

# Category 6 UTP Copper/Optical Hybrid Cable

Datasheet: GD068863v4

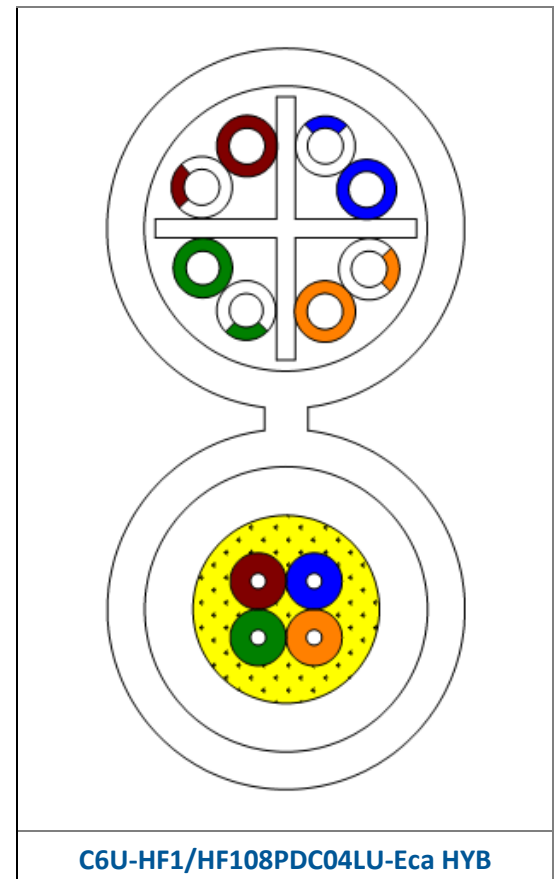
**Brand-Rex** a LEVITON company

## APPLICATION

Leviton's Brand-Rex Cat 6 U/UTP Copper/Optical Hybrid Cable has been designed primarily for the "Fibre to the Home" market. The copper partition consists of Leviton's Brand-Rex Cat 6 U/UTP cable which supports Gigabit Ethernet, PoE, voice and broadband video transmissions at frequencies up to 250MHz. The optical partition consists of Leviton's Brand-Rex Premises Distribution Cable (PDC) comprising of 4 tight buffered fibres in a compact cable construction.

## FEATURES AND BENEFITS

- Designed for Fibre to the Home Market
- Hybrid cable comprising of both Cat 6 U/UTP and Optical Premises Distribution Cable (PDC)
- Cat 6 U/UTP consists of:
  - 4 unshielded twisted pairs cabled together
  - 23 AWG solid annealed copper wire with polyolefin core insulation
  - Central cross filler – for increased internal crosstalk performance
  - Designed to support all Class E protocols including Gigabit Ethernet
  - Supports Power over Ethernet (PoE) and Power over Ethernet Plus (PoE+) applications
- Optical Premises Distribution Cable (PDC) consists of:
  - 4 x G.657.A1 HFFR-LS\* buffered fibres
  - High tensile yarns - flexible strength members
- 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.



\* Halogen Free Flame Retardant – Low Smoke

## STANDARDS

**Applicable Cable Standards:** ISO/IEC 11801, IEC 61156-5, EN 50173-1, EN 50288-6-1, IEC60794-2-20 and EIA/TIA 568C

## MATERIAL IDENTIFICATION

	<b>C6U</b>	<b>PDC</b>	
<b>Material Identifier</b>	HF1	LU	LUHF3
<b>Material Description</b>	Standard HFFR-LS*	Standard HFFR-LS	Enhanced HFFR-LS
<b>Flammability Rating</b>	IEC/EN 60332-1-2	IEC/EN 60332-1-2	IEC/EN 60332-3-24
<b>EuroClass Level EN13501-6</b>	Eca	Eca	Eca
<b>Standard Colour†</b>	White	White	White

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†Available in a range of non-standard colours

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## PRIMARY ELECTRICAL PARAMETERS – C6U

CHARACTERISTIC	SPECIFICATION	TYPICAL PERFORMANCE @ 20°C
Conductor Loop Resistance	Max 19 Ω / 100m	16 Ω / 100m
Conductor Resistance Unbalance	Max 2%	0.1%
Insulation Resistance	>5GΩ.km	>50GΩ.km
Dielectric Strength	2500 Vdc/2secs	Pass

## SECONDARY ELECTRICAL PARAMETERS – C6U

CHARACTERISTIC	SPECIFICATION	TYPICAL PERFORMANCE @ 20°C
Velocity of Propagation	<534nsec/100m @ 100MHz	490nsec/100m @ 100MHz
Delay Skew	Max 45nsec/100m @100MHz	30nsec/100m @ 100MHz
Mean Characteristic Impedance	100Ω +/- 5Ω @ 100MHz	100Ω ± 3Ω @ 100MHz
Transverse Conversion Loss (TCL)	≥50-10log(f)dB	61dB @ 10MHz

## ELECTRICAL PERFORMANCE – C6U

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>	<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
	<i>Typical</i>	<b>86.5</b>	<b>77.5</b>	<b>71.5</b>	<b>67.0</b>	<b>56.5</b>	<b>52.0</b>	<b>50.5</b>	<b>46.0</b>	<b>45.4</b>
PSNEXT (dB)	Standard	64.0	63.3	57.3	52.8	42.3	37.8	36.3	na	na
	<i>Typical</i>	<b>84.5</b>	<b>75.5</b>	<b>69.5</b>	<b>65.0</b>	<b>54.5</b>	<b>50.0</b>	<b>48.5</b>	<b>44.0</b>	<b>43.4</b>
ELFEXT (dB/100m)	Standard	66.0	58.0	50.0	44.0	30.0	24.0	22.0	na	na
	<i>Typical</i>	<b>85.0</b>	<b>73.0</b>	<b>65.0</b>	<b>59.0</b>	<b>45.0</b>	<b>39.0</b>	<b>37.0</b>	<b>31.0</b>	<b>30.2</b>
PSELFEXT (dB/100m)	Standard	64.0	55.0	47.0	41.0	27.0	21.0	19.0	na	na
	<i>Typical</i>	<b>82.0</b>	<b>70.0</b>	<b>62.0</b>	<b>56.0</b>	<b>42.0</b>	<b>36.0</b>	<b>34.0</b>	<b>28.0</b>	<b>27.2</b>
Return Loss (dB)	Standard	na	23.0	25.0	25.0	20.1	18.0	17.3	na	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>
ACR (dB/100m)	<i>Typical</i>	<b>84.6</b>	<b>73.9</b>	<b>66.0</b>	<b>59.1</b>	<b>38.5</b>	<b>25.9</b>	<b>21.1</b>	<b>3.0</b>	<b>0.0</b>
PSACR (dB/100m)	<i>Typical</i>	<b>82.6</b>	<b>71.9</b>	<b>64.0</b>	<b>57.1</b>	<b>36.5</b>	<b>23.9</b>	<b>19.1</b>	<b>1.0</b>	<b>-2.0</b>

## FIBRE IDENTIFICATION - PDC

Fibre Identifier	<b>108</b>
IEC 60793 Reference	2-50-B6_a
ITU-T Recommendation	G.657.A1
ISO/IEC 11801 Category	OS1/OS2

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

## INSTALLATION

Temperature (Installation)	0°C to +50°C	Min Bend Radius (Installation)	15 x Outer Diameter
Temperature (Operation)	-20°C to +60°C	Min Bend Radius (Operation)	10 x Outer Diameter
Max Tensile Load (Installation)	10kg per simplex cable	Field Test NVP Value	0.69
Segregation Class	Class B		

## PRINT LEGEND

Example print legend:

[Length Mark]m BRAND-REX a LEVITON company C6U/UTP-HF1 Cat 6 U/UTP HF108PDC04LU-Eca HYBRID IEC 60332-1-2  
EuroClass Eca NVP 0.69 MADE IN UK [ID number] [Week/Year]

## STANDARD PACKAGING SPECIFICATIONS - REELS

Brand-Rex Part Number	Colour	Nominal Cable Diameter (mm)	Nominal Cable Weight (kg/km)	Length (m)	Reel Weight (kg)	Reels Per Pallet
C6U-HF1/HF108PDC04LU-Eca HYB	White	11.5 x 5.75	79	500	44	6

*“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.