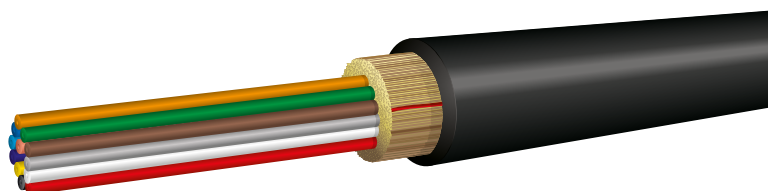


# SHIPBOARD CABLES

## (5.5a) D-Series Distribution LSZH ABS-Approved Cables



### Applications

- Approved by the American Bureau of Shipping (ABS)
- Marine and offshore tight-buffered cable design for use in installations requiring a flame-retardant, low-smoke and zero-halogen cable intended for single point terminations
- Can be used in applications requiring ABS-approved fiber optic cables

### Features

- Zero-halogen construction meets IEC 60754-2
- Meets low-smoke requirements of UL 1685 and IEC 61034-2
- Flame-retardant per the requirements of IEC 60332-3-24
- UL listed OFN-LS
- ABS-approved for 2007 Steel Vessels Rules 1-1-4/7.7, 4-8-3/9.13
- ABS-approved for 2006 MODU Rules 4-3-4/13.1.6
- Suitable for indoor or outdoor applications
- Jacket is UV, fungus and moisture resistant
- Round cable construction for easy handling and termination
- Includes ripcord for easy outer jacket removal
- Rugged distribution-style cable with 2 to 24 for deck applications
- Optical fiber types include 62.5/125, 50/125, and single-mode
- Available with 500µm primary acrylate-coated fiber for maximum mechanical and environmental protection of the optical fiber



### Applicable Standards

OCC D-Series Distribution Low-Smoke Zero-Halogen ABS-Approved Cable meet or exceed the functional requirements of the following standards:

- IEC 60332-3-24
- IEC 60754-2
- IEC 61034-2
- UL 1685
- ICEA-S-104-696
- MIL-C-24643
- TIA-568
- TIA-598
- ABS Steel Vessels and MODU Rules

### Mechanical and Environmental Performance

Operating temperature	-40°C to +70°C
Storage temperature	-40°C to +70°C
Installation temperature (cable temp.)	-20°C to +60°C
Flame retardancy	IEC 60332-3-24; UL listed OFN-LS (UL 1685) ABS type approved 07-HS274922
Zero-halogen	IEC 60754-2
Smoke generation	IEC 61034-2
Crush resistance (TIA-455-41)	1,800 N/cm
Flex resistance (TIA-455-104)	2,000 cycles



**(5.5a) D-Series Distribution LSZH ABS-Approved Cables**

**Cable Characteristics:  
D-Series Distribution LSZH ABS-Approved Cables**

FIBER COUNT	DIAMETER MM (IN)	WEIGHT KG/KM (LBS/1,000')	TENSILE LOAD		MINIMUM BEND RADIUS	
			INSTALLATION N (LBS)	OPERATIONAL N (LBS)	INSTALLATION CM (IN)	LONG-TERM CM (IN)
2	5.4 (0.21)	30 (20)	1,400 (310)	450 (100)	8.1 (3.2)	5.4 (2.1)
4	5.6 (0.22)	32 (22)	1,400 (310)	450 (100)	8.4 (3.3)	5.6 (2.2)
6	5.9 (0.23)	37 (25)	1,400 (310)	450 (100)	8.9 (3.5)	5.9 (2.3)
8	6.4 (0.25)	43 (29)	1,600 (360)	525 (120)	9.6 (3.8)	6.4 (2.5)
10	6.9 (0.27)	56 (38)	1,800 (400)	600 (135)	10.4 (4.1)	6.9 (2.7)
12	7.6 (0.30)	61 (41)	2,700 (600)	600 (135)	11.4 (4.5)	7.6 (3.0)
18	7.5 (0.30)	59 (40)	2,700 (600)	700 (160)	11.3 (4.4)	7.5 (3.0)
24	9.1 (0.36)	92 (62)	3,000 (670)	1,000 (220)	13.7 (5.4)	9.1 (3.6)

Installation loads in excess of 2,700 N (600 lbs.) are not recommended.

**Ordering Information**

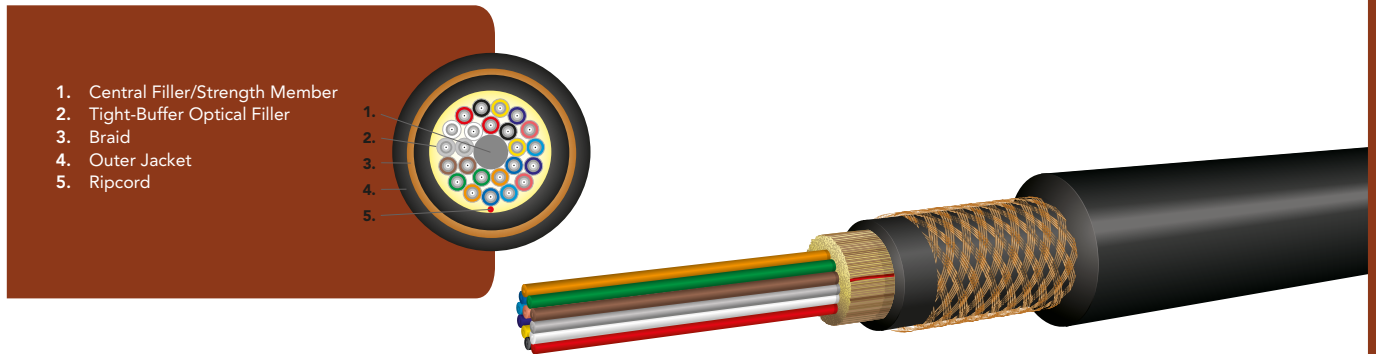
Digit No:	D					Z				9	K	E	-		A	B	S
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	1	Distribution Series = <b>D</b>															
	2	Ultra-Fox = <b>X</b>															
		Ultra-Fox Plus Fiber = <b>-</b>															
	3-5	Fiber count: <b>002-024</b>															
	6	Jacket type: Low-Smoke Zero-Halogen Jacket = <b>Z</b>															
	7-9	Fiber type: (see Laser Ultra-Fox or Ultra-Fox Plus Fiber Performance Table, pg. 206-207)															
	10	Ultra-Fox fiber with 900µm tight-buffer = <b>9</b> ;															
		Ultra-Fox Plus 900µm tight-buffer = <b>5</b>															
	11	Jacket color: Black = <b>K</b>															
	12	Rating: Flame-Retardant, Low-Smoke Zero-Halogen = <b>E</b>															
	14	Print in feet marks = <b>F</b> ; Print in meter marks = <b>M</b>															
	15-17	ABS-approved version = <b>ABS</b>															

**Example:** 12-fiber ABS-approved low-smoke zero-halogen, distribution cable using OM3 laser optimized bend-insensitive fiber, Ultra-Fox, black jacket printed in feet

**D X 0 1 2 Z A L T 9 K E - F A B S**

## SHIPBOARD CABLES

## (5.5b) D-Series Distribution LSZH Braided Armor ABS-Approved Cables



## Applications

- Approved by the American Bureau of Shipping (ABS)
- Marine and offshore tight-buffered cable design for use in installations requiring a flame-retardant, low-smoke and zero-halogen cable

## Features

- Zero-halogen construction meets IEC 60754-2
- Meets low-smoke requirements of UL 1685
- Flame-retardant per the requirements of UL 1685 OFC-LS
- UL listed OFC-LS
- Suitable for indoor or outdoor applications
- Jacket is UV, fungus and moisture resistant
- Bronze braid armor adds a degree of durability to limit damage due to abrasion
- Round cable construction for easy handling and termination
- Includes ripcord for easy outer jacket removal
- Distribution-style cable with 2 to 24 fibers
- ABS-approved for 2007 Steel Vessels Rules 1-1-4/7.7, 4-8-3/9.13
- ABS-approved for 2006 MODU Rules 4-3-4/13.1.6
- Optical fiber types include 62.5/125, 50/125, and single-mode
- Available with 500µm primary acrylate-coated fiber for maximum mechanical and environmental protection of the optical fiber
- Braid applied per IEEE 1580



## Applicable Standards

OCC D-Series Distribution Low-Smoke Zero-Halogen Braided-Armor ABS-Approved Cables meet or exceed the functional requirements of the following standards:

- IEC 60754-2
- UL 1685 OFC-LS
- ICEA-S-104-696
- MIL-C-24643
- TIA-568
- TIA-598
- IEEE 1580 (Braid Application)

## Mechanical and Environmental Performance

Operating temperature	-40°C to +70°C
Storage temperature	-40°C to +70°C
Installation temperature (cable temp.)	-20°C to +60°C
Flame retardancy	OFC-LS, ABS type approved 07-HS274922
Crush resistance (TIA-455-41)	1,800 N/cm
Flex resistance (TIA-455-104)	2,000 cycles





## (5.5b) D-Series Distribution LSZH Braided Armor ABS-Approved Cables

### Cable Characteristics: D-Series Distribution LSZH Braided Armor ABS-Approved Cables

FIBER COUNT	DIAMETER MM (IN)	WEIGHT KG/KM (LBS/1,000')	TENSILE LOAD		MINIMUM BEND RADIUS	
			INSTALLATION N (LBS)	OPERATIONAL N (LBS)	INSTALLATION CM (IN)	LONG-TERM CM (IN)
2	9.3 (0.37)	126 (85)	1,400 (310)	450 (100)	14 (5.5)	9.3 (3.7)
4	9.5 (0.37)	132 (89)	1,400 (310)	450 (100)	14.3 (5.6)	9.5 (3.7)
6	9.9 (0.39)	144 (97)	1,400 (310)	450 (100)	14.9 (5.9)	9.9 (3.9)
8	10.4 (0.41)	158 (106)	1,600 (360)	525 (120)	15.6 (6.1)	10.4 (4.1)
10	10.8 (0.43)	171 (115)	1,800 (400)	600 (135)	16.2 (6.4)	10.8 (4.3)
12	11.5 (0.45)	193 (130)	2,700 (600)	600 (135)	17.3 (6.8)	11.5 (4.5)
18	11.5 (0.45)	190 (128)	2,700 (600)	700 (160)	17.3 (6.8)	11.5 (4.5)
24	13.1 (0.52)	237 (159)	3,000 (670)	1,000 (220)	19.7 (7.8)	13.1 (5.2)

Installation loads in excess of 2,700 N (600 lbs.) are not recommended.

### Ordering Information

Digit No:	D	X				Z					K	A	B	2	-	
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Distribution Series = <b>D</b>															
2	Ultra-Fox = <b>X</b>															
	Ultra-Fox Plus Fiber = <b>-</b>															
3-5	Fiber count: (see cable characteristics chart) = <b>002-024</b>															
6	Jacket type: Low-Smoke Zero-Halogen Jacket = <b>Z</b>															
7-9	Fiber type: (see Laser Ultra-Fox or Ultra-Fox Plus Fiber Performance Table, pg. 206-207)															
10	Ultra-Fox fiber with 900µm tight-buffer = <b>9</b>															
	Ultra-Fox Plus fiber with 900µm tight-buffer = <b>5</b>															
11	Jacket color: Black = <b>K</b>															
12	Rating: OFC-LS = <b>A</b>															
13-14	Braided cable with Z jacket = <b>B2</b>															
16	Print in feet marks = <b>F</b> ; Print in meter marks = <b>M</b>															
17-19	For ABS-approved cable = <b>ABS</b>															

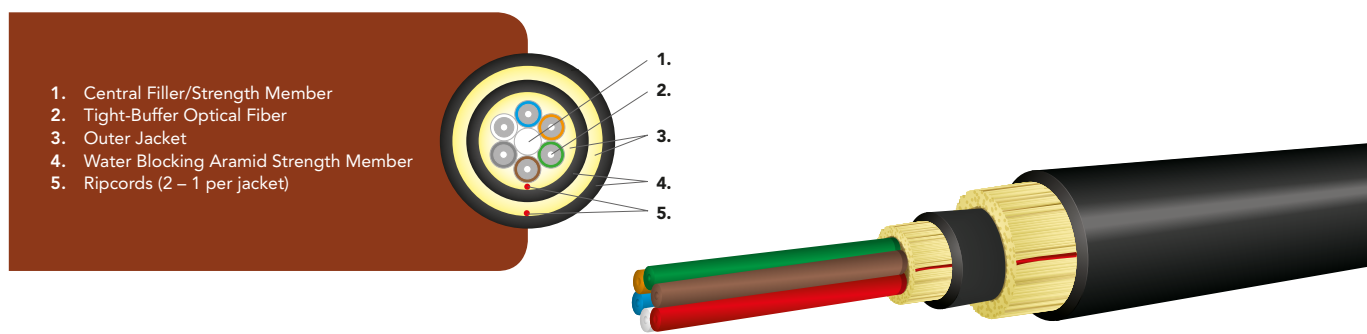
**Example:** 12-fiber low-smoke zero-halogen, distribution cable using 62.5µm Ultra-Fox fiber, black jacket printed in feet, braided and ABS-approved

**D X 0 1 2 Z W L S 9 K A B 2 - F A B S**



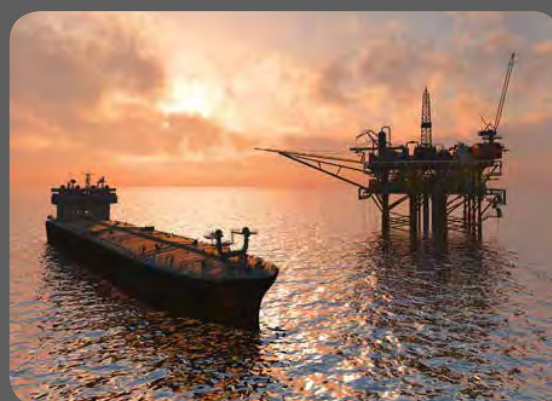
# SHIPBOARD CABLES

## (5.5c) DNV-Certified Shipboard Cables



### Applications

- Approved by Det Norske Veritas (DNV)
- Signaling, communication, and data transmission for fixed and deployable networks on board ships and offshore structures with applications including; Mobile Offshore Drilling Units (MODUs), Floating Production Storage and Offloading (FPSO), Tension Leg Platforms (TLP), Liquefied Natural Gas (LNG)



### Features

- Low-Smoke Zero-Halogen (LSZH) cable
- Rugged cable for deck applications
- Flame-retardant
- 2- to 6-fiber double jacketed D-Series Distribution cable constructions are available
- Optical fiber types include 62.5/125, 50/125, and single-mode
- Available with 500µm primary acrylate-coated fiber for maximum mechanical and environmental protection of the optical fiber
- DNV Certified — DNV Type approval certificate No. E-14194
- Meets IEC standards for flame spread, smoke density and halogen content

### Mechanical and Environmental Performance

Operating temperature	-40°C to +85°C
Storage temperature	-55°C to +85°C
Installation temperature (cable temp.)	-10°C to +60°C
Flame retardancy	IEC 60332-1, 60332-3
Impact resistance	IEC 60794-1-2-E4 Cat. A
Crush resistance	IEC 60794-1-2-E3 Cat. A



### Cable Characteristics: DNV Certified Shipboard Cables

FIBER COUNT	DIAMETER MM (IN)	WEIGHT KG/KM (LBS/1,000')	TENSILE LOAD		MINIMUM BEND RADIUS	
			INSTALLATION N (LBS)	OPERATIONAL N (LBS)	INSTALLATION CM (IN)	LONG-TERM CM (IN)
2-6	9.5 (0.37)	95 (64)	1,200 (270)	400 (90)	14.3 (3.2)	9.5 (2.1)

 (5.5c) DNV-Certified Shipboard Cables

## General Cable and Fiber Specifications

SPECIFICATION	TEST
IEC 60794-1-2-E1	Tensile Strength
IEC 60794-1-2-E3	Crush
IEC 60794-1-2-E4	Impact
IEC 60794-1-2-E6	Repeated Bending
IEC 60794-1-2-E7	Torsion
IEC 60794-1-2-E10	Kink
IEC 60794-1-2-E11	Cable Bend
IEC 60794-1-2-E11	Cold Bend Test
IEC 60794-2-F5	Water Penetration
IEC 60794-1-2-F1	Temperature Cycling
IEC 60332-1	Flame-Retardant
IEC 60332-3	Test on Bunched Wires or Cables, Cat. A

SPECIFICATION	TEST
IEC 60754-1	Halogen-Free Test
IEC 60754-2	Determination of Degree of Acidity of Gases
IEC 61034-2	Smoke Density
IEC 60811-1-1 Clause 9	Mechanical Characteristics Without Aging
IEC 60811-1-2 Subclause 8.1	Mechanical Characteristics After Aging in Air Oven
IEC 60811-3-1 Subclause 8.2	Maximum Permissible Deformation
IEC 60811-3-1	Heat Shock Test
IEC 60811-1-4	Elongation Test
IEC 60811-1-4 Sub clause 8.5	Cold Impact Test

## Ordering Information

Base cable part number is OC031016. The suffix indicated in the table is added to complete the part number based on the fiber type needed.

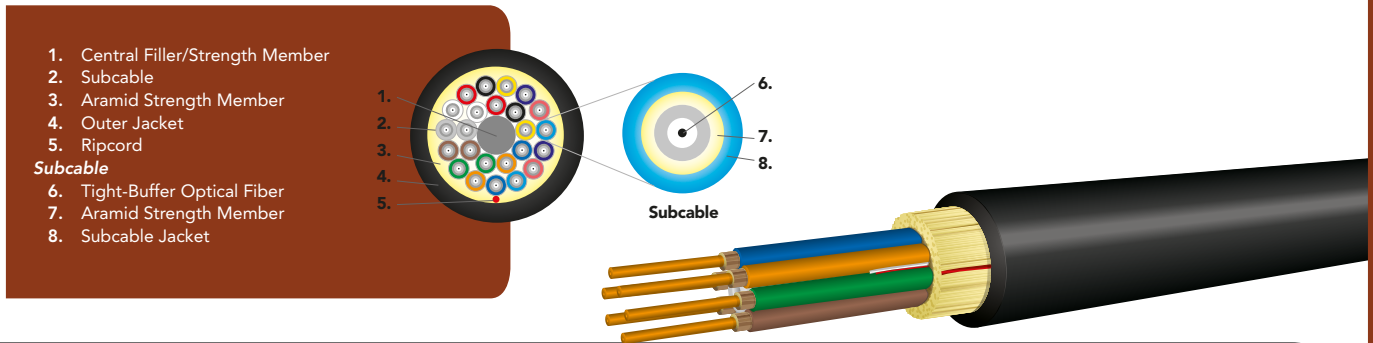
Example: 4-fiber DNV-Certified cable with WLS fiber = **OC031016-01**

FIBER COUNT	FIBER TYPE	FIBER BUFFER	SUFFIX
2	WLS	Ultra-Fox	-13
2	WST	Ultra-Fox Plus	-14
2	ALS	Ultra-Fox	-15
2	AST	Ultra-Fox Plus	-16
2	SLX	Ultra-Fox	-17
2	SLS	Ultra-Fox Plus	-18
4	WLS	Ultra-Fox	-01
4	WST	Ultra-Fox Plus	-02
4	ALS	Ultra-Fox	-03
4	AST	Ultra-Fox Plus	-04
4	SLX	Ultra-Fox	-05
4	SLS	Ultra-Fox Plus	-06
6	WLS	Ultra-Fox	-07
6	WST	Ultra-Fox Plus	-08
6	ALS	Ultra-Fox	-09
6	AST	Ultra-Fox Plus	-10
6	SLX	Ultra-Fox	-11
6	SLS	Ultra-Fox Plus	-12



# SHIPBOARD CABLES

## (5.5d) B-Series Breakout LSZH ABS-Approved Cables



### Applications

- Approved by the American Bureau of Shipping (ABS)
- Marine and offshore tight-buffered cable design for use in installations requiring a flame-retardant, low-smoke and zero-halogen cable incorporating individual subcables for direct termination

### Features

- Zero-halogen construction meets IEC 60754-2
- Meets low-smoke requirements of UL 1685 and IEC 61034-2
- Flame-retardant per the requirements of IEC 60332-3-24 and UL 1666
- UL listed in accordance with NEC sections 770.179(b) for use in vertical runs in building riser shafts or from floor to floor
- ABS-approved for 2010 Steel Vessels Rules 1-1-4/7.7, 1-1 – Appendix 3, 4-8-3/9.1, 4-8-3/9.5 (I & II), 4-8-3/9.13
- ABS-approved for 2008 MODU Rules 4-3-3/5.1, 4-3-3/5.21, 4-3-4/13.1.6
- Suitable for indoor or outdoor applications
- Jacket is UV, fungus and moisture resistant
- Round cable construction for easy handling and termination
- Includes ripcord for easy outer jacket removal
- Rugged cable for deck applications
- Breakout style cable with 2 to 24 fibers
- Optical fiber types include 62.5/125, 50/125, and single-mode
- Available with 500µm primary acrylate-coated fiber for maximum mechanical and environmental protection of the optical fiber



### Applicable Standards

OCC B-Series Breakout Low-Smoke Zero-Halogen ABS-Approved Cables meet or exceed the functional requirements of the following standards:

- IEC 60332-3-24
- IEC 60754-2
- IEC 61034-2
- UL 1666 OFNR
- UL 1685 OFN-LS
- ICEA-S-104-696
- MIL-C-24643
- TIA-568
- TIA-598
- ABS Steel Vessels Rules
- ABS MODU Rules

### Mechanical and Environmental Performance

Operating temperature	-40°C to +70°C
Storage temperature	-40°C to +70°C
Installation temperature (cable temp.)	-20°C to +60°C
Flame retardancy	IEC 60332-3-24 UL listed OFNR-LS (UL 1666 & 1685), ABS type approved 06-HS166303
Smoke generation	IEC 61034-2
Zero-halogen	IEC 60754-2
Crush resistance (TIA-455-41)	2,200 N/cm
Flex resistance (TIA-455-104)	2,000 cycles



 (5.5d) B-Series Breakout LSZH ABS-Approved Cables

### Cable Characteristics: B-Series Breakout LSZH ABS-Approved Cables (with 2.0mm subcables)

FIBER COUNT	DIAMETER MM (IN)	WEIGHT KG/KM (LBS/1,000')	TENSILE LOAD		MINIMUM BEND RADIUS	
			INSTALLATION N (LBS)	OPERATIONAL N (LBS)	INSTALLATION CM (IN)	LONG-TERM CM (IN)
2	8.1 (0.32)	66 (44)	1,600 (360)	400 (90)	12.1 (4.8)	8.1 (3.2)
4	8.1 (0.32)	66 (44)	1,600 (360)	400 (90)	12.1 (4.8)	8.1 (3.2)
6	9.1 (0.36)	82 (55)	2,400 (540)	600 (130)	13.7 (5.4)	9.1 (3.6)
8	10.4 (0.41)	108 (73)	3,200 (720)	800 (180)	15.6 (6.1)	10.4 (4.1)
12	11.6 (0.46)	131 (88)	4,800 (1,800)	1,200 (270)	17.4 (6.9)	11.6 (4.6)
18	12.8 (0.50)	162 (109)	7,200 (1,620)	1,800 (400)	19.2 (7.6)	12.8 (5.0)
24	15.0 (0.59)	219 (147)	9,600 (2,100)	2,400 (540)	22.5 (8.9)	15.0 (5.9)

### B-Series Breakout LSZH ABS-Approved Cables (with 2.5mm subcables)

FIBER COUNT	DIAMETER MM (IN)	WEIGHT KG/KM (LBS/1,000')	TENSILE LOAD		MINIMUM BEND RADIUS	
			INSTALLATION N (LBS)	OPERATIONAL N (LBS)	INSTALLATION CM (IN)	LONG-TERM CM (IN)
2	9.2 (0.36)	84 (56)	2,000 (450)	800 (180)	13.8 (5.4)	9.2 (3.6)
4	9.2 (0.36)	84 (56)	2,000 (450)	800 (180)	13.8 (5.4)	9.2 (3.6)
6	10.6 (0.42)	107 (72)	3,000 (670)	1,200 (270)	15.9 (6.3)	10.6 (4.2)
8	12.4 (0.49)	144 (97)	4,000 (900)	1,700 (3,800)	18.6 (7.3)	12.4 (4.9)
12	14.0 (0.55)	171 (115)	6,000 (1,350)	2,500 (560)	21.0 (8.3)	14.0 (5.5)
18	15.9 (0.63)	225 (151)	8,000 (1,800)	3,500 (790)	23.9 (9.4)	15.9 (6.3)
24	17.9 (0.70)	290 (195)	10,000 (2,250)	3,800 (850)	26.9 (10.6)	17.9 (7.0)

Installation loads in excess of 2,700N (600lbs.) are not recommended.

### Ordering Information

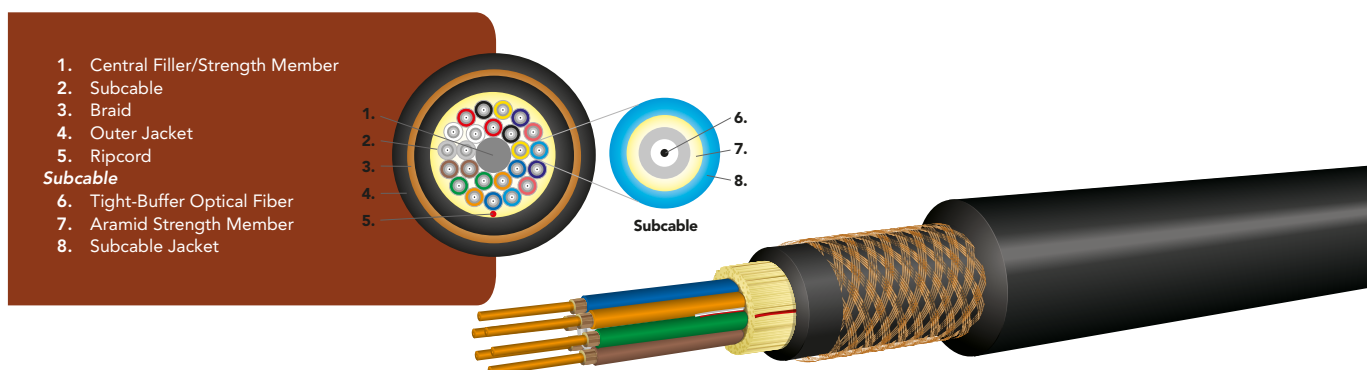
Digit No:	B					Z				9	K	E	-		A	B	S
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	1	Breakout Series = <b>B</b>															
	2	Ultra-Fox with 2.5mm subunits = <b>X</b>															
		Ultra-Fox with 2.0mm subunits = <b>E</b>															
	3 – 5	Fiber count: (see cable characteristics chart) = <b>002-024</b>															
	6	Jacket type: Low-Smoke Zero-Halogen Jacket = <b>Z</b>															
	7 – 9	Fiber type: (see Laser Ultra-Fox or Ultra-Fox Plus Fiber Performance Table, pg. 206–207)															
	10	Ultra-Fox fiber with 900µm tight-buffer = <b>9</b> ;															
		Ultra-Fox Plus fiber with 900µm tight-buffer = <b>5</b>															
	11	Jacket color: Black = <b>K</b>															
	12	Rating: Flame-Retardant Low-Smoke and Zero-Halogen = <b>E</b>															
	14	For print in feet marks = <b>F</b> ; and for print in meter marks = <b>M</b>															
	15 – 17	ABS-approved version = <b>ABS</b>															

**Example:** 12-fiber ABS-approved, 2.5mm subunits, low-smoke zero-halogen, breakout cable using 62.5µm Laser Ultra-Fox fiber, black jacket printed in feet

**B X 0 1 2 Z W L S 9 K E - F A B S**

# SHIPBOARD CABLES

## (5.5e) B-Series Breakout LSZH Braided Armor ABS-Approved Cables



### Applications

- Approved by the American Bureau of Shipping (ABS)
- Marine and offshore tight-buffered cable design for use in installations requiring a flame-retardant, low-smoke and zero-halogen cable incorporating individual subcables for direct termination

### Features

- Zero-halogen construction meets IEC 60754-2
- Meets low-smoke requirements of UL 1685
- UL listed OFCR-LS
- ABS-Approved for 2010 Steel Vessels Rules 1-1-4/7.7, 1-1 – Appendix 3, 4-8-3/9.1, 4-8-3/9.5 (I & II), 4-8-3/9.13
- ABS-Approved for 2008 MODU Rules 4-3-3/5.1, 4-3-3/5.21, 4-3-4/13.1.6
- Bronze braid armor adds a degree of durability to limit damage due to abrasion
- Suitable for indoor or outdoor applications
- Jacket is UV, fungus and moisture resistant
- Round cable construction for easy handling and termination
- Includes ripcord for easy outer jacket removal
- Rugged breakout-style cable for deck applications with 2 to 24 fibers
- Optical fiber types include 62.5/125, 50/125, and single-mode
- Available with 500µm primary acrylate-coated fiber for maximum mechanical and environmental protection of the optical fiber
- Braid layer applied per IEEE 1580
- 2.0mm and 2.5mm subcables available



### Applicable Standards

OCC B-Series Breakout Low-Smoke Zero-Halogen Braided Armor ABS-Approved Cables meet or exceed the functional requirements of the following standards:

- IEC 60754-2
- UL 1666 OFCR
- UL 1685 OFCR-LS
- ICEA-S-104-696
- MIL-C-24643
- TIA-568
- TIA-598

### Mechanical and Environmental Performance

	ZERO-HALOGEN
Operating temperature	-40°C to +70°C
Storage temperature	-40°C to +70°C
Flame retardancy	UL 1666 OFCR UL 1685 OFCR-LS, ABS type approved 10-HS639311
Installation temperature (cable temp.)	-20°C to +60°C
Crush resistance (TIA-455-41)	2,200 N/cm



 (5.5e) B-Series Breakout LSZH Braided-Armor ABS-Approved Cables

**Cable Characteristics:**  
**B-Series Breakout LSZH Braided-Armor ABS-Approved Cables (with 2.0mm subcables)**

FIBER COUNT	DIAMETER MM (IN)	WEIGHT KG/KM (LBS/1,000')	TENSILE LOAD		MINIMUM BEND RADIUS	
			INSTALLATION N (LBS)	OPERATIONAL N (LBS)	INSTALLATION CM (IN)	LONG-TERM CM (IN)
2	12.0 (0.47)	198 (133)	1,600 (360)	400 (90)	18.0 (7.1)	12.0 (4.7)
4	12.0 (0.47)	198 (133)	1,600 (360)	400 (90)	18.0 (7.1)	12.0 (4.7)
6	13.0 (0.51)	233 (157)	2,400 (540)	600 (130)	19.5 (7.7)	13.0 (5.1)
8	14.3 (0.56)	278 (187)	3,200 (720)	800 (180)	21.5 (8.5)	14.3 (5.6)
12	15.5 (0.61)	319 (214)	4,800 (1,800)	1,200 (270)	23.3 (9.2)	15.5 (6.1)
18	16.7 (0.66)	368 (247)	7,200 (1,620)	1,800 (400)	25.1 (9.9)	16.7 (6.6)
24	18.9 (0.74)	454 (305)	9,600 (2,100)	2,400 (540)	28.3 (11.1)	18.9 (7.4)

**B-Series Breakout LSZH Braided-Armor ABS-Approved Cables (with 2.5mm subcables)**

FIBER COUNT	DIAMETER MM (IN)	WEIGHT KG/KM (LBS/1,000')	TENSILE LOAD		MINIMUM BEND RADIUS	
			INSTALLATION N (LBS)	OPERATIONAL N (LBS)	INSTALLATION CM (IN)	LONG-TERM CM (IN)
2	13.2 (0.52)	238 (160)	2,000 (450)	800 (180)	19.8 (7.8)	13.2 (5.2)
4	13.2 (0.52)	238 (160)	2,000 (450)	800 (180)	19.8 (7.8)	13.2 (5.2)
6	14.5 (0.57)	280 (188)	3,000 (670)	1,200 (270)	21.8 (8.6)	14.5 (5.7)
8	16.3 (0.64)	344 (231)	4,000 (900)	1,700 (3,800)	24.5 (9.6)	16.3 (6.4)
12	17.9 (0.70)	400 (269)	6,000 (1,350)	2,500 (560)	26.9 (10.5)	17.9 (7.0)
18	19.8 (0.78)	477 (321)	8,000 (1,800)	3,500 (790)	29.7 (11.7)	19.8 (7.8)
24	21.8 (0.86)	572 (384)	10,000 (2,250)	3,800 (850)	32.7 (12.9)	21.8 (8.6)

Installation loads in excess of 2,700N (600lbs.) are not recommended.

**Ordering Information**

Digit No:	B					Z				9	K	R	B	2	-		A	B	S
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Breakout Series = <b>B</b>																		
2	Ultra-Fox with 2.5mm subunits = <b>X</b> Ultra-Fox with 2.0mm subunits = <b>E</b>																		
3 – 5	Fiber count: (see cable characteristics chart) = <b>002–024</b>																		
6	Jacket type: Low-Smoke Zero-Halogen Jacket = <b>Z</b>																		
7 – 9	Fiber type: (see Laser Ultra-Fox Fiber Performance Table, pg. 206)																		
10	Ultra-Fox fiber with 900µm tight-buffer = <b>9</b> Ultra-Fox Plus fiber with 900µm tight-buffer = <b>5</b>																		
11	Jacket color: Black = <b>K</b>																		
12	Rating: Riser = <b>R</b>																		
13 – 14	Braid Option: Zero-Halogen Braid = <b>B2</b>																		
16	Print in feet marks = <b>F</b> ; Print in meter marks = <b>M</b>																		
17 – 19	For ABS-approved cable = <b>ABS</b>																		

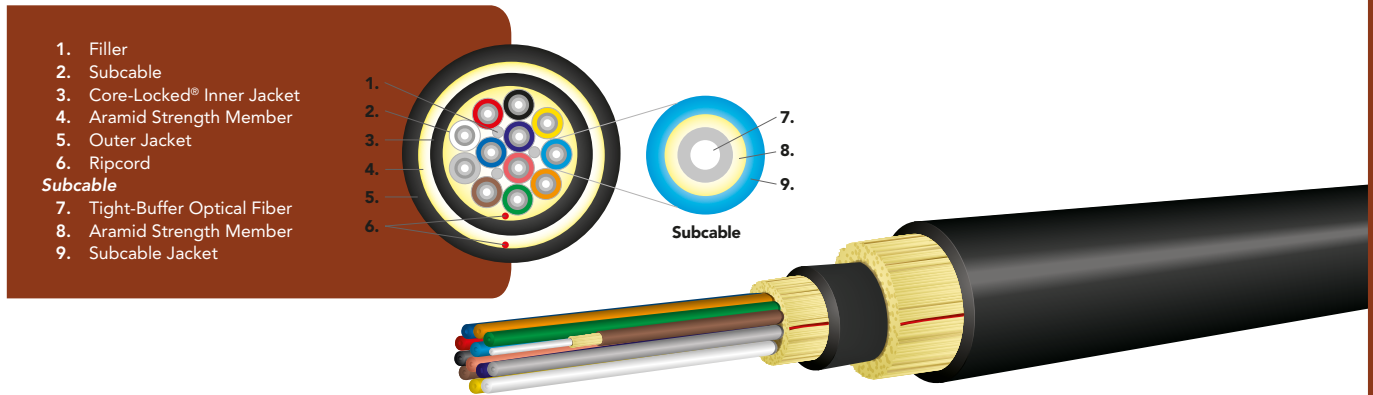
**Example:** 12-fiber low-smoke zero-halogen, distribution cable using 62.5µm Laser Ultra-Fox fiber, black jacket printed in feet, braided and ABS-approved

**B X 0 1 2 Z W L S 9 K R B 2 - F A B S**



## SHIPBOARD CABLES

## (5.5f) Pierside Cables



## Applications

- Ship-to-shore communications in a fiber optic cable meeting the requirements of NAVSEA Specification 7379173
- Cables designed to be integrated with OCC's Pierside connectors designed to meet NAVSEA 7379171 specification

## Features

- Dual jacketed, 12-fiber cable with 4 single-mode and 8 multimode fibers is designed to the NAVSEA 7379173 specification
- 2-, 4-, 6- and 8-fiber cables are designed with the NAVSEA 7379173 specification as a guide. See the Cable Characteristics section for cable performance requirements
- Available in composite single-mode and multimode fiber combinations, with fibers appropriate to the performance characteristics required by the application
- Compatible with Pierside connectors as defined in NAVSEA 7379171 (see OCC Pierside Connectors in the Harsh Environment Connectors, section 6.6b of the catalog)
- Polyurethane jacket provides durability in harsh environments encountered on ships and docks
- Polyurethane jacketed for abrasion, cut, crush, impact, and chemical resistance
- Second layer of aramid yarns provides the necessary strain-relief for multichannel hermaphroditic connectors
- Extremely strong, lightweight, rugged, survivable tight-buffered design
- Breakout cable design utilizes individual color-coded subcables that protect each individual fiber and have their own aramid for capture to the crimp on the terminus when desired
- Special jacket colors are available to distinguish (at a glance) from other Pierside cables and utilities
- Triple thickness fiber acrylate coating, three layers of aramid yarn, and three individual cable jackets provide the ultimate in fiber protection
- Suitable for daisy chain over-the-deck, on-the-pier, and through-the-ship nested ship deployments
- Helically stranded cable core for flexibility, deployment survivability and exceptional mechanical protection for the optical fibers
- Wide Temperature ranges for adverse conditions
- 2.0mm breakout subcables standard
- Compatible with OCC's Pierside hermaphroditic connectors in Section 6.7b



U.S. Navy photo by Mass Communication Specialist 2nd Class James R. Evans



## Applicable Standards

OCC Pierside cables meet or exceed the functional requirements of the following standards:

- NAVSEA Specification 7379173
- TIA-455 commercial and military requirements



 (5.5f) Pierside Cables

## Mechanical and Environmental Performance

Operating temperature	-55°C to +85°C
Storage temperature	-70°C to +85°C
Impact resistance	1,500 impacts
Crush resistance	2,200 N/cm
Flex resistance	2,000 cycles

## Cable Characteristics: Pierside

FIBER COUNT	DIAMETER MM (IN)	WEIGHT KG/KM (LBS/1,000')	TENSILE LOAD		MINIMUM BEND RADIUS	
			INSTALLATION N (LBS)	OPERATIONAL N (LBS)	INSTALLATION CM (IN)	LONG-TERM CM (IN)
2	11.3 (0.44)	112 (75)	6,400 (1,500)	1,200 (270)	17.0 (6.7)	11.3 (4.4)
4	11.3 (0.44)	112 (75)	6,400 (1,500)	1,200 (270)	17.0 (6.7)	11.3 (4.4)
6	12.2 (0.48)	125 (84)	6,400 (1,500)	1,200 (270)	18.3 (7.2)	12.2 (4.8)
8	13.6 (0.54)	153 (103)	6,400 (1,500)	1,200 (270)	20.4 (8.0)	13.6 (5.4)
12	14.5 (0.57)	168 (113)	6,400 (1,500)	1,200 (270)	21.8 (8.6)	14.5 (5.7)

Note: Multimode, single-mode and composite designs available

## Cable Outer Diameter Limits for Cable Plug Strain Relief

CONNECTOR PLUG TYPE	MINIMUM CABLE OUTER DIAMETER MM (INCHES)	MAXIMUM CABLE OUTER DIAMETER MM (INCHES)
CP-6	6.5 (0.256)	9.5 (0.374)
CP-8	11.0 (0.433)	13.7 (0.540)
CP-12	14.0 (0.551)	16.2 (0.639)

## Ordering Information

	<b>B</b>	<b>-</b>				<b>C</b>				<b>5</b>	<b>K</b>	<b>M</b>	<b>P</b>	<b>S</b>
Digit No:	1	2	3	4	5	6	7	8	9	10	11	12	13	14

- 1 – 2 Breakout Series Ultra-Fox Plus = **B -**
- 3 – 5 Fiber count: (see cable characteristics chart) = **002-012**
- 6 Jacket type: Polyurethane = **C**
- 7 – 9 Fiber type:  
Standard is 8 WST and 4 SLS = **ZBK**
- 10 Ultra-Fox Plus fiber with 900µm tight-buffer = **5**
- 11 Jacket color: Black = **K**
- 12 Rating: Military Cable Rating = **M**
- 13 – 14 Pierside Cable Construction = **PS**

**Example:** 12-fiber Pierside cable with C jacket, low water peak single-mode fiber, Ultra-Fox Plus, black jacket

<b>B</b>	<b>-</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>C</b>	<b>S</b>	<b>L</b>	<b>S</b>	<b>5</b>	<b>K</b>	<b>M</b>	<b>P</b>	<b>S</b>
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