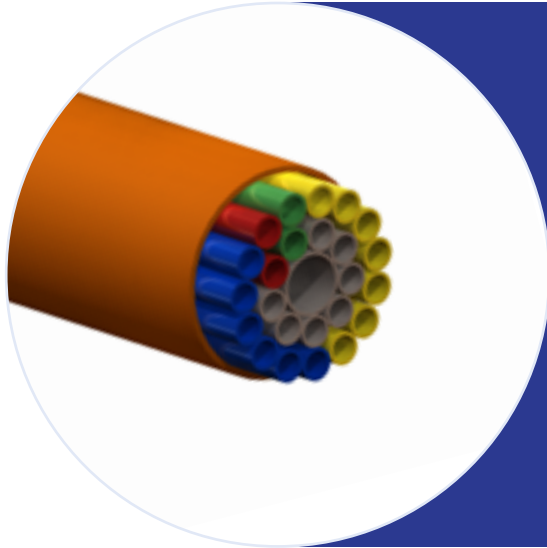


# GryphonX™ Micro Ducts & Bundle Ducts

## 5/3.5mm HDPE + HDPE Microducts



*GryphonX™ HDPE Air Blown micro ducts are designed for Urban outdoor network and long haul telecom project.*

*The high density PE material provide excellent mechanic protection performance to protect the air blown cable inside. The inner permanent silicone layer enables low friction performance to ensure the cable can be blown as far as possible with a very fast speed.*








### SPECIFICATION

#### MICRO DUCT : 5/3.5mm

|                  |                                  |                      |
|------------------|----------------------------------|----------------------|
| Diameter         | 5.0 ± 0.1 mm (Outer)             | 3.5 ± 0.1 mm (Inner) |
| Sheath Thickness | 0.75 ± 0.1 mm                    |                      |
| Sheath Material  | HDPE                             |                      |
| Sheath Colour    | Red, Green, Yellow, Blue & Beige |                      |

#### BUNDLED DUCT

|                          |              |
|--------------------------|--------------|
| Colour & No. of Stripes  | Optional     |
| Armoured                 | N/A          |
| Sheath Thickness         | 1.2 ± 0.3 mm |
| Material of Ducts Sheath | HDPE         |
| Colour of Duct Sheath    | Orange       |

| Number of Ducts       | 2 WAYS  | 4 WAYS  | 7 WAYS  | 12 WAYS   | 19 WAYS   | 24 WAYS   | 24+1 WAYS   |
|-----------------------|---|---|---|---|---|---|---|
| Part No.              | MTD-0535P02P  | MTD-0535P04P  | MTD-0535P07P  | MTD-0535P12P  | MTD-0535P19P  | MTD-0535P24P  | MTD-0535P24RP   |
| Cross Section         |  |  |  |  |  |  |  |
| Bundled Duct Dia (mm) | 12.0 * 7.0 ± 0.6  | 12.4 ± 0.6  | 17.0 * 15.6 ± 0.6   | 22.4 * 20.4 ± 0.6   | 27.0 * 24.3 ± 0.6   | 32.0 * 24.3 ± 0.6   | 31.5 * 30.3 ± 0.6   |
| Min Bend Dia. (mm)    | Outer Diameter * 10 times   |   |   |   |   |   |   |

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### PHYSICAL & MECHANICAL PROPERTIES

| Characteristic                        | Test Method   | Acceptance Criteria   |
|---------------------------------------|---|---|
| <b>MICRO DUCT</b>                     |   |   |
| Outer Diameter                        | ASTM D2122  | 5.0 ± 0.1 mm  |
| Inner Diameter                        | ASTM D 2122   | 3.5 ± 0.1 mm  |
| Wall Thickness                        | ASTM D 2122   | 0.75 ± 0.1 mm   |
| Ovality                               | ASTM D 2122   | ≤ 5%  |
| Standard Dimension ratio              | SDR= Outer dia./Wall thickness  | 6.6   |
| Pressurization                        | 5 min @ 15 bar each micro duct  | No damage, no leaks   |
| Crush                                 | IEC 60794-1-2 Method E3, 1000 N load, 60 sec, 1 hour recovery time.             | No residual deformation > 15% of inner and outer diameter.                      |
| Tensile Strength                      | IEC 60794-1-2 Method E1<br>ASTM F 2160,<br>ASTM D 638 (Type IV), speed 50mm/min | 20 – 30 N/mm <sup>2</sup>   |
| Bend                                  | IEC 60794-1-2 METHOD E11A   | No residual deformation > 15% of inner and outer diameter.                      |
| Elongation at Break                   | IEC 60794-1-2 Method E1<br>ASTM F 2160<br>ASTM D 638 (Type IV), speed 50mm/min  | Min 400%  |
| Kink                                  | IEC 60794-1-2 Method E8   | Duct bent between 2 parallel supports 20*OD apart                               |
| Environmental Stress Crack Resistance | ASTM D 1693   | No crack shall observed at 50 ± 2°C for 96 hours, when used 10% Igepal solution |
| Impact                                | IEC 60794-1-2 Method E4, 5 J Impact, 10 mm anvil, recovery time 1 hour.         | No residual deformation > 15% of inner and outer diameter.                      |
| Repeated Bending                      | IEC 60794-1-2 Method E6 10*OD   | No residual deformation > 15% of inner and outer diameter.                      |
| Co-efficient of Friction              | Bell core, 750 mm Diameter, 450° loop, 5 kg tail mass                           | μ < 0.06  |
| Heat Reversion                        | ISO 2505  | 110°C for 1 hrs (< 3%)  |
| Colour                                | Visual inspection   | See specification   |
| Printing                              | Visual inspection   | HERMESYS GRYPHONX MICRODUCT 5/3.5MM COIL NO. XXXXm MMY                          |

# GryphonX™ Micro Ducts & Bundle Ducts

## 5/3.5mm HDPE + HDPE Microducts

| BUNDLED DUCT                  |   |  |
|-------------------------------|---|--|
| Wall thickness<br>(Sheathing) | ASTM D 2122   | 1.2 ± 0.3 mm   |
| Colour of Stripes             | Visual inspection   | See specification  |
| Pressurization                | 5 min @ 15 bar each micro duct  | No damage, No leaks  |
| Kink                          | IEC 60794-1-21 METHOD E10, 10*OD  | No residual deformation > 15% of inner and outer diameter.                   |
| Crush                         | IEC 60794-1-2 Method E3, 1500 N load, 60 sec, 1 hour recovery time.             | No residual deformation > 15% of inner and outer diameter.                   |
| Impact                        | IEC 60794-1-2 Method E4, 5 J Impact, 10 mm anvil, recovery time 1 hour.         | No residual deformation > 15% of inner and outer diameter.                   |
| Colour & Sequence             | Visual inspection.  | See specification  |
| Tensile Strength at Yield     | IEC 60794-1-2 Method E1<br>ASTM F 2160,<br>ASTM D 638 (Type IV), speed 50mm/min | 20 – 30 N/mm <sup>2</sup>  |
| Elongation at Break           | IEC 60794-1-2 Method E1<br>ASTM F 2160,<br>ASTM D 638 (Type IV), speed 50mm/mi  | Min 400%   |
| Bend Test                     | IEC 60794-1-2 Method E11A, 10*OD  | No residual deformation > 15% of inner and outer diameter.                   |
| Printing                      | Visual inspection   | HERMESYS GRYPHONX HDPE/HDPE MTD-XXXXXXXX MD <no. of way> * 5/3.5mm XXXXm MMY |