

# Category 6<sub>A</sub> F/FTP Cables

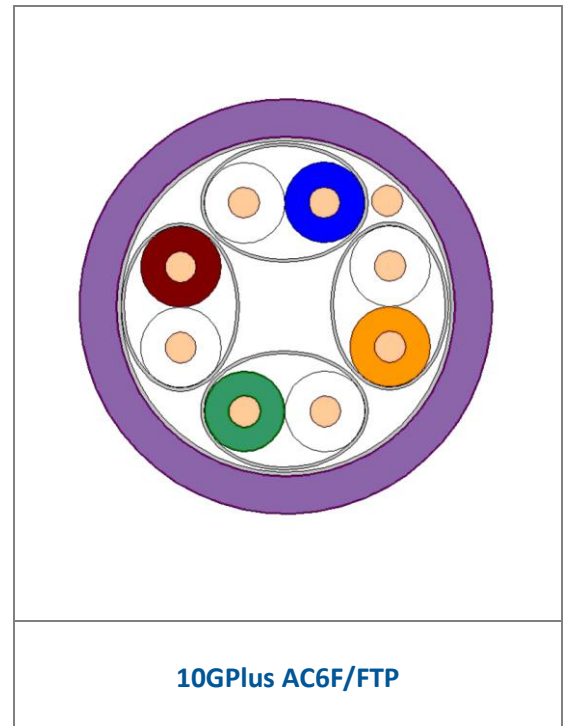
Datasheet: GD102423v3

## APPLICATION

The Brand-Rex 10GPlus cables exceed the Category 6<sub>A</sub> performance standards. They are rated to 500MHz and are suitable for use in all Class E<sub>A</sub> structured wiring cable systems. The applications supported include 10 Gigabit Ethernet, Gigabit Ethernet, PoE, PoE+ and broadband video transmissions at frequencies as high as 500MHz.

## 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 Aluminium Polyester Screen – for improved shielding efficiency and increased 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<sub>A</sub> protocols including 10GBASE-T
- 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 EN50288-10-1

## MATERIAL IDENTIFICATION

Material Identifier	HF1	HF3
Material Description	Standard HFFR-LS*	Enhanced HFFR-LS
Flammability Rating	IEC 60332-1-2	IEC 60332-3-24
Fire Euroclass EN13501-6	Eca	Eca
Smoke Emission	IEC 61034-1 & 2	IEC 61034-1 & 2
Acid Gas Emission	IEC 60754-2	IEC 60754-2
Colour	Violet	Blue

\* 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 45nsec/100m @ 100MHz	4nsec/100m @ 100MHz
Mean Characteristic Impedance	100Ω +/- 5Ω @ 100MHz	100Ω ± 3Ω @ 100MHz
Coupling Attenuation	Type 1b	84dB
Transfer Impedance	Grade 2	11mΩ/m @ 10MHz

## ELECTRICAL PERFORMANCE

Frequency (MHz)		1	4	10	20	100	200	250	500	550
Insertion Loss (dB/100m)	Standard	na	3.8	5.9	8.4	19.1	27.6	31.1	45.3	na
	<i>Typical</i>	<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	na	66.3	60.3	55.8	45.3	40.8	39.3	34.8	na
	<i>Typical</i>	<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	na	63.3	57.3	52.8	42.3	37.8	36.3	31.8	na
	<i>Typical</i>	<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	na	56.0	48.0	42.0	28.0	22.0	20.0	14.0	na
	<i>Typical</i>	<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	na	53.0	45.0	39.0	25.0	19.0	17.0	11.0	na
	<i>Typical</i>	<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	20.0	23.0	25.0	25.0	20.1	18.0	17.3	17.3	na
	<i>Typical</i>	<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>
PSANEXT (dB)	Standard	67.0	67.0	67.0	67.0	62.5	58.0	56.5	52.0	na
	<i>Typical</i>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
PSAACR-F (dB)	Standard	67.0	66.2	58.2	52.2	38.2	32.2	30.2	24.2	na
	<i>Typical</i>	<b>98.1</b>	<b>96.5</b>	<b>94.5</b>	<b>92.2</b>	<b>82.0</b>	<b>73.9</b>	<b>70.6</b>	<b>57.0</b>	<b>54.6</b>

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**Brand-Rex** | a **LEVITON**  
company

## INSTALLATION

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

## PRINT LEGEND

Example print legend:

[Length Mark]m BRAND-REX a LEVITON company AC6F/FTP-HF1-Eca Cat 6A F/FTP IEC 60332-1-2 Euroclass Eca NVP 0.80 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
AC6F/FTP-HF1-Eca-500VT <sup>†</sup>	7.1	49.7	400 x 390	27.4	12
AC6F/FTP-HF1-Eca-1000VT <sup>‡</sup>	7.1	49.7	600 x 405	56.2	4
AC6F/FTP-HF1-Eca-D500VT <sup>§</sup>	7.1 x 14.3	99.5	600 x 405	56.2	4
AC6F/FTP-HF1-Eca-D1000VT	7.1 x 14.3	99.5	750 x 405	108.8	2
AC6F/FTP-HF3-Eca-500BU	7.5	57.9	465 x 390	31.9	6
AC6F/FTP-HF3-Eca-1000BU	7.5	57.9	600 x 405	64.4	4

<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.