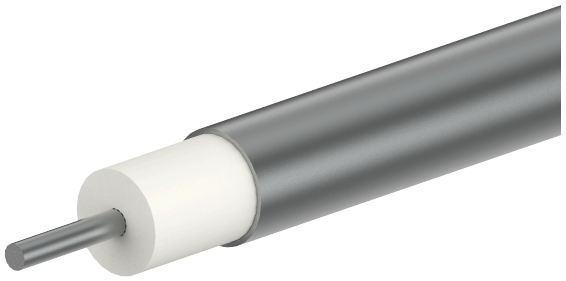
DATA SHEET

Semi-rigid Cryogenic Cable, 50 Ohm, up to 40 GHz, Ø0.86 mm, Niobium Titanium

SR_34_NBTI_02

Properties

- Low loss at cryogenic temperatures for stable RF performance down to 4K.
- Ultra-low thermal conductivity (4.6 × 10^-6 W/cm·K) minimizes heat transfer.
- High-frequency capability up to 40 GHz in a slim Ø0.86 mm cable design.



Construction			
Component	**Material**	**Detail**	**Diameter**
Centre conductor	Niobium Titanium	Wire	0.2 mm +/- 0.01 mm
Dielectric	PTFE (Polytetrafluoroethylene)	95%	0.66 mm +/- 0.026 mm
Outer conductor	Niobium Titanium	Tube, 100%	0.86 mm +/- 0.05 mm

Electrical data	
Impedance	50 Ω
Operating frequency	≤ 40 GHz
Capacitance	76.7 pF
Velocity of signal propagation	77 %
Signal delay	4.48 ns/m @ 10 GHz
Screening effectiveness	> 100 dB at frequency 5 GHz ... 20GHz
Inner conductor resistance	21.9 Ω/m @ 300 K
Outer conductor resistance	2.8 Ω/m @ 300 K
Insertion Loss at 300 K (26.85 °C)	9.33 dB/m / 1 GHz
	29.7 dB/m / 10 GHz
	42.56 dB/m / 20 GHz
	61.73 dB/m / 40 GHz
Insertion Loss at 10 GHz	29.94 dB/m @ 300.00 °K (26.85 °C)
	0.5 dB/m @ 4.00 °K (-269.15 °C)

Mechanical data	
Weight	approx. 2 g/m
Static bending radius	≥ 8 mm

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Environmental data	
Thermal conductivity at 4K	4.6 * 10-6 W·cm/K
Heat quantity at 4k - 20K	0.06 µW/K
Heat quantity at 4k - 100K	0.2 µW/K

Material compliance			
Item number	Directive / Regulation	Rating	Exemptions / Details
85268609	RoHS 2011/65/EU and (EU) 2015/863	Compliant without exemption	
	REACH 1907/2006 Article 33 SVHC	Free of SVHC >0,1%	

Ordering information	
Item number	Item description
85268609	SR_34_NBTI_02_1M

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