

# Category 6 F/UTP Cables

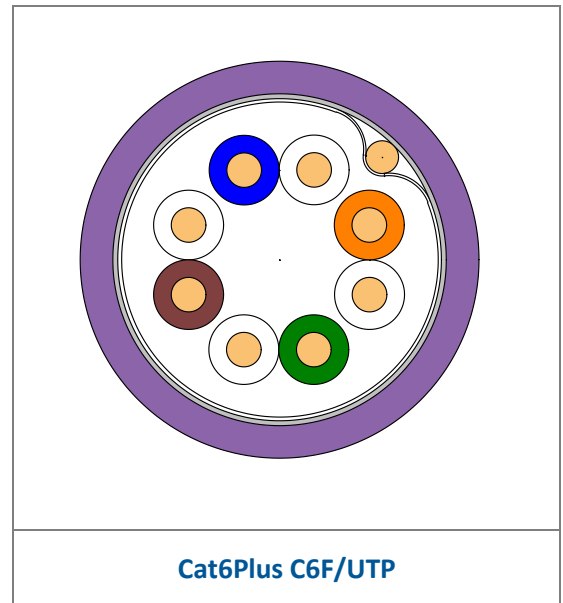
Datasheet: GD102470v4

## APPLICATION

The Brand-Rex Cat6Plus C6F/UTP 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 Gigabit Ethernet, PoE and PoE+ and broadband video transmissions at frequencies up to 250MHz.

## FEATURES AND BENEFITS

- 23 AWG Solid Annealed Copper Wire
- Polyolefin Core Insulation
- 4 Unshielded Twisted Pairs Cabled Together
- Aluminium Polyester screen
- 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
- 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
Material Description	Standard HFFR-LS*
Flammability Rating	IEC 60332-1-2
Smoke Emission	IEC 61034-1 & 2
Acid Gas Emission	IEC 60754-2
Colour	Violet

\* Halogen Free Flame Retardant – Low Smoke

## PRIMARY ELECTRICAL PARAMETERS

CHARACTERISTIC	SPECIFICATION	TYPICAL PERFORMANCE @ 20°C
Conductor Loop Resistance	Max 19Ω/100m	15Ω/100m
Conductor Resistance Unbalance	Max 2%	0.1%
Insulation Resistance	>5GΩ.km	>490GΩ.km
Dielectric Strength	2500 Vdc/2secs	Pass

## SECONDARY ELECTRICAL PARAMETERS

CHARACTERISTIC	SPECIFICATION	TYPICAL PERFORMANCE @ 20°C
Velocity of Propagation	<534nsec/100m @ 100MHz	502nsec/100m @ 100MHz
Delay Skew	Max 45nsec/100m @ 100MHz	23nsec/100m @ 100MHz
Mean Characteristic Impedance	100Ω +/- 5Ω @ 100MHz	100Ω ± 3Ω @ 100MHz
Coupling Attenuation	Type 1b	86dB
Transfer Impedance	Grade 2	80mΩ/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
	<i>Typical</i>	<i>1.9</i>	<i>3.5</i>	<i>5.5</i>	<i>7.8</i>	<i>18.0</i>	<i>26.1</i>	<i>29.4</i>	<i>43.0</i>	<i>45.4</i>
NEXT (dB)	Standard	66.0	65.3	59.3	54.8	44.3	39.8	38.3	na	na
	<i>Typical</i>	<i>80.0</i>	<i>71.0</i>	<i>65.0</i>	<i>60.5</i>	<i>50.0</i>	<i>45.5</i>	<i>44.0</i>	<i>39.5</i>	<i>38.9</i>
PSNEXT (dB)	Standard	64.0	63.3	57.3	52.8	42.3	37.8	36.3	na	na
	<i>Typical</i>	<i>80.0</i>	<i>71.0</i>	<i>65.0</i>	<i>60.5</i>	<i>50.0</i>	<i>45.5</i>	<i>44.0</i>	<i>39.5</i>	<i>38.9</i>
ELFEXT (dB/100m)	Standard	66.0	58.0	50.0	44.0	30.0	24.0	22.0	na	na
	<i>Typical</i>	<i>82.0</i>	<i>70.0</i>	<i>62.0</i>	<i>56.0</i>	<i>42.0</i>	<i>36.0</i>	<i>34.0</i>	<i>28.0</i>	<i>27.2</i>
PSELFEXT (dB/100m)	Standard	64.0	55.0	47.0	41.0	27.0	21.0	19.0	na	na
	<i>Typical</i>	<i>79.0</i>	<i>67.0</i>	<i>59.0</i>	<i>53.0</i>	<i>39.0</i>	<i>33.0</i>	<i>31.0</i>	<i>25.0</i>	<i>24.2</i>
Return loss (dB)	Standard	na	23.0	25.0	25.0	20.1	18.0	17.3	na	na
	<i>Typical</i>	<i>27.0</i>	<i>30.0</i>	<i>30.0</i>	<i>30.0</i>	<i>25.1</i>	<i>23.0</i>	<i>22.3</i>	<i>20.2</i>	<i>19.9</i>
ACR (dB/100m)	<i>Typical</i>	<i>78.1</i>	<i>67.4</i>	<i>59.5</i>	<i>52.6</i>	<i>32.0</i>	<i>19.4</i>	<i>14.6</i>	<i>-3.5</i>	<i>-6.5</i>
PSACR (dB/100m)	<i>Typical</i>	<i>78.1</i>	<i>67.4</i>	<i>59.5</i>	<i>52.6</i>	<i>32.0</i>	<i>19.4</i>	<i>14.6</i>	<i>-3.5</i>	<i>-6.5</i>

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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	0.68
Segregation Class	Class C		

## PRINT LEGEND

Example print legend:

[Length Mark]m BRAND-REX C6F/UTP-HF1 Cat6 IEC 60332-1-2 NVP 0.68 Made in the UK [ID number] [Week/Year]

## STANDARD PACKAGING SPECIFICATIONS - REELS

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
C6F/UTP-HF1-500VT <sup>†</sup>	7.1	51.5	400 x 390	28.2	12
C6F/UTP-HF1-1000VT <sup>‡</sup>	7.1	51.5	600 x 405	58.0	4
C6F/UTP-HF1-D500VT <sup>  </sup>	14.3 x 7.1	102.9	600 x 405	58.0	4
C6F/UTP-HF1-D1000VT	14.3 x 7.1	102.9	750 x 405	112.2	2

<sup>†</sup>500 = 500m length

<sup>‡</sup>1000 = 1000m length

<sup>§</sup>305 = 305m box

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

## STANDARD PACKAGING SPECIFICATIONS - BOXES

Brand-Rex 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
C6F/UTP-HF1-RIx-305VT <sup>§</sup>	7.1	51.5	405 x 265 x 405	16.7	12

<sup>§</sup>305 = 305m box

*"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.