

# Category 6 S/FTP Cables

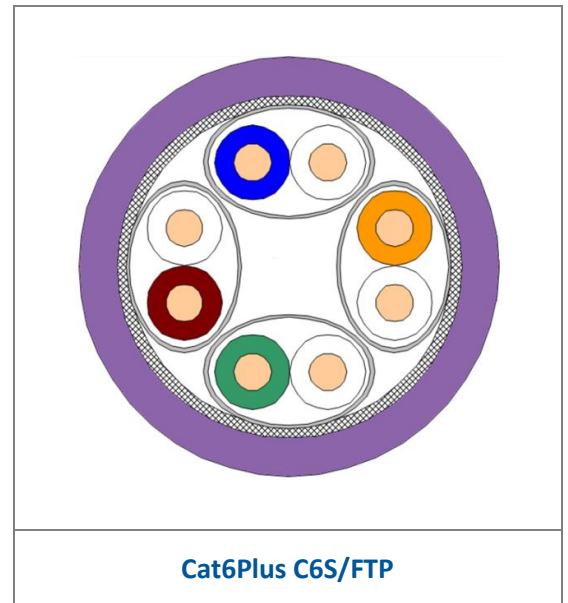
Datasheet: GD103083v1

## APPLICATION

The Brand-Rex Cat6Plus C6S/FTP cables exceed the Category 6 performance standards. They are rated to 250MHz and are suitable for use in all Class E structured wiring cable systems. The applications supported include Gigabit Ethernet, PoE and PoE+ and broadband video transmissions at frequencies up to 250MHz.

## FEATURES AND BENEFITS

- 23 AWG Solid Annealed Copper Wire
- Gas Injection Foamed Polyolefin Core Insulation – offering superior signal speed
- 4 Twisted Pairs Individually Screened and cabled together – providing EMI immunity
- Overall Braided Screen – for improved shielding efficiency, increased mechanical robustness and heat dissipation
- Available in a Range of Sheath Materials – to suit a variety of installation environments and colour coded for identification
- Designed to Support all Class E protocols including Gigabit Ethernet
- Supports Power Over Ethernet (PoE) and Power Over Ethernet Plus (PoE+) Applications
- HFFR-LS versions meet the requirements of the Construction Products Regulation (CPR) Euroclass Eca
- Included in the Leviton and Brand-Rex 25 Year System Warranties when used in conjunction with Leviton or Brand-Rex copper connectivity. System warranties available for qualified projects installed by certified contractors



## STANDARDS

Applicable Cable Standards: IEC 61156-5 and EN50288-5-1

## MATERIAL IDENTIFICATION

Material Identifier	HF1	HF3	HF1-X
Material Description	Standard HFFR-LS*	Enhanced HFFR-LS	Inner - HFFR-LS Outer - Polyethylene
Flammability Rating	IEC 60332-1-2	IEC 60332-3-24	n/a – External Only
Fire Euroclass EN13501-6	Eca	Eca	n/a – External Only
Smoke Emission	IEC 61034-1 & 2	IEC 61034-1 & 2	n/a – External Only
Acid Gas Emission	IEC 60754-2	IEC 60754-2	n/a – External Only
Colour	Violet	Blue	Inner - Violet Outer - Black

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\* Halogen Free, Flame Retardant, Low Smoke  
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## PRIMARY ELECTRICAL PARAMETERS

CHARACTERISTIC	SPECIFICATION	TYPICAL PERFORMANCE @ 20°C
Conductor Loop Resistance	Max 19 Ω / 100m	14Ω / 100m
Conductor Resistance Unbalance	Max 2%	0.1%
Insulation Resistance	>5GΩ.km	>50GΩ.km
Dielectric Strength	2500 Vdc/2secs	Pass

## SECONDARY ELECTRICAL PARAMETERS

CHARACTERISTIC	SPECIFICATION	TYPICAL PERFORMANCE @ 20°C
Velocity of Propagation	<534nsec/100m @ 100MHz	413nsec/100m @ 100MHz
Delay Skew	Max 25nsec/100m @ 100MHz	4nsec/100m @ 100MHz
Mean Characteristic Impedance	100Ω +/- 5Ω @ 100MHz	100Ω ± 3Ω @ 100MHz
Coupling Attenuation	Type 1	90dB
Transfer Impedance	Grade 1	8mΩ/m @ 10MHz

## ELECTRICAL PERFORMANCE

Frequency (MHz)		1	4	10	20	100	200	250	500	550
Insertion Loss (dB/100m)	Standard	2.1	3.8	6.0	8.5	19.9	29.1	33.0	na	na
	<b>Typical</b>	<b>1.9</b>	<b>3.5</b>	<b>5.5</b>	<b>7.8</b>	<b>18.0</b>	<b>26.1</b>	<b>29.4</b>	<b>43.0</b>	<b>45.4</b>
NEXT (dB)	Standard	66.0	65.3	59.3	54.8	44.3	39.8	38.3	na	na
	<b>Typical</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>94.3</b>	<b>88.9</b>	<b>87.1</b>	<b>81.7</b>	<b>81.0</b>
PSNEXT (dB)	Standard	64.0	63.3	57.3	52.8	42.3	37.8	36.3	na	na
	<b>Typical</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>91.3</b>	<b>85.9</b>	<b>84.1</b>	<b>78.7</b>	<b>78.0</b>
ELFEXT (dB/100m)	Standard	66.0	58.0	50.0	44.0	30.0	24.0	22.0	na	na
	<b>Typical</b>	<b>90.0</b>	<b>90.0</b>	<b>90.0</b>	<b>84.8</b>	<b>70.8</b>	<b>64.8</b>	<b>62.8</b>	<b>56.8</b>	<b>56.0</b>
PSELFEXT (dB/100m)	Standard	64.0	55.0	47.0	41.0	27.0	21.0	19.0	na	na
	<b>Typical</b>	<b>87.0</b>	<b>87.0</b>	<b>87.0</b>	<b>81.8</b>	<b>67.8</b>	<b>61.8</b>	<b>59.8</b>	<b>53.8</b>	<b>53.0</b>
Return loss (dB)	Standard	na	23.0	25.0	25.0	20.1	18.0	17.3	na	na
	<b>Typical</b>	<b>27.0</b>	<b>30.0</b>	<b>30.0</b>	<b>30.0</b>	<b>25.1</b>	<b>23.0</b>	<b>22.3</b>	<b>20.2</b>	<b>19.9</b>
ACR (dB/100m)	<b>Typical</b>	<b>98.1</b>	<b>96.5</b>	<b>94.5</b>	<b>92.2</b>	<b>76.3</b>	<b>62.8</b>	<b>57.7</b>	<b>38.7</b>	<b>35.6</b>
PSACR (dB/100m)	<b>Typical</b>	<b>95.1</b>	<b>93.5</b>	<b>91.5</b>	<b>89.2</b>	<b>73.3</b>	<b>59.8</b>	<b>54.7</b>	<b>35.7</b>	<b>32.6</b>

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company

## INSTALLATION

<b>Temperature (Installation)</b>	0°C to +50°C	<b>Min Bend Radius (Installation)</b>	8 x Outer Diameter
<b>Temperature (Operation)</b>	-20°C to +75°C	<b>Min Bend Radius (Operation)</b>	4 x Outer Diameter
<b>Max Tensile Load (Installation)</b>	10kg per simplex cable	<b>Field Test NVP Value</b>	0.80
<b>Segregation Class</b>	Class D		

## PRINT LEGEND

Example print legend:

[Length Mark]m BRAND-REX a LEVITON company C6S/FTP-HF1-Eca Cat 6 S/FTP IEC 60332-1-2 Euroclass Eca NVP 0.8  
MADE IN UK [ID number] [Week/Year]

## STANDARD PACKAGING SPECIFICATIONS

Brand-Rex Part Number	Nominal Cable Diameter (mm)	Nominal Cable Weight (kg/km)	Reel Size Flange x Width (mm)	Gross Weight (kg/Item)	Items Per Pallet
C6S/FTP-HF1-Eca-500VT <sup>†</sup>	7.0	48.4	400 x 390	26.7	12
C6S/FTP-HF1-Eca-1000VT <sup>‡</sup>	7.0	48.4	600 x 405	54.8	4
C6S/FTP-HF1-Eca-D500VT <sup>§</sup>	7.1 x 14.3	100.0	600 x 405	113.0	4
C6S/FTP-HF1-Eca-D1000VT	7.1 x 14.3	100.0	750 x 405	109.0	2
C6S/FTP-HF1-X-1000BK	8.2	61.9	750 x 405	70.8	2

<sup>†</sup> 500 = 500m length

<sup>‡</sup> 1000 = 1000m length

<sup>§</sup> 'D' denotes duplex cable

*"Brand-Rex is dedicated to designing, developing and manufacturing sustainable high performance structured cabling and speciality cabling solutions"*

The information contained in this document is valid and correct at the time of issue. Brand-Rex reserves the right to modify details without notice in light of subsequent standard/specification changes and ongoing technical developments.