

Legrand cabling system LCS³ copper system

technical information

Performance table

	Supported network protocol	SIZES OF COMPONENTS				LINK SIZES (CHANNEL)			
		Cat. 8 STP	Cat. 6A STP	Cat. 6 UTP	Cat. 6 FTP	Class I	Class EA		Class E
		2000 MHz	500 MHz	250 MHz	250 MHz	2000 MHz	500 MHz	250 MHz	250 MHz
		40 Giga	10 Giga	1 Giga	1 Giga	40 Giga	10 Giga	1 Giga	1 Giga
Attenuation (dB) Signal loss	LCS ³ ISO 11801 edition 3	1.5	0.13 0.45 max	0.06 0.32 max	0.09 0.32 max	32.7	35.4 42.1 max	24.1 28.9 max	25.7 30.7 max
Return loss (dB) Resistance to echo	LCS ³ ISO 11801 edition 3	1.2	17.05 14 min	26.59 20 min	29.8 16 min	8	16.4 8 min	22.1 10 min	38.8 10 min
Next (dB) Resistance to disturbances between pairs	LCS ³ ISO 11801 edition 3	12.9	37.46 37 min	56.93 46 min	51.3 46 min	9.8	38.1 29.2 min	54 35.3 min	53.9 35.3 min



Compliance with LCS³ system standards and approvals

The LCS³ system and its components (de-embedded) comply with the current standards:

- EIA/TIA 568 B2.10
- EN 50173-1 and EN 50173-2
- ISO/IEC 11801 edition 3

The LCS³ system supports 10 G applications Base T up to 100 m in a transmission channel in compliance with ISO/IEC 11801 edition 3.0 (2017) and EIA/TIA 568 C2-1 standards

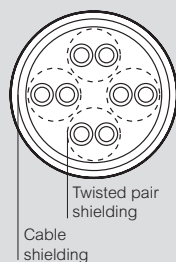
The class I link of the LCS³ system is also compliant with ISO/IEC 11801 edition 3.0 and EIA/TIA 568 C2-1 standards. LCS³ systems are certified by the independent lab 3P, a point of reference for the sector



New denominations of LAN cables (according to ISO 11801-2)

They indicate: "Type of cable shielding" / "type of twisted pair shielding" followed by TP (twisted pairs)

Cable type		Cable shielding	Twisted pair shielding
old denomination	new denomination		
SSTP	S/FTP	S: screen consisting of a copper braid	F: screen consisting of alu/polyester ribbon
SFTP	SF/UTP	SF: ribbon + braid association	U: no screen
STP	U/FTP	U: no screen	F: screen consisting of alu/polyester ribbon
FTP	F/FTP	F: screen consisting of alu/polyester ribbon	F: screen consisting of alu/polyester ribbon
FTP	F/UTP	F: screen consisting of alu/polyester ribbon	U: no screen
UTP	U/UTP	U: no screen	U: no screen



Main characteristics of LCS³ systems

	LCS ³ 8	LCS ³ 6A	LCS ³ 6	LCS ³ 5e		
Frequency	2000 MHz	500 MHz	250 MHz	100 MHz		
Delivery	40 Gbit/s	10 Gbit/s	1 Gbit/s	1 Gbit/s		
Wiring	Copper	Copper	FO	Copper	FO	Copper
Connectors	RJ 45	RJ 45	SC-LC...	RJ 45	SC-LC...	RJ 45
Max. cable length	30 m	100 m	variable	100 m	variable	100 m

Maintenance performance



Legrand guarantees the long-term performance of the LCS³ system by providing a 25-year performance guarantee



25-year guarantee: Legrand guarantees the long term performance of the LCS³ system
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All dimensions (mm) are nominal

Legrand cabling system LCS³ copper system (continued)

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Euroclass classification

Cat. Nos.	Description	Euroclass (A _{ca} ; B1 _{ca} ; B2 _{ca} ; C _{ca} ; D _{ca} ; E _{ca} ; F _{ca})	Additional criteria (smoke production, flaming droplets, acidity)		
			s1, s1a, s1b, s2, s3	d0, d1, d2	a1, a2, a3
0327 50	CABLE Cat. 5e U/UTP 4P LSZH	D _{ca}	s2	d2	a1
0327 51	CABLE Cat. 5e U/UTP 4P PVC	E _{ca}	-	-	-
0327 52	CABLE Cat. 5e F/UTP 4P LSZH	D _{ca}	s2	d2	a1
0327 53	CABLE Cat. 5e F/UTP 4P PVC	E _{ca}	-	-	-
0327 54	CABLE Cat. 6 U/UTP 4P LSZH	D _{ca}	s2	d2	a1
0327 55	CABLE Cat. 6 U/UTP 4P PVC	E _{ca}	-	-	-
0327 56	CABLE Cat. 6 F/UTP 4P LSZH	D _{ca}	s2	d2	a1
0327 58	CABLE Cat. 6 F/UTP 4P PVC	E _{ca}	-	-	-
0327 59	CABLE Cat. 6 SF/UTP 4P PVC	E _{ca}	-	-	-
0327 76	CABLE Cat. 6 F/UTP 2x4P LSZH	D _{ca}	s2	d2	a1
0327 77	CABLE Cat. 7 S/FTP 4P LSZH	D _{ca}	s2	d1	a1
0327 78	CABLE Cat. 6A F/UTP 4P LSZH	D _{ca}	s2	d2	a1
0327 98	CABLE Cat. 6A F/FTP 2X4P LSZH	D _{ca}	s2	d2	a1
0327 99	CABLE Cat. 6A F/FTP 4P LSZH	D _{ca}	s2	d2	a1
0328 50	CABLE Cat. 5e F/UTP 4P LSZH	D _{ca}	s2	d2	a1
0328 53	CABLE Cat. 5e U/UTP 4P LSZH	D _{ca}	s2	d2	a1
0328 56	CABLE Cat. 6 F/UTP 4P LSZH	D _{ca}	s2	d2	a1
0328 61	CABLE Cat. 6 U/UTP 4P LSZH	D _{ca}	s2	d2	a1
0328 78	CABLE Cat. 6A F/UTP 2X4P LSZH	D _{ca}	s2	d2	a2
0337 88	CABLE Cat. 8 S/FTP 4P LSZH	D _{ca}	s2	d2	a1
0328 57	CABLE Cat. 6 F/UTP 4P PVC	E _{ca}	-	-	-
0328 82	CABLE Cat. 7 S/FTP 4P LSZH	B2 _{ca}	s1	d1	a1
0328 83	CABLE Cat. 6A F/FTP 4P LSZH	C _{ca}	s1	d1	a1
0327 79	CABLE Cat. 7 S/FTP 2X4P LSZH	D _{ca}	s2	d1	a1
0328 84	CABLE Cat. 6A U/FTP 4P LSZH	C _{ca}	s1	d1	a1
0328 85	CABLE Cat. 6A U/FTP 2X4P LSZH	C _{ca}	s1	d1	a1

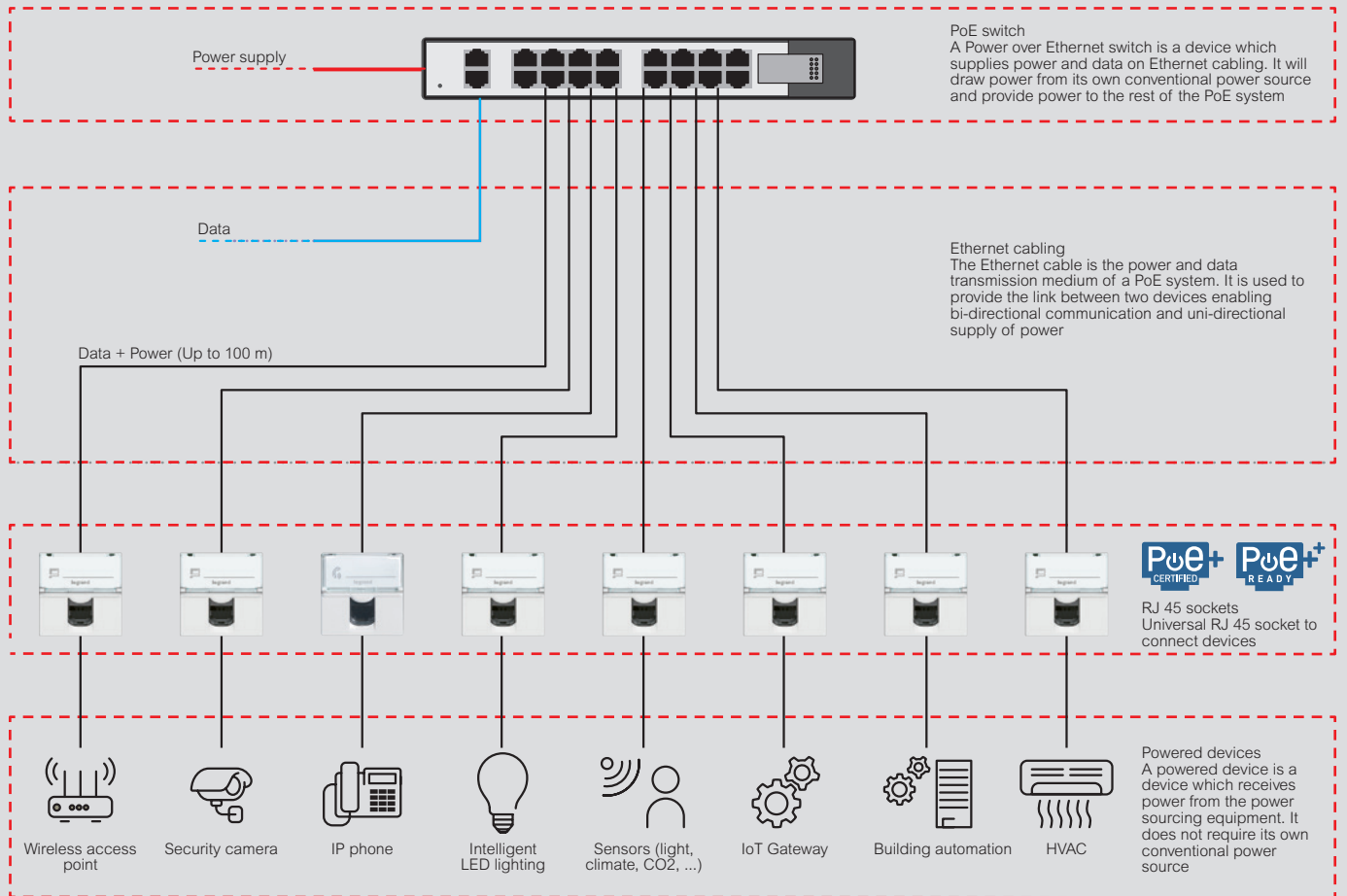
	Euroclass	Classification criteria	Additional criteria	AV CP system (Assessment and Verification of Consistency of Performance)
Non combustible (e.g. mineral insulated)	A _{ca}	EN ISO 1716 Gross heat of combustion	-	
Low-Fire-Hazard cables (various levels)	B1 _{ca}	EN 50399 Heat release Flame spread	Smoke production (s1a, s1b, s2, s3) EN 50399 / EN 61034-2 Acidity (a1, a2, a3) EN 50267-2-3 Flaming droplets (d0, d1, d2) EN 50399	'1+' including: - initial type-testing and continuous surveillance - audit and testing of samples by 3rd party certification body Factory production control by manufacturer
	B2 _{ca}			
	C _{ca}			
	D _{ca}	EN 60332-1-2 Flame propagation		'3' including: - initial type-testing by 3rd party laboratory Factory production control by manufacturer
Standard cables	E _{ca}	EN 60332-1-2 Flame propagation	-	
No performance determined	F _{ca}	EN 60332-1-2 Flame propagation	-	'4': initial type-testing and factory production control by manufacturer

Legrand cabling system LCS³ copper system (continued)

technical information

PoE architecture

Building systems are moving to a single IP Network



Cabling

Cabling must support enough power throughput and efficiency in addition to the heat dissipation capabilities

Cat. 6A cabling:

To improve thermal performance and energy efficiency while minimising the cost of moves, additions, changes and upgrades

We recommend running Cat. 6A cabling to each powered device, preferably using a zone cabling architecture



Connectivity

Connectivity must be robust, durable and provide power headroom for current carrying capacity

Arcing is inevitable with PoE systems, but Legrand's connectivity locates the last point of contact away from the mated connection, protecting the critical area from spark gap erosion. 50 microinch gold plating of the full mated surfaces and maximum contact area in the full mated position extend the life and performance of the connection

In addition, the connector should have a minimum current carrying capacity of paired traces for structured cabling of 1 amp

Legrand's connectivity provides up to an additional amp of headroom for superior performance



Reliability testing

If connectors are unplugged under load, an inductive current is created within the connector that may spark at one or more contact surfaces, causing the surfaces to corrode

It is recommended that connecting hardware be qualified to support PoE and four-pair PoE applications by using the test schedules in IEC 60512-99-001 (PoE and PoE+) and IEC 60512-99-002 (PoE++)



All dimensions (mm) are nominal