2 9/125
												S2
				XX								Connector (plug) type from left side
												LC
												LC
												SC
												SC
					XX							Connector (plug) type from right side
												LC
												LC
												SC
												SC
						XX						Length in meters
												1.0 m
												01
												1.5 m
												1E
												2.0 m
												02
												3.0 m
												03
												5.0 m
												05
												7.0 m
												07
												10.0 m
												10
							X					Class
												"standard"
												D (-)
												"premium"
												P
							X					End finish
												For MM on default PC
												-
												For SM on default UPC
												-
												APC
												A
41	X	-	XX	-	XX	-	XX	-	XX	-	XX	Patch cord

Cable assembly



OM3 – aqua


OM4 – magenta
or aqua


SM – yellow

LC-connectors


OM3 – aqua
or beige

OM4 – magenta
or beige

SM – blue,
APC green

Fiber-optic patch cords



41F-30-LC-LC-02

Specification

- LC, SC connectors
- OM3, OM4, OS2
- Insertion loss
"standard" < 0.35 dB,
"premium" < 0.1 dB,
- Cable sheathing LSZH
- Cable diameter
LC 2.0mm
SC 2.0 or 3.0 mm
- Length – 1, 1.5, 2, 3, 5, 10m and more according to specification
- Factory-made and 100% tested
- Matching color code of cable sheathing and connectors
- Field of application:
Data Centers
storage area networks
SCS

Order example

Product code		Description
1	41F-30-LC-LC-02	Eurolan fiber-optic duplex patch cord OM3 LC-LC, 2.0 m
2	41F-40-LC-LC-03-P	Eurolan fiber-optic duplex patch cord OM4 LC-LC, 3.0 m, "premium" class
3	41F-S2-LC-LC-05-PA	Eurolan fiber-optic duplex patch cord OS2 LC-LC, 5.0 m, "premium" class, APC

Fiber-optic panels

MTP optic panels 19" 1U



47M-20-00-01BL with cassettes

Specification

- Height 1U
- Fastening to standard 19" racks
- Pull-out
- Case material – steel
- Depth 255 mm
- Installation up to 4 MTP cassettes (1 series) and/or adaptor panels
- Cassette types
 - 1 × MTP 12 × LC
 - 2 × MTP 12 × LC
 - 1 × MTP 24 × LC
 - 1 × MTP 12 × SC
 - 6 × MTP (adaptor panel)
- Capacity up to 96 LC optical ports
- Color – Black
- Package – Individual box

Product code		Description
1	47M-20-00-01BL	Eurolan optic panel MTP 19" 1U
2	38M-01-00BL	Eurolan optic panel plug MTP 19" 1U

MTP optic panels 19" 3U hinged



47M-06-03BL

Specification

- Height 3U
- Fastening to standard 19" racks
- Case material – aluminum
- Hinged with key
- Depth 250 mm
- Installation up to 12 MTP cassettes (2 series) and/or adaptor panels
- Cassette types
 - 1 × MTP 12 × LC
 - 2 × MTP 24 × LC
 - 1 × MTP 24 × LC
 - 1 × MTP 12 × SC
 - 6 × MTP (adaptor panels)
- Capacity up to 228 LC optical ports
- Plexiglass removable cover for patch cord protection
- Color – gray
- Package – Separate box

Product code		Description
1	47M-06-03SL	Eurolan optic panel MTP series 19" 3U
2	38M-06-00SL	Eurolan optic panel plug MTP series 19" 3U



MTP cassettes

MTP cassettes code

49	X	-	XX	-	XX	-	XX	-	XX	-	XX	-	XX	MTP cassettes	
49	X													Type	
														MTP	M
		XX												Fiber type	
														Multimode OM3 50/125	30
														Multimode OM4 50/125	40
														Single mode OS2 9/125	S2
			XX												Fiber count
														12, 24	
			XX												Connector (plug) type from face
														LC	LC
														SC	SC
														MTP 12	M1
														MTP 24	M2
				XX											Connector (plug) type from back
														MTP 12	M1
														MTP 24	M2
					XX										Type of MTP connector Male/Female and polarity
														Male A	MA
														Female A	FA
														B and C polarities are available on request	
						XX									Model
														Series 01	01
														Series 02	02
							XX								Color
														Black	BL
														Gray	SL
								X							Class
														“standard”	D (-)
														“premium”	P
														“super”	S
									X						End finish
														PC/UPC	-
														APC	A
49	X	-	XX	-	XX	-	XX	-	XX	-	XX	-	XX	MTP cassettes	

MTP-adaptors



OM3 – aqua
or black



OM4 – magenta
or black



SM – black
or green

LC-adaptors



OM3 – aqua
or beige



OM4 – magenta
or beige



SM – blue APC
green

MTP cassettes

MTP cassettes, 1 and 2 models



Cassette 1xMTP(24) – LC OM3, 24-fiber



Cassette 2xMTP(12) – LC OM4, 24-fiber



Cassette 2xMTP(12) – LC OM4, 24-fiber, back view

Specification

- Cassette types
 - 1 × MTP 12 × LC
 - 2 × MTP 24 × LC
 - 1 × MTP 24 × LC
 - 1 × MTP 12 × SC
- OM3, OM4, OS2
- Used as transition from MTP to standard connectors LC, SC
- Connected by fiber-optic assemblies MTP – MTP
- Insertion loss
 - “standard” < 0.5 dB,
 - “premium” < 0.35 dB,
 - “super” < 0.1 dB (MTP)
- A, B, C polarity
- Installed into MTP optic panels
 - 1U for 1 series
 - 3U for 2 series
- Factory-made and 100% tested
- Color – black or gray
- Individual package

Order example

	Product code	Description
1	49M-30-24-LC-M2-MA-01BL	Eurolan fiber-optic cassette 24 × LC to 1 × MTP(24) (male) OM3, A polarity, black, 1 series
2	49M-40-24-LC-M1-MA-01BL	Eurolan fiber-optic cassette 24 × LC to 2 × MTP(12) (male) OM4, A polarity, black, 1 series
3	49M-30-24-LC-M2-MA-02SL	Eurolan fiber-optic cassette 24 × LC to 1 × MTP(24) (male) OM3, A polarity, gray, 2 series

MTP cassettes

MTP cassettes, Y models



49M-30-24-M1-M2-MA-01BL

Specification

- Cassette types
1 × MTP -2xMTP
- OM3, OM4, OS2
- Used as transition from 12-fiber MTP to 24-fiber
- Installed into MTP optic panels 1U model 1
- Factory-made and 100% tested
- Color – black or gray
- Individual package

Order example

Product code		Description
1	49M-30-24-M1-M2-MA-01BL	Eurolan fiber-optic cassette 2 × MTP(12) to 1 × MTP(24) (male) OM3, A polarity, black, 1 series
2	49M-30-24-M1-M2-MA-02BL	Eurolan fiber-optic cassette 2 × MTP(12) to 1 × MTP(24) (male) OM3, A polarity, black, 2 series

Adaptor panels



38M-30-MT-01-06BL

Specification

- Installed into optic panels of MTP series
- 6 MTP adaptors, or 12, 24 LC
- OM3 (30), OM4 (40), OS2 (S2)
- Provide direct connection of MTP-MTP or LC-LC assemblies
- Color – black or gray

Product code		Description
1	38M-30-MT-01-06BL	Eurolan adaptor panel 6 × MTP, aqua, A polarity, black, 1 series
2	38M-30-MT-02-06SL	Eurolan adaptor panel 6 × MTP, aqua, A polarity, gray, 2 series
3	38M-30-LC-01-12BL	Eurolan adaptor panel 12 × LC, MM aqua, black, 1 series
4	38M-30-LC-01-24BL	Eurolan adaptor panel 24 × LC, MM aqua, black, 1 series
5	38M-40-LC-01-12BL	Eurolan адаптерная панель 12 × LC, MM magenta, black, series 1
6	38M-40-LC-01-24BL	Eurolan адаптерная панель 24 × LC, MM magenta, black, series 1

Tools

Cleaning tool for MTP connectors



10F-MT-20

Specification

- Cleans up to 600 connectors
- Cleans MTO and MPO connectors
- Cleans male and female connectors
- Cleans multimode and single-mode (8 degrees) MTP connectors
- Individual package

Product code		Description
1	10F-MT-20	Eurolan cleaning tool for MTP connectors, US Connec



Ties and tapes

Velcro tapes



70V-20-01BU

Specification

- Length 1600 and 5000 mm, can be cut to desired length
- Width 20.2 mm
- Scope: to organize the cables into bundles
- Velcro tape is reusable
- For applications requiring frequent moves, adds and changes
- Material provides long-life
- Recommended use – organizing optical fiber cables and Category 6 and above cables to avoid excessive tension
- Colors blue, white
- Packed in individual plastic bag

Product code		Description
1	70V-20-01BU	Euro lan tape Velcro 1600 × 20,2 mm, blue
2	70V-20-02BU	Euro lan tape Velcro 5000 × 20,2 mm, blue
3	70V-20-02WT	Euro lan tape Velcro 5000 × 20,2 mm, white



BU – blue



WT – белый

Ties and tapes

Velcro ties



70V-10-03BU

Specification

- Length 210 mm
- Width 16 mm
- Scope: to organize the cables into bundles
- Velcro ties are reusable
- For applications requiring frequent moves, adds and changes
- It is recommended to use for organizing optical fiber cables and Category 6 and above cables to avoid excessive tension
- Colors blue, white, red, green, yellow, black
- Packed in individual plastic bags of 10 pieces

Product code		Description
1	70V-10-03BU	Eurolan tie Velcro 210 × 16 mm, blue
2	70V-10-03WT	Eurolan tie Velcro 210 × 16 mm, white
3	70V-10-03RD	Eurolan tie Velcro 210 × 16 mm, red
4	70V-10-03GR	Eurolan tie Velcro 210 × 16 mm, green
5	70V-10-03YL	Eurolan tie Velcro 210 × 16 mm, yellow
6	70V-10-03BL	Eurolan tie Velcro 210 × 16 mm, black



BU – blue



WT – white



RD – red



GR – green



YL – yellow



BL – black

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