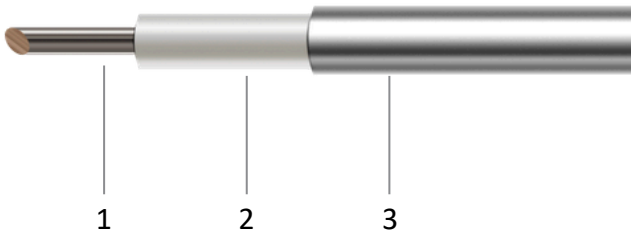
Copper Nickel Cryogenic Coaxial Cable

G06E-CN

0.58 mm OD CuNi cryogenic RF coaxial cable for compact routing up to 18 GHz.

Product definition: G06E-CN is a CuNi cryogenic RF coaxial cable for compact routing where RF attenuation and thermal conduction must be evaluated together.



OUTER DIAMETER	OPERATING FREQUENCY	CABLE-LEVEL CUTOFF	MATERIAL FAMILY
0.58 mm	**18 GHz**	**240 GHz**	**CuNi**

CORE FEATURES

- 0.58 mm OD ultra-compact construction for dense cryogenic layouts
- Silver-plated CuNi inner conductor, PTFE dielectric, CuNi tube outer conductor
- >165 dB shielding effectiveness and 70% velocity of propagation
- -268°C to 150°C temperature range for cryogenic RF routing

TARGET APPLICATIONS

- General cryogenic RF routing in quantum systems
- Dilution refrigerator coaxial interconnects
- Low-temperature microwave measurement and test setups
- Compact RF paths where diameter and heat load are constrained

CONSTRUCTION SPECIFICATION

NO.	COMPONENT	MATERIAL & PROCESS	DIAMETER MM [IN]
1	Inner Conductor	Silver-plated CuNi wire	**0.127 [0.005]**
2	Dielectric	PTFE	**0.432 [0.017]**
3	Outer Conductor	CuNi tube	**0.580 [0.023]**

ELECTRICAL PROPERTIES

Parameter	Value
Operating Frequency	**18 GHz**
Cable-Level Cutoff Frequency	**240 GHz**
Characteristic Impedance	**50 ± 3 Ω**
Shielding Effectiveness	**>165 dB**
Dielectric Withstand Voltage	**100 V DC**
Velocity of Propagation	**70%**

MECHANICAL & ENVIRONMENTAL

Parameter	Value
Min. Bending Radius, Static	**2.90 mm**
Weight	**0.002 kg/m**
Temperature Range	**-268°C to 150°C**

CABLE ATTENUATION

CONDITION	500 MHZ	1000 MHZ	5000 MHZ	10000 MHZ	18000 MHZ
Attenuation @300K (dB/m)	4.0	5.6	12.6	17.8	23.9
Attenuation @4K (dB/m)	1.9	2.7	6.1	8.6	11.6

Interpolation reference: A = K1 × √F(MHz) + K2 × F(MHz). Tabulated attenuation values are shown in dB/m. K1 = 0.178154, K2 = 0.000001.

CRYOGENIC DESIGN NOTE

Thermal conductivity is used for preliminary heat-load estimation only. Final cable assembly performance depends on cable length, connector interfaces, thermal anchoring, routing geometry, and operating temperature stages.

4K THERMAL CONDUCTIVITY

TBD thermal data under confirmation

No directly comparable 0.58 mm OD CuNi thermal-conductivity reference has been confirmed. Consult factory for preliminary heat-load estimation.

DESIGN NOTES AND DATA BOUNDARY

Operating frequency	18 GHz is the rated operating frequency for preliminary cable selection.
Cable-level cutoff	240 GHz is a cable-level construction parameter; final assembly operating frequency may be limited by connector interface and configuration.
Thermal data	4K thermal conductivity for G06E-CN is under confirmation; consult factory for heat-load estimation.
Final assembly	Connector interface, cable length, routing form, and thermal anchoring may affect final performance.

CONFIGURATION INFORMATION REQUIRED FOR CABLE ASSEMBLY QUOTE

CABLE MODEL	**ASSEMBLY LENGTH**	**CONNECTOR INTERFACE**	**QUANTITY**
ROUTING FORM	**TEMPERATURE STAGE**	**MAGNETIC / NON-MAGNETIC REQUIREMENT**	**SPECIAL NOTES**