



# DET NORSKE VERITAS

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## TYPE APPROVAL CERTIFICATE

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**CERTIFICATE NO. E-9283**

This Certificate consists of 4 pages


*This is to certify that the*  
**Data transmission cables and systems**  
*with type designation(s)*  
**P/N S670T-NN-XXY Armored and Sheathed**

*Manufactured by*  
**Draka Cableteq USA**  
North Dighton, United States

*is found to comply with*  
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards  
IEC 60332-3-22 (2000-10)  
IEC 60754-1 (1994-01)  
IEC 60754-2 (1997-04)  
IEC 60794-1-1 (2001)  
IEC 60794-2  
IEC 60794-2-2  
IEC 61034-2 (2005-04)

*Application*  
Signalling, Communication and Data Transmission



*Place and date*  
Høvik, 2009-02-06  
for DET NORSKE VERITAS AS

  
for Trond Sjøvåg  
Head of Section



*Local Office*  
DNV New York

*This Certificate is valid until*  
2012-12-31

  
for Erik Hoffmann  
Surveyor 

**Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.**

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



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## Product description

Type P/N S670T-NN-XXY, Armored and sheathed

Optical fibre: In accordance with IEC-60793  
Tight buffer: Polyester elastomer  
Strength member: Aramid Yarn  
Filler: Polyolefine – SHF1  
Inner Sheath: Polyolefine – SHF1  
Metal covering: 28 AWG bronze armor  
Outer sheath: Polyolefine – SHF1

Part number	Diameter (mm)
S670T-02R-XXY	11,23±0,25
S670T-04-XXY	12,45±0,25
S670T-06-XXY	13,34±0,25
S670T-08-XXY	14,33±0,25
S670T-10-XXY	16,23±0,25
S670T-12-XXY	17,42±0,25

Part number	Diameter (mm)
S670T-16-XXY	17,83±0,38
S670T-18-XXY	17,83±0,38
S670T-24-XXY	19,51±0,38
S670T-36-XXY	22,35±0,51
S670T-48-XXY	28,91±0,51

Fiber types	Single-mode 9/125	Multi-mode 50/125	Multi-mode 62,5/125	Multimode 200/230
“XXY” Designation	010X	50H	62X	200S
Core diameter	8,3 µm	50±2,5 µm	62,5±2,5 µm	200±5,0 µm
Mode field diameter		N/A	N/A	N/A
1310 nm	9,1±0,5 µm			
1550 nm	10,2±1,0 µm			
Cladding diameter	125±1,0 µm	125 ± 2,0 µm	125±2,0 µm	230±10,0 µm
Primary coating diameter	242±7 µm	245± 10 µm	245±10 µm	500±30,0 µm
Attenuation				≤ 12 dB/km
820 nm				
850 nm		≤ 3,50 dB/km	≤ 3,50 dB/km	
1300 nm		≤ 1,50 dB/km	≤ 1,00 dB/km	
1310 nm	≤ 0,70 dB/km			
1550 nm	≤ 0,70 dB/km			
Bandwidth	N/A			≥20 MHz·km
820 nm				
850 nm		≥ 500 MHz·km	≥ 200 MHz·km	
1300 nm		≥ 500 MHz·km	≥ 500 MHz·km	
Dispersion		N/A	N/A	N/A
1285-1310 nm	<3,2 ps/nm·km			
1550 nm	<18 ps/nm·km			



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Fiber types	Single-mode 9/125	Multi-mode 50/125	Multi-mode 62,5/125	Multimode 200/230
“XXY” Designation	010X	50H	62X	200S
Numerical aperture	N/A	0,200±0,015	0,275±0,015	0,37 Nominal

### Application/Limitation

Temperature window

Operation: -20°C to +80°C

Storage: -40°C to +80°C

The requirements of SOLAS Amendments Chapter II-1, Part D, Reg. 45, 5.2 (provision to be taken to limit Fire Propagation along Bunches of Cables or Wires) are fulfilled without any additional measures.

### Type Approval documentation

Test report: J20002366-008 and J20002366-009 dated 2000-06-06 and J20012357-002 dated 2000-09-20.

Data sheets

### Tests carried out

Tested according to IEC 60794-1-1/1-2, IEC 60794-2, IEC 60332-3 A, IEC 60754-1/-2 and IEC 61034-1/2

### Marking of product

Product marking: Draka Comteq, Inc. – S670T-NN-XXY

NN – number of fibres

XXY – fibre type

### Certificate retention survey

The scope of the retention/renewal survey is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation



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- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Survey to be performed at least every second year.

END OF CERTIFICATE