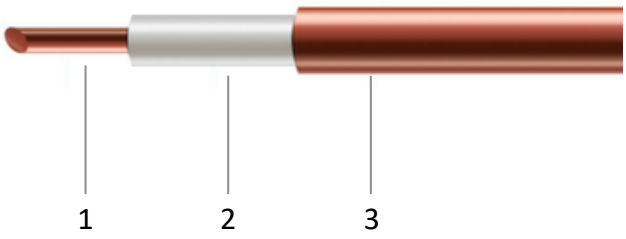
Beryllium Copper Cryogenic Coaxial Cable

G22-BeCu

2.17 mm OD BeCu cryogenic RF coaxial cable for attenuation-sensitive cryogenic RF signal routing up to 18 GHz.

Product definition: G22-BeCu is a beryllium copper cryogenic RF coaxial cable for attenuation-sensitive cryogenic RF signal paths where lower insertion loss is a key design requirement.



OUTER DIAMETER	OPERATING FREQUENCY	CABLE-LEVEL CUTOFF	MATERIAL FAMILY
2.17 mm	**18 GHz**	**70 GHz**	**BeCu**

CORE FEATURES

- 2.17 mm OD BeCu cryogenic coaxial construction
- Beryllium copper inner conductor, PTFE dielectric, beryllium copper outer conductor
- Low-attenuation conductor system for larger cryogenic RF signal paths
- DC–18 GHz operating frequency with 70 GHz cable-level cutoff

TARGET APPLICATIONS

- Lower-loss cryogenic RF signal paths
- Quantum device readout and measurement lines
- Low-temperature microwave test interconnects
- Larger-format RF paths where attenuation control is required

CONSTRUCTION SPECIFICATION

NO.	COMPONENT	MATERIAL & PROCESS	DIAMETER MM [IN]
1	Inner Conductor	Beryllium copper	**0.530 [0.021]**
2	Dielectric	PTFE	**1.600 [0.063]**
3	Outer Conductor	Beryllium copper	**2.170 [0.085]**

ELECTRICAL PROPERTIES

Parameter	Value
Operating Frequency	**18 GHz**
Cable-Level Cutoff Frequency	**70 GHz**
Characteristic Impedance	**50 ± 2.0 Ω**
Shielding Effectiveness	**>165 dB**
Dielectric Withstand Voltage	**500 V DC**
Velocity of Propagation	**77%**

MECHANICAL & ENVIRONMENTAL

Parameter	Value
Min. Bending Radius, Static	**10.30 mm**
Weight	**0.0182 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)	1.0	1.6	3.4	5.0	6.9
Attenuation @4K (dB/m)	0.7	1.0	2.2	3.2	4.3

Interpolation reference: A = K1 × √F(MHz) + K2 × F(MHz). Tabulated attenuation values are shown in dB/m. K1 = 0.046110, K2 = 0.000038.

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

488 $\times 10^{-6}$ W·cm/K

Typical design data for preliminary thermal-load estimation; not a final assembly guarantee.

DESIGN NOTES AND DATA BOUNDARY

Operating frequency	18 GHz is the operating frequency rating for preliminary cable selection.
Cable-level cutoff	70 GHz is a cable-level construction parameter; final assembly operating frequency may be limited by connector interface and configuration.
Thermal data	4K thermal conductivity is typical design data for preliminary 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**