UTiFLEX PRODUCT SPECIFICATION

Part Description	Item Number	Rev.
HGE055D	118373	D

Construction Layers and Standards

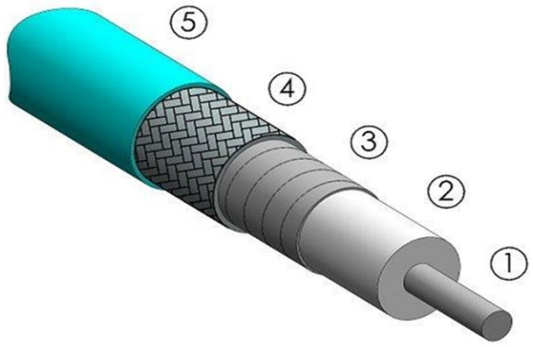
1	Center Conductor	Silver plated copper-clad steel per ASTM B-501
2	Dielectric	Solid PTFE in accordance with MIL-DTL-17
3	Outer Conductor	Silver plated copper per ASTM B-298
4	Outer Shield	High-strength, high-conductivity copper-alloy wire per ASTM B-624, silver-coated per ASTM B-298.
5	Jacket	Perfluoroalkoxy fluoropolymer (PFA) in accordance with MIL-DTL-17, Type XIII
	Cable Marking	None

Mechanical / Physical Properties

Temperature Range (°C)	-65 / 125
Center Conductor Diameter [inch(mm)]	0.0113 (0.29)
Dielectric Diameter [inch(mm)]	0.037 (0.93)
Outer Conductor Diameter [inch(mm)]	0.041 (1.04)
Outer Shield Diameter [inch(mm)]	0.046 (1.17)
Jacket Diameter [inch(mm)]	0.055 (1.40) ± 0.004 (0.10)
Jacket Wall Thickness [inch(mm)]	≥ 0.003 (0.076)
Weight [grams/ft (grams/m)]	≤ 1.5 (4.9)
Min Static Bend Radius [inch(mm)]	0.125 (3.18)
Dynamic Flex Life [3] (Cycles)	15,000
Center Conductor Strands	1

Electrical Properties

Impedance (Ohms)	50
Velocity of Propagation (%)	71
RF Shielding ((dB) at 1 GHz	≥ 70
Capacitance [pF/Ft (pF/m)]	28.36 (93.04)
Maximum Frequency (GHz)	112
Corona Extinction Voltage (VRMS @ 60Hz)	2000
Dielectric Withstanding Voltage (VRMS @ 60Hz)	5000
Insertion Loss Stability (% Change)[2]	≤ 15
K1 for Ft(m) : K2 for Ft(m)	37.99 (1.246) : 0.87 (0.029)



Environmental Properties

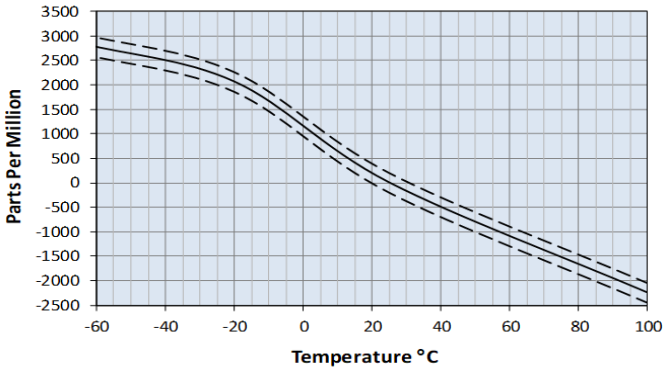
Where applicable after each test, the assembly shall show no damage, insertion loss and VSWR shall remain within the specified limits, and connector interface dimensions remain within the specified limits of MIL-PRF-39012.

Thermal Shock	MIL-STD-202, Method 107, 20 Cycles, -65 to 125 °C (cable and SMA connectors only)
Aging Stability	MIL-DTL-17, Paragraph 4.8.16, +125 °C for 168 hours (cable and SMA connectors only)
Vibration	MIL-STD-202, Method 204, Test Condition B
High Pressure	Pressure increased ≤ 10 bar/min to 100 +/- 2 bar for 12 hrs.
Low Pressure	SAE-AS-13441, Method 1004.1
Humidity	MIL-STD-810, Method 507.5, Procedure I and II
Salt Fog	MIL-STD-810, Method 509
Sand and Dust	MIL-STD-810, Method 510, Procedure I
Stress Crack Resistance	MIL-DTL-17, Paragraph 4.8.17
Cold Bend Test	MIL-DTL-17, Paragraph 4.8.19

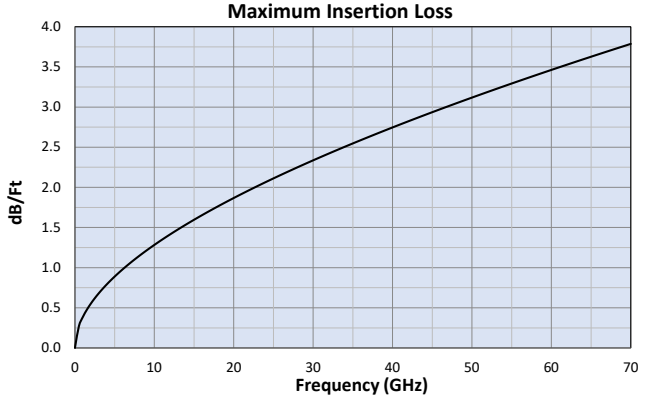
Maximum Attenuation[1], Power, and VSWR[5,6] at 20°C and Sea Level

Frequency (GHz)	Attenuation [(dB/100ft)]	Attenuation (db/m)]	Power Watts (CW)	VSWR
0.5	27	(0.90)	98	≤ 1.35:1
1	39	(1.27)	69	≤ 1.35:1
5	89	(2.93)	30	≤ 1.35:1
10	129	(4.23)	21	≤ 1.35:1
18	177	(5.80)	15	≤ 1.35:1
26.5	219	(7.17)	13	≤ 1.35:1
40	275	(9.03)	10	≤ 1.35:1
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

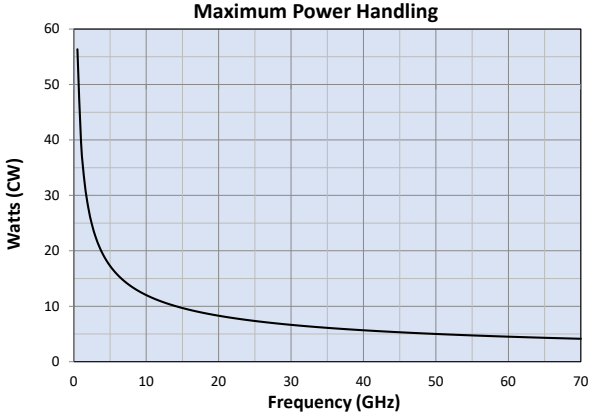
Typical Phase Change vs. Temperature[4]



Maximum Insertion Loss



Maximum Power Handling



Notes:

1. Maximum Attenuation (db./100Ft) = K1√F + K2F where F is Frequency in GHz
2. Insertion Loss change, while vibrated at a frequency of 6 Hz and an amplitude of 1 inch
3. Snake test. One end of a 3-ft sample is fixed. The other end is moved inward along the axis of the sample forcing the cable into a "U" shape. It then returns to straight configuration for one flex cycle.
4. Cable assemblies of equal length and connectors made from the same cable manufacturing lot shall phase track within 200 PPM of each other
5. Test Plots required with Shipment (Attenuation and VSWR)
6. VSWR testing to be performed on 6-foot minimum lengths with gating used to remove connector contributions. Minimum frequency points shall be 1601

Rev.	ECO #	DATE	INIT.
D	2150070	2/16/2021	JYC

APPROVALS		
DWN	DMD	9/28/2020
ENG	DSL	2/19/2021
QA	CAY	2/16/2021

Specifications subject to change. Please contact Carlisle Interconnect Technologies for the latest document revision.

FSCM NO. 64639

CARLISLE INTERCONNECT TECHNOLOGIES

HGE055D CABLE SPECIFICATION