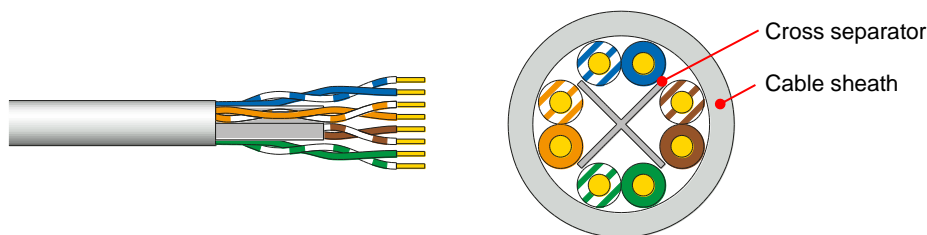


R&Mfreenet U/UTP Cat.6 450MHz 4PxAWG23 LSZH Eca NVP=69% ISO/IEC 11801 ANSI/TIA-568.2 <source code> <batch no.> <dd/mm/yy> <meter> m

Cable reference	Part number	R35057
	Source code	C
	R&M positioning	Cat.6, Level 3

Cable construction	Conductor	Bare solid copper wire AWG23 ($\geq \varnothing 0.55$ mm)
	Insulation	Polyethylene $\leq \varnothing 1.0$ mm
	Twisting	2 wires to the pair
	Cable lay up	4 pairs to the core with cross separator
	Pair screen	Non
	Overall screen	Non
	Sheath	LSZH, gray RAL 7035



Application	Primary (Campus), Secondary (Riser), Tertiary (Horizontal) IEEE 802.3an: 10Base-T; 100Base-TX; 1000Base-T IEEE 802.5 16 MB; ISDN; TPDDI; ATM IEEE 802.3af / IEEE 802.3at / IEEE 802.3bt Confirming to European regulation "CPR" EN 50575
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Standards	ISO/IEC 11801 2nd ed.; EN 50173-1; ANSI/TIA-568.2 IEC 61156-5 2nd ed.; IEC 61156-7; EN 50288-6-1 ; Power over Ethernet (PoE) / Type 1-4
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Fire rating	LSZH IEC 60332-1-2, IEC 60332-3-22; IEC 60754-2; IEC 61034 EN50575; Eca; DOP E6005
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Technical Data	Cable designation	U/UTP Cat.6 450MHz 4PxAWG23
	Packaging	Drum 500 m
	Outer diameter	Nominal 6.0 mm
	Weight	40 kg / km
	Thermal load	329 MJ / km
	Segregation class	B
	Tensile force	100 N

Mechanical Properties	Bending radius	≥ 25 mm during operation (without load)
		≥ 50 mm during installation (with load)
	Temperature range	During operation -20°C... + 60°C
	During installation 0°C... + 50°C	

Electrical Properties (at 20°C ± 5°C)





DC loop resistance		≤ 14.5 Ω / 100 m
Resistance unbalance		≤ 2 %
Test voltage	DC, 1 min, core/core	1000 V
Insulation resistance	500 V	≥ 5000 MΩ * km
Capacitance		44 pF / m max.
Capacitance unbalance		≤ 1500 pF / km
Mean characteristic impedance @ 100 MHz		100 ± 5 Ω
Nominal velocity of propagation		Approx. 69 %
Propagation delay	At 1 MHz	≤ 535 ns / 100 m
Delay skew		≤ 40 ns / 100 m
Coupling attenuation		≥ 40 dB
Balance TCL	At 1 MHz	≥ 55 dB
	At 10 MHz	≥ 40 dB
	At 100 MHz	≥ 30 dB

Typical transmission characteristics (at 20°C)

f (MHz)	Attenuation (dB/100m)		NEXT (dB)		PS-NEXT (dB)		ACR-F ¹⁾ (dB/100m)		PS-ACR-F ¹⁾ (dB/100m)		Return loss (dB)	
	Max	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ
4	3.8	3.8	66.3	69	63.3	66	58	70	55	68	23	23
10	6.0	6.0	60.3	63	57.3	60	50	62	47	56	25	25
20	8.5	8.5	55.8	59	52.8	56	44	56	41	54	25	25
62.5	15.5	15.1	48.4	51	45.4	48	34.1	46	31.1	44	21.5	21.5
100	19.9	19.1	45.3	48	42.3	45	30	42	27	40	20.1	20.1
250	33	32	39.3	42	36.3	39	22	34	19	32	17.3	17.3
450	-	36	-	37	-	34	-	29	-	26	-	20

¹⁾ ACR-F was formerly known as ELFEXT.

Recommended connection technique

Module	Perm. Link Class D	Perm. Link Class E	Channel Class E _A	Perm. Link Class E _A	Short Link Class E _A
	Cat.5e/u	✓	-	-	-
	Cat.6/u	✓	✓	-	-
	Cat.6/u	✓	✓	-	-
	Cat.6 _A /u	✓	✓	-	-