

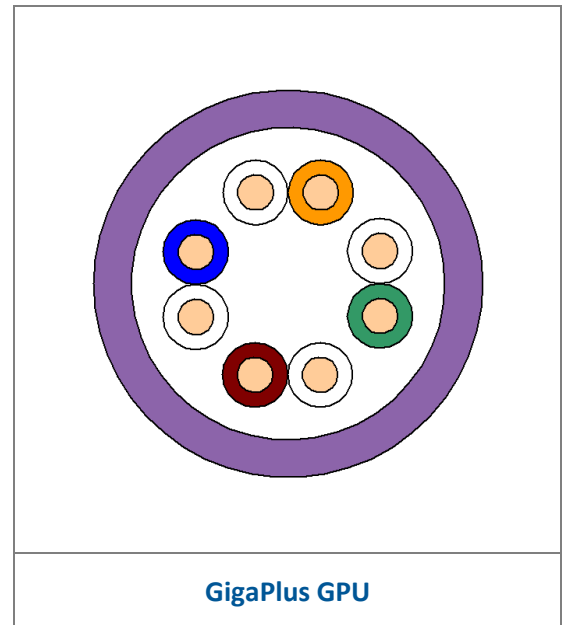
## APPLICATION

The Brand-Rex GigaPlus GPU cables exceed the Category 5e performance standards. They are rated to 100MHz and are suitable for use in all Class D structured wiring cable systems.

The GigaPlus GPU cable supports Gigabit Ethernet, PoE and voice transmissions at frequencies up to 100MHz.

## FEATURES AND BENEFITS

- 24 AWG Solid Annealed Copper Wire
- Polyolefin Core Insulation
- 4 Unshielded Twisted Pairs Cabled Together
- Available in a Range of Sheath Materials – to suit a variety of installation environments and colour coded for identification
- Designed to Support all Class D protocols including Gigabit Ethernet
- Supports Power Over Ethernet (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:** ISO/IEC 11801, IEC 61156-5, EN 50173-1, EN 50288-3-1 and EIA/TIA 568C

## MATERIAL IDENTIFICATION

| Material Identifier  | HF1               | HF3              | HF1-X                                   |
|----------------------|-------------------|------------------|---|
| Material Description | Standard HFFR-LS* | Enhanced HFFR-LS | Inner - HFFR-LS<br>Outer - Polyethylene |
| Flammability Rating  | IEC 60332-1-2     | IEC 60332-3-24   | 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                     |
| Colour               | Violet            | Blue             | Inner - Grey<br>Outer - Black           |

\* Halogen Free Flame Retardant – Low Smoke

# Category 5e UTP Cables

Datasheet: GD102446v2

**Brand-Rex** a LEVITON company

## PRIMARY ELECTRICAL PARAMETERS

| CHARACTERISTIC                 | SPECIFICATION   | TYPICAL PERFORMANCE @ 20°C |
|--------------------------------|-----------------|----------------------------|
| Conductor Loop Resistance      | Max 19 Ω / 100m | 18 Ω / 100m                |
| Conductor Resistance Unbalance | Max 2%          | 0.1%                       |
| Insulation Resistance          | >5GΩ.km         | >45GΩ.km                   |
| Dielectric Strength            | 2500 Vdc/2secs  | Pass                       |

## SECONDARY ELECTRICAL PARAMETERS

| CHARACTERISTIC                   | SPECIFICATION           | TYPICAL PERFORMANCE @ 20°C |
|----------------------------------|-------------------------|----------------------------|
| Propagation Delay                | <534nsec/100m @ 100MHz  | 487nsec/100m @ 100MHz      |
| Delay Skew                       | Max 45nsec/100m @100MHz | 38nsec/100m @100MHz        |
| Mean Characteristic Impedance    | 100Ω ± 5Ω @ 100MHz      | 100Ω ± 3Ω @ 100MHz         |
| Transverse Conversion Loss (TCL) | ≥50-10log(f)dB          | 65dB @ 10MHz               |

## ELECTRICAL PERFORMANCE

| Frequency (MHz)          |                | 1           | 4           | 10          | 16          | 20          | 31.25       | 100         | 200         | 250         |
|--------------------------|----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Insertion Loss (dB/100m) | Standard       | 2.0         | 4.1         | 6.5         | 8.2         | 9.3         | 11.7        | 22.0        | n/a         | n/a         |
|                          | <i>Typical</i> | <b>1.9</b>  | <b>3.8</b>  | <b>6.0</b>  | <b>7.7</b>  | <b>8.6</b>  | <b>10.9</b> | <b>20.6</b> | <b>30.4</b> | <b>34.6</b> |
| NEXT (dB)                | Standard       | 65.3        | 56.3        | 50.3        | 47.2        | 45.8        | 42.9        | 35.3        | n/a         | 38.3        |
|                          | <i>Typical</i> | <b>76.8</b> | <b>67.8</b> | <b>61.8</b> | <b>58.7</b> | <b>57.3</b> | <b>54.4</b> | <b>46.8</b> | <b>42.3</b> | <b>40.8</b> |
| PSNEXT (dB)              | Standard       | 62.3        | 53.3        | 47.3        | 44.2        | 42.8        | 39.9        | 32.3        | n/a         | n/a         |
|                          | <i>Typical</i> | <b>73.8</b> | <b>64.8</b> | <b>58.8</b> | <b>55.7</b> | <b>54.3</b> | <b>51.4</b> | <b>43.8</b> | <b>39.3</b> | <b>37.8</b> |
| ELFEXT (dB/100m)         | Standard       | 63.8        | 51.8        | 43.8        | 39.7        | 37.8        | 33.9        | 23.8        | n/a         | n/a         |
|                          | <i>Typical</i> | <b>81.4</b> | <b>69.4</b> | <b>61.4</b> | <b>57.3</b> | <b>55.4</b> | <b>51.5</b> | <b>41.4</b> | <b>35.4</b> | <b>33.4</b> |
| PSELFEXT (dB/100m)       | Standard       | 60.8        | 48.8        | 40.8        | 36.7        | 34.8        | 30.9        | 20.8        | n/a         | n/a         |
|                          | <i>Typical</i> | <b>78.4</b> | <b>66.4</b> | <b>58.4</b> | <b>54.3</b> | <b>52.4</b> | <b>48.5</b> | <b>38.4</b> | <b>32.4</b> | <b>30.4</b> |
| Return loss (dB)         | Standard       | 20.0        | 23.0        | 25.0        | 25.0        | 25.0        | 23.6        | 20.1        | n/a         | n/a         |
|                          | <i>Typical</i> | <b>24.8</b> | <b>27.8</b> | <b>29.8</b> | <b>29.8</b> | <b>29.8</b> | <b>28.4</b> | <b>24.9</b> | <b>22.8</b> | <b>22.1</b> |
| ACR (dB/100m)            | <i>Typical</i> | <b>74.9</b> | <b>64.0</b> | <b>55.8</b> | <b>51.1</b> | <b>48.7</b> | <b>43.4</b> | <b>26.2</b> | <b>11.9</b> | <b>6.2</b>  |
| PSACR (dB/100m)          | <i>Typical</i> | <b>71.9</b> | <b>61.0</b> | <b>52.8</b> | <b>48.1</b> | <b>45.7</b> | <b>40.4</b> | <b>23.2</b> | <b>8.9</b>  | <b>3.2</b>  |

# Category 5e UTP Cables

Datasheet: GD102446v2

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## 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 GPU-HF1 Cat5e IEC 60332-1-2 NVP 0.69 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 |
|-----------------------------|-----------------------------|------------------------------|-------------------------------|------------------------|------------------|
| GPU-HF1-500V <sup>†</sup>   | 4.85                        | 30.0                         | 400 x 400 x 210               | 16.1                   | 24               |
| GPU-HF1-1000V <sup>‡</sup>  | 4.85                        | 30.0                         | 400 x 400 x 390               | 31.7                   | 12               |
| GPU-HF1-D500V <sup>  </sup> | 5.05 x 10.0                 | 63.1                         | 400 x 400 x 390               | 34.0                   | 12               |
| GPU-HF1-D1000V              | 5.05 x 10.0                 | 63.1                         | 600 x 600 x 405               | 70.5                   | 4                |
| GPU-HF3-500BU               | 5.65                        | 42.7                         | 400 x 400 x 310               | 23.4                   | 18               |
| GPU-HF3-1000BU              | 5.65                        | 42.7                         | 465 x 465 x 390               | 45.7                   | 6                |
| GPU-HF1-X-500BK             | 6.1                         | 39.3                         | 400 x 400 x 310               | 21.6                   | 18               |
| GPU-HF1-X-1000BK            | 6.1                         | 39.3                         | 465 x 465 x 390               | 42.3                   | 6                |

<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 |
|-------------------------------|-----------------------------|------------------------------|-------------------------|------------------------|------------------|
| GPU-HF1-Rlx-305V <sup>§</sup> | 4.85                        | 30.0                         | 365 x 250 x 365         | 9.9                    | 27 or 18         |

<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.