

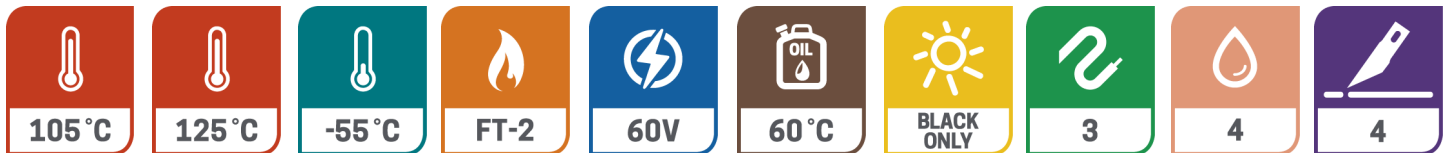


# Automotive Ethernet

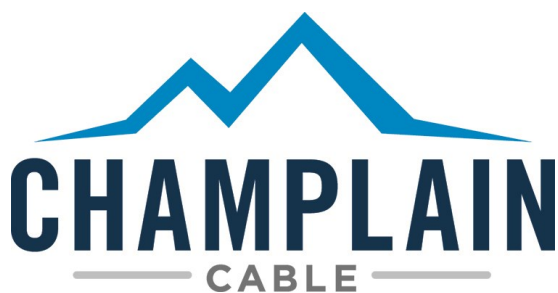
## 100Ω, 100 Base T1, OPEN ALLIANCE SIG

Champlain Cable has been producing 100ohm Ethernet Cables for over 30 years. We employ state-of-the-art processing and in-line measurement systems to ensure consistent quality. Champlain Cable also participates in SAE, ISO, and OPEN committees to help define the future of these standards.

- EXRAD® Irradiation Cross-linked Materials Provide Robust, Long-Term Performance
- TWISTIR® Technology Helps Maintain Pair Balance, a Key Factor in Electrical Performance
- Shielded Options Protect Signal from EFI / RFI and Improve Electrical Performance
- 105°C & 125°C Designs Available
- DATARAD® Automotive Ethernet Products Meet OPEN Electrical Requirements **after** ISO-6722-1 Heat-Aging. This Ensures Performance Over Time.
- Meets ISO-6722-1 Flame Requirements
- 1000 Base T1 Designs available. Contact Factory for Details



Product Number	Conductor Size Strand	Dielectric	Shield	Jacket	Nominal OD	ISO 6722-1 Temp Rating	Performance
15900	0.13mm <sup>2</sup> 7/.16mm BC	105UT	No	Yes	2.54mm	105°C	100 Base T1
15405	0.13mm <sup>2</sup> 7/.16mm BC	150UT	No	Yes	2.44mm	125°C	100 Base T1
15185	0.35mm <sup>2</sup> 7/.25mm BC	105UT	No	No	2.59mm	105°C	100 Base T1
15183	0.35mm <sup>2</sup> 7/.25mm BC	105UT	No	Yes	3.27mm	105°C	100 Base T1
15860	0.35mm <sup>2</sup> 7/.25mm BC	150UT	No	No	2.59mm	125°C	100 Base T1
15816	0.35mm <sup>2</sup> 7/.25mm BC	150UT	No	Yes	3.51mm	125°C	100 Base T1
15958	0.35mm <sup>2</sup> 7/.25mm BC	150UT	Yes	Yes	5.80mm	125°C	100 Base T1



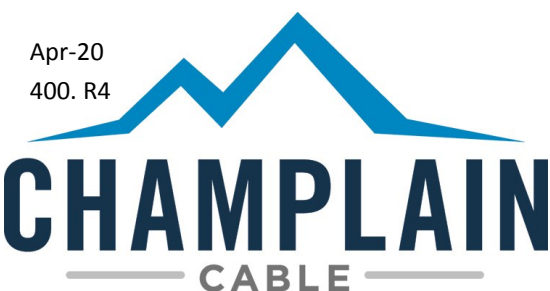


# Automotive Ethernet

Open Alliance Test	Open Alliance Requirement		Typical performance (0.35mm <sup>2</sup> )
Characteristic Impedance	100+/- 10% Ohms		98 Ohms
Insertion loss	Frequency	Loss (dB)	Loss (dB)
	1	<0.9	0.3
	10	<2.4	1.0
	33	<4.65	2.00
	66	<6.75	3.22
Return Loss	Frequency	Loss (dB)	
	1	>20.0	35.9
	10	>20.0	32.9
	20	>20.0	36.0
	33	>14.8	36.8
Mode Conversion	Frequency	Loss (dB)	
	1	>46.0	55
	10	>46.0	55
	20	>46.0	55
	33	>46.0	55
Propagation Delay	Frequency	Loss (dB)	
	66	>42.0	55
	100	>38.0	50
	200	>34.0	50
		780 ns/100 Meters Max.	547 ns

ISO 6722-1 Class D Thin Wall			EXRAD 150 UT	
Section	Description	Requirement	Typical Results (0.75mm <sup>2</sup> Sample)	
5.7	Insulation Volume Resistivity	10 <sup>9</sup> Ω /mm min.	6.43 10 <sup>18</sup> Ω /mm	Pass
5.8	Pressure at High Temperature	0.8N @ 150°C no dielectric breakdown	no breakdown	Pass
5.9	Strip Force / Adhesion	Per customer agreement	35N	Pass
5.10	Low Temperature Winding	3 turns 2.5kg - 40°C no dielectric breakdown	no dielectric breakdown	Pass
5.11	Impact	100gm @ -40°C no breakdown	no breakdown	Pass
5.12.4.1	Sandpaper Abrasion	.2kg 350mm min	730mm	Pass
5.12.4.2	Scrape Abrasion	Per customer agreement	2430	Pass
5.13	Long-Term Heat Aging	150°C 3000 hours	no breakdown	Pass
5.15	Thermal Overload	200°C 6 hours	no breakdown	Pass
5.16	Shrinkage by heat	2mm max. 150°C	no shrinkage,	Pass
5.17	Fluid Compatibility	All fluids	>5% swell	Pass
5.19	Ozone Resistance	45°C 85% Relative Humidity 70 hours, Ozone 50 +/- 5 pphm 1kV 1 min. (no breakdown)	no breakdown	Pass
5.20	Resistance to hot water	not less than 10-5 ohm-mm	5.35 X10 <sup>14</sup> ohm-mm	Pass
5.21	Temperature and Humidity Cycling	40 - 8 hours cycles -40°C and 125°C 80 -100% relative humidity	no dielectric breakdown	Pass
5.22	Resistance to Flame Propagation	70 sec. max. 50mm unburned	8 sec. after burn	Pass

We cannot anticipate all conditions under which this information and our products or the products of other manufacturers in combination with our products may be used. We accept no responsibility for results obtained by the application of this information or the safety and suitability of our products alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each such product combination for their own purpose. Unless otherwise agreed in writing, we sell the products without warranty, and buyers and users assume all responsibility and liability for loss and damage arising from the handling and use of our products whether used alone or in combination with other products



Apr-20  
400. R4

**Manufacturing Locations:**  
**Colchester, Vermont**  
**El Paso, Texas**  
[www.champcable.com](http://www.champcable.com)