Category 6 UTP Cables

Datasheet: GD102051v6

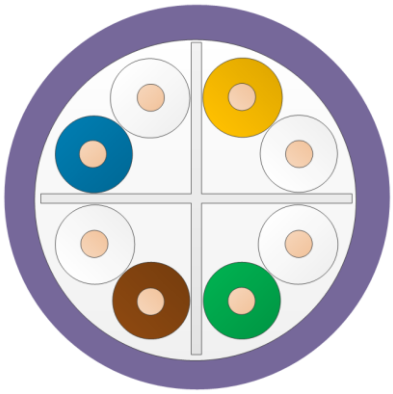
APPLICATION

The Brand-Rex C6U 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. C6U cable supports Gigabit Ethernet, Power over Ethernet, voice and broadband video transmissions at frequencies up to 250MHz.

FEATURES AND BENEFITS

- 23 AWG solid annealed copper wire
- 4 unshielded twisted pairs cabled together
- Central separator for increased internal crosstalk performance
- HFFR-LS* sheath enables cable to meet the requirements of the Construction Products Regulation (CPR) EuroClass E_{ca}
- 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*



C6U

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 50288-6-1
  - ANSI/TIA 568C.2
- Supports Gigabit Ethernet
- Meets the design requirements of 802.11ac wireless
- Recommended for PoE standards: IEEE 802.3af, 802.3at, Cisco UPoE, and Power over HDBaseT™ (PoH) up to 100 watts, as well as emerging 4 pair PoE standards such as the IEEE 802.3bt, including 90 watts at the powered device (PD)

MATERIAL PERFORMANCE

Material Identifier	HF1	HF1-X
Material Description	Standard HFFR-LS*	Inner - HFFR-LS Outer - Polyethylene
Flammability Rating	IEC/EN 60332-1-2	n/a – External Only
Reaction to Fire Classification / EuroClass	Eca	n/a – External Only

PRIMARY ELECTRICAL PARAMETERS

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

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

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
	Typical	*1.9*	*3.5*	*5.5*	*7.8*	*18.0*	*26.1*	*29.4*	*43.0*	*45.4*
NEXT (dB)	Standard	66.0	65.3	59.3	54.8	44.3	39.8	38.3	na	na
	Typical	*86.5*	*77.5*	*71.5*	*67.0*	*56.5*	*52.0*	*50.5*	*46.0*	*45.4*
PSNEXT (dB)	Standard	64.0	63.3	57.3	52.8	42.3	37.8	36.3	na	na
	Typical	*84.5*	*75.5*	*69.5*	*65.0*	*54.5*	*50.0*	*48.5*	*44.0*	*43.4*
ELFEXT (dB)	Standard	66.0	58.0	50.0	44.0	30.0	24.0	22.0	na	na
	Typical	*85.0*	*73.0*	*65.0*	*59.0*	*45.0*	*39.0*	*37.0*	*31.0*	*30.2*
PSELFEXT (dB)	Standard	64.0	55.0	47.0	41.0	27.0	21.0	19.0	na	na
	Typical	*82.0*	*70.0*	*62.0*	*56.0*	*42.0*	*36.0*	*34.0*	*28.0*	*27.2*
Return loss (dB)	Standard	na	23.0	25.0	25.0	20.1	18.0	17.3	na	na
	Typical	*27.0*	*30.0*	*30.0*	*30.0*	*25.1*	*23.0*	*22.3*	*20.2*	*19.9*
ACR (dB)	*Typical*	*84.6*	*73.9*	*66.0*	*59.1*	*38.5*	*25.9*	*21.1*	*3.0*	*0.0*
PSACR (dB)	*Typical*	*82.6*	*71.9*	*64.0*	*57.1*	*36.5*	*23.9*	*19.1*	*1.0*	*-2.0*

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**	0.69
Segregation Class	Class B		

PRINT LEGEND

Example print legend:

[Length Mark]m BRAND-REX a LEVITON company C6U-HF1-Eca Cat 6 U/UTP 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)*	Reel Size *Flange x Width (mm)*	Gross Weight *(kg/Item)*	Items Per Pallet
C6U-HF1-Eca-500VT†	Violet	5.8	37.5	400 x 310	20.8	18
C6U-HF1-Eca-1000VT‡	Violet	5.8	37.5	465 x 390	40.5	6
C6U-HF1-Eca-500WH†	White	5.8	37.5	400 x 310	20.8	18
C6U-HF1-Eca-D500VT‖	Violet	11.6 x 5.8	75.0	465 x 390	40.5	6
C6U-HF1-Eca-D1000VT	Violet	11.6 x 5.8	75.0	750 x 410	84.3	2
C6U-HF1-X-500BK	Black	7.0	48.7	400 x 390	26.8	12
C6U-HF1-X-1000BK	Black	7.0	48.7	600 x 405	55.2	4

†*500 = 500m length*
‡*1000 = 1000m length*
‖*'D' denotes duplex cable*

STANDARD PACKAGING SPECIFICATIONS - BOXES

Brand-Rex Part Number	Colour *	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-HF1-Eca-Rlx-305VT§	Violet	5.8	37.5	405 x 265 x 405	11.4	27 or 18 §§
C6U-HF1-Eca-Rlx-305GY§	Grey	5.8	37.5	405 x 265 x 405	11.4	27 or 18 §§
C6U-HF1-Eca-Rlx-305WH§	White	5.8	37.5	405 x 265 x 405	11.4	27 or 18 §§

§*305 = 305m box*
§§ - *Double or single stack pallets*
**Also available in a range of non-standard colours*

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