

Semi-rigid (with low-density dielectric) Cable

Cable Type 81 (421-281)

Cut-off Frequency: 20.00 GHz

General	
Cable Model No.	421-281
Cable Code for Cable Assemblies	81
Cable MIL-C17 No.	None
Cut-off Frequency (GHz)	20.00
Electrical	
Impedance (Ohms @ sea level and +25°C)	50 ± 2
Velocity of Propagation (in %, ±2 %)	80.00
Capacitance (in pF/m)	82.00
Dielectric Strength (KV _{rms} @ 60 Hz)	6.00
Max. Operating Voltage (KV _{rms} @ 60 Hz and sea level)	1.50
Mechanical	
Semi-rigid Type (Dia. in inches)	0.250
Outer Conductor (Dia. in mm)	6.35
Outer Conductor Material	Aluminum
Outer Conductor Finish	-
Dielectric (Dia. in mm)	5.28
Dielectric Material	low-density PTFE
Dielectric Constant	~1.5
Center Conductor Material	copper
Center Conductor Finish	silver-plated
Center Conductor (Dia. in mm)	1.88
Weight (grams/m)	75.70
Minimum Bend Radius, Inside, Static (mm)	38.10
Environmental	
Operating Temperature Range (°C)	-100 to +250

Characteristics:

Additional Information:

- [Connector Code details](#)
- [Information on armor](#)
- [Ordering Information](#)

Comparison of regular PTFE and low-density PTFE:

	Regular PTFE Dielectric	Low-density Dielectric
Mechanical Stability vs. Temperature	Poor	Good Lower coefficient of thermal expansion results in improved dimensional stability from -100°C to +250°C.
Phase Stability vs. Temperature	Poor	Good Lower coefficient of thermal expansion results in lower Phase Shift vs. Temperature.
Change in Propagation Time vs. Temperature	Poor	Improved The change in propagation time 70 - 80% less than when using solid PTFE.

Attenuation	Higher	Lower Lower dissipation factor of the dielectric, lower dielectric constant, larger center conductor result in lower attenuation.
Power Handling	Lower	Higher Good temperature stability allows higher operating temperature, and therefore higher power.
Weight	Higher	Lower Low density dielectric results in lower weight.

Attenuation & Power Graph:

