

# Category 6 U/FTP Cables

Datasheet: GD103084v5



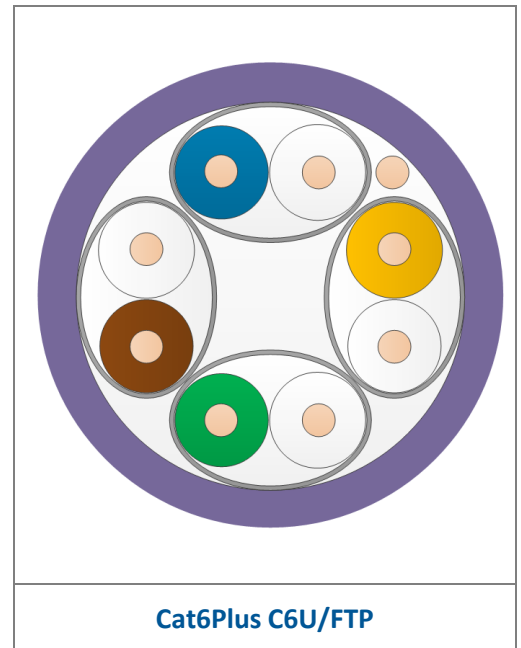
## APPLICATION

Leviton Category 6 U/FTP cables exceed the Category 6 performance standards. They are specified to 250MHz and are suitable for use in all Class E structured wiring cable systems. The applications supported include 10 Gigabit Ethernet, Gigabit Ethernet, Power over Ethernet 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
- 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
- HFFR-LS\* versions meet the requirements of the Construction Products Regulation (CPR) EuroClass Eca
- Included in the Leviton Limited 25-Year System Warranty when used in conjunction with Leviton copper connectivity. System warranties are available for qualified projects installed by certified contractors.

\*Halogen Free Flame Retardant – Low Smoke



## STANDARDS

- Designed and constructed to give optimum electrical performance to the following standards:
  - ISO/IEC 11801 Class E, IEC 61156-5
  - EN50173-1 and EN 50288-5-1
  - ANSI/TIA 568C.2
- Recommended for PoE standards: IEEE 802.3af, 802.3at, 802.3bt, Cisco UPoE, and Power over HDBase™ (PoH) up to 100 watts

## 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
Color	Violet	Blue	Inner - Violet Outer - Black

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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 1b	75dB
Transfer Impedance	Grade 2	28mΩ/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	N/A	N/A
	<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	66.0	65.3	59.3	54.8	44.3	39.8	38.3	N/A	N/A
	<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	64.0	63.3	57.3	52.8	42.3	37.8	36.3	N/A	N/A
	<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	66.0	58.0	50.0	44.0	30.0	24.0	22.0	N/A	N/A
	<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	64.0	55.0	47.0	41.0	27.0	21.0	19.0	N/A	N/A
	<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	N/A	23.0	25.0	25.0	20.1	18.0	17.3	N/A	N/A
	<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>
ACR (dB/100m)	<i>Typical</i>	<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)	<i>Typical</i>	<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>

## 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 C		

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## PRINT LEGEND

Example print legend:

[Length Mark]m BRAND-REX a LEVITON company C6U/FTP-HF1-Eca Cat 6 U/FTP IEC 60332-1-2 Euroclass Eca NVP 0.80  
MADE IN UK [ID number] [Week/Year]

## STANDARD PACKAGING SPECIFICATIONS - REELS

Part Number	Nominal Cable Diameter (mm)	Nominal Cable Weight (kg/km)	Packaging Dimensions (mm)	Gross Weight (kg/Item)	Items Per Pallet
C6U/FTP-HF1-Eca-500VT <sup>†</sup>	6.8	45.0	400 x 390	25	12
C6U/FTP-HF1-Eca-1000VT <sup>‡</sup>	6.8	45.0	600 x 405	51.5	4
C6U/FTP-HF1-Eca-D500VT <sup>  </sup>	6.8 x 13.7	90.0	600 x 405	51.5	4
C6U/FTP-HF1-Eca-D1000VT	6.8 x 13.7	90.0	750 x 405	99.0	2
C6U/FTP-HF3-Eca-500BU	7.2	52.9	400 x 390	28.9	12
C6U/FTP-HF3-Eca-1000BU	7.2	52.9	600 x 405	59.4	4

<sup>†</sup>500 = 500m length

<sup>‡</sup>1000 = 1000m length

<sup>||</sup>'D' denotes duplex cable

## STANDARD PACKAGING SPECIFICATIONS - BOXES

Part Number	Nominal Cable Diameter (mm)	Nominal Cable Weight (kg/km)	Box Size L x W x H (mm)	Gross Weight (kg/Item)	Items Per Pallet
C6U/FTP-HF1-Eca-Rlx-305VT <sup>§</sup>	6.8	45.0	475 x 295 x 475	14.7	12

<sup>§</sup>305 = 305m box

*"Leviton 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. Leviton reserves the right to modify details without notice in light of subsequent standard/specification changes and ongoing technical developments.