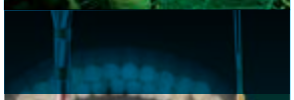
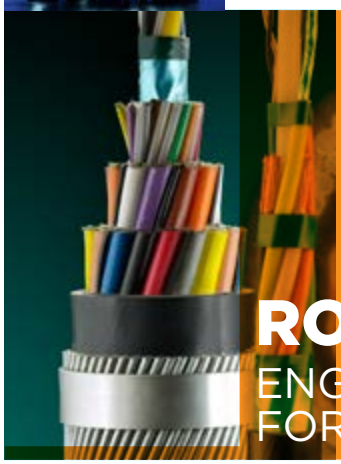
SEACON

DEUTSCH | Rochester Cable





ROCHESTER CABLES

ENGINEERED CABLE SOLUTIONS FOR HARSH ENVIRONMENTS

Complete Connectivity and Sensor Solutions for Commercial and Military Marine, Oil and Gas

- Oil and Gas Exploration and Production
- Defense
- Mining and Miscellaneous
- Oceanographic
- Subsea Telecommunications
- Umbilical and Tether

IS Rayfast

Official Distributor: IS-Rayfast

Contents

Taming Harsh Applications

Custom Cable Designs

Product Range

STEEL-LIGHT Cables

TE Components . . . TE Technology . . . TE Know-how . . .

AMP | Agastat | CII | Hartman | Kilovac | Microdot | Nanonics | Polamco | Raychem | Rochester | DEUTSCH
SEACON Phoenix | L.L. Rowe | Phoenix Optix | AFP | SEACON

Get your product to market faster with a smarter, better solution.

RUGGED PERFORMANCE AT ANY DEPTH

TE Connectivity's (TE) Rochester Cables brings advanced technology to the design and manufacture of cables for harsh environments. We develop cables built for the most rigorous applications helping you go deep, whether it's to the ocean floor, the bottom of a mine, or down an oil well.

Rochester Cables: Expertise that Runs Deep

Since its founding in 1794 as a manufacturer of ropes, Rochester Cables has evolved to become a recognized leader in the design and manufacture of electro-optical cables for a vast array of applications. Our cables are highly engineered to meet specific application requirements in such demanding industries as petroleum exploration and production, defense, oceanographic, and subsea applications.

Rochester STEEL-LIGHT optical cable was developed to meet the challenges posed by harsh environments and rigorous operational scenarios. Cables using the STEEL-LIGHT product meet the hydrostatic pressures encountered at full ocean depth and endure the mechanical stresses imposed during the repeated flexure associated with dynamic systems.

Taming Harsh Applications

Oil and Gas Exploration and Production

TE's Rochester Cables provides electro-optical products with proven quality and reliability for applications that include BOP umbilicals, seismic instrumentation and custom cables for harsh environments to depths of 6,000 meters. TE Rochester wireline products are used in logging, perforating, and downhole well applications worldwide. The hot, corrosive downhole environment is met through our expertise in high-temperature insulations, special copper alloys and anticorrosive alloys for armoring.

Defense

Naval organizations worldwide rely on our electro-optical range cables, surveillance cables, submarine towed array cables, helicopter dip sonar cables, and electro-optical cables for ROV salvage and recovery.

Mining and Miscellaneous

Single-conductor, coaxial, optical, and multiconductor TV inspection cables are designed to provide extended service life in harsh environments of TV inspection, fishing, and mining. Galvanized steel armors, aramid yarns, and durable thermoplastic materials provide the protection needed in pipe and sewer inspection applications. Net sounder coaxial cables for the fishing industry can withstand substantial loads. TE mining power and lighting cables have been approved by the Mine Safety and Health Administration (MSHA).

Oceanographic

TE's Rochester Cables are used in current-temperature-depth (CTD) cables, towed sonar cables, and ROV umbilical cables. Extended life is provided by use of custom-designed armor packages and STEEL-LIGHT fiber optic elements.

Subsea Telecommunications

TE nonrepeater products are tailored to meet industry needs for short-haul communications. Rochester fiber-optic elements are protected with a hermetically sealed copper tube that provides extended service in custom-designed configurations to meet depth and environmental demands.

Umbilical and Tether

We offer a full range of umbilical and tether cables to meet the widest range of subsea needs. See our Subsea Tether and Umbilical Cables brochure.

SEACON • DEUTSCH • Rochester - Complete Connectivity and Sensor Solutions for Marine, Oil and Gas

TE Connectivity (TE) is one of the leading sources of marine, oil and gas connectivity solutions in mission-critical and harsh environment applications. TE's marine oil & gas portfolio includes over 2,500 underwater electrical and fiber optic connectors and offers complete system solutions to give you a wide range of advanced connectivity options. TE's ever growing stable of products within the marine, oil and gas market includes SEACON dry and wet-mate products, DEUTSCH high voltage offshore module-to-module and umbilical to pump connectors, Rochester electro-mechanical and electro-optical cables and AST LVDT and rotary sensors.

Custom Cable Designs

Even with one of the most in-depth profiles of industry-leading products offered to market, we recognize that there are times when a “standard” product won’t deliver the performance your system requires. With over 200 years of experience in the creation of custom products for harsh environments, TE’s Rochester Cables has the experience to design and manufacture custom cables that deliver a product that will perform in harsh environments to your specific application requirements.

With the use of computer-aided design that allows reliable predication of characteristics such as cable torque, rotation, and elongation, TE’s Rochester Cables is technologically equipped to meet your toughest challenges with custom solutions. Sophisticated computer analysis allows us to model cable performance accurately, eliminating the requirement for expensive prototypes and lengthy test programs. Each cable is designed, developed, and manufactured to rigid specifications tailored to a specific application.

An example of our technical differentiation is our ability to offer smaller and lighter designs to market by using TE’s thin-wall and light-weight materials science technology, delivering all the performance of traditionally insulated cable conductors but with a smaller cable diameter and weight savings.

Talk to the experts in cables for harsh environments. The following are some of the major issues we can successfully address in custom cables.

Mechanical Performance

- Weight
- Length
- Hydrostatic Pressure
- Size
- Tensile Strength

Electrical Requirements

- Data Rates
- Signal Integrity
- EMC Requirements

Armor Packages

- Aramid Armor
- Single-Wire Armor
- Double-Wire Armor
- Triple-Wire Armor
- Alloy-Wire Armor

Environmental Performance

- Temperature Extremes
- Chemical, Fluid, and Oil Resistance
- Salt Resistance
- Hydrostatic Pressure

Cable Configuration

- Power
- Signal
- Coaxial
- Fiber Optic
- Composite

Fiber Packages

- Fiber-in-Steel Tube
- STEEL-LIGHT Fiber
- ELECTRO-LIGHT Fiber

Conductor Styles

- Thin-Wall Technology
- Standard-Wall Designs

Electro-Optic Tow Cables

A range of dynamic, steel-armored, electrical and optical cable solutions accommodate depths up to 6,000 meters for mine sweeping, antisubmarine warfare, sonar, and geophysical applications.

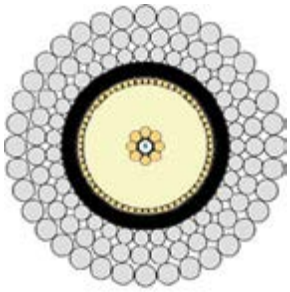
Our STEEL-LIGHT optical elements meet the challenges posed by harsh environments and hydrostatic pressures encountered at full ocean depths.

The cable constructions are designed to endure the demands of required tow strengths and communications, while minimizing diameter requirements. They are available both with and without ribbon fairings.

A302351

A302356

A303717



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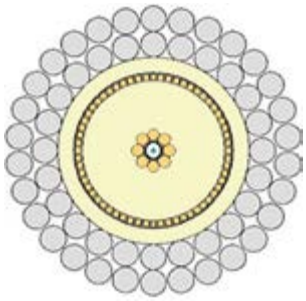

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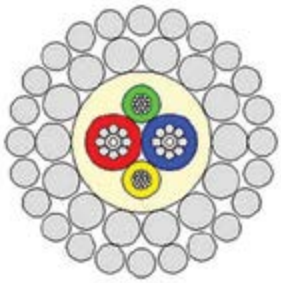

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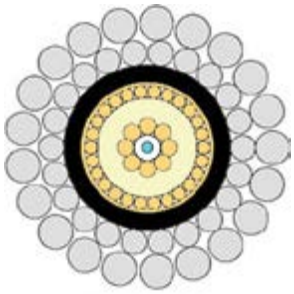


ORDERING INFORMATION

Part Number	Diameter		Breaking Strength		Weight in Water		Conductors	DC Resistance		Fibers
	mm	in	kN	lbf	kg/km	lb/kft		Ω/km	Ω/kft	
A302351	17.30	0.681	204.6	46,000	905	608	3	4.9	1.5	3 SMF
A302356	13.72	0.540	97.9	22,000	571	384	3	11.5	3.5	3 MMF
A303717	18.26	0.719	213.5	48,000	984	661	2	•	•	1 SMF
A303950	11.07	0.436	64.5	14,500	332	223	3	23.5	7.2	3 MMF
A303954	11.07	0.436	64.5	14,500	338	227	3	23.5	7.2	4 MMF
A304097	17.27	0.680	177.9	40,000	806	542	2	•	•	2 SMF
A305382	9.98	0.393	71.0	16,000	322	217	2	82.0	25.0	2 SMF
A305900	6.53	0.257	24.9	5,600	137	92	2	•	•	1 SMF

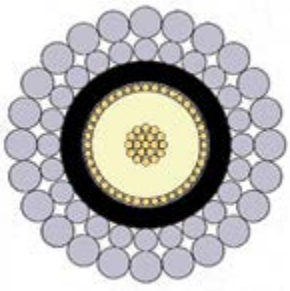
Side Scan Sonar Tow Cables

Our low-drag side-scan sonar cables are offered with both single coax and multiconductor configurations to interface with the tow fish.

The range includes double- or triple-armored versions, either jacketed or nonjacketed. The cables offer a high-strength solution for shallow and deep water search and recovery operations, as well as archaeological, marine construction, and route surveys. These cables are offered in a range of diameters with or without ribbon fairings to suit customer requirements.

A301301

A302799



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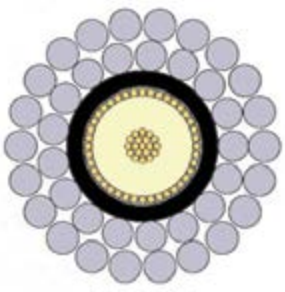
A303567

A303613



A390480

A390880

ORDERING INFORMATION

Part Number	Diameter		Breaking Strength		Weight in Water		Conductors	Zo	Coaxes
	mm	in	kN	lbf	kg/km	lb/kft		Ω/km	
A301301	12.65	0.498	89.0	20,000	448	301	3	30	3
A302799	11.43	0.450	71.2	16,000	379	255	0	40	1
A303471	13.84	0.545	24.5	5,500	112	75	4	35	4
A303567	13.34	0.525	86.7	19,500	504	339	6	35	5
A303613	11.00	0.433	85.0	19,100	388	261	0	45	1
A390480	12.17	0.479	84.5	19,000	469	315	4	35	4
A390880	22.35	0.880	204.6	46,000	1,254	843	18	74	1

Offshore Oil Production Cables (MUX and BOP)

Uniquely tailored for offshore oil production and exploration, our offshore production line includes BOP cables, MUX control umbilicals, seismic lead-in cables, and instrumentation and communication cables.

These high-performance armored cables are impervious to the rigorous environmental conditions of offshore drilling and oil production. A range of specialized constructions comprise both optical and electrical capabilities in a variety of diameters and strengths.

A304287

A304485

A304739

A304763

A304818

A304862

A305532

A305605

A390880

ORDERING INFORMATION

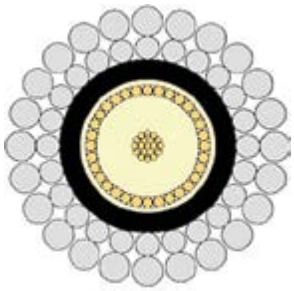
Part Number	Diameter		Breaking Strength		Conductors	Optical Fibers	Jacket
	mm	in	kN	lbf			
A304287	38.10	1.500	445	100,000	13	62.5/125/245	TPE
A304485	30.99	1.220	231	52,000	15	•	HDPE
A304739	30.99	1.220	107	24,000	15	•	HDPE
A304763	27.94	1.100	80	18,000	8	62.5/125/245	HDPE
A304818	38.10	1.500	276	62,000	28	•	PE
A304862	27.94	1.110	205	45,000	8	62/5/125/245	TPE
A305532	29.97	1.180	400	90,000	22	•	HDPE
A305605	27.94	1.10	98	22,000	16	62.5/125/245	HDPE
A390880	22.35	0.880	204.6	46,000	18	•	TPE

TV Inspection Cables

These robust cables are used with mobile closed-circuit TV inspection systems to explore subterranean sewer lines and storm sewers and are offered in multiconductor and armored coaxial constructions.

A300092

A301199



A301359

A304585

A304874

ORDERING INFORMATION

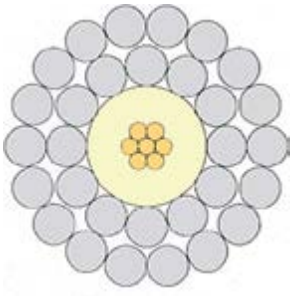
Part Number	Diameter		Breaking Strength		Weight in Water		Description
	mm	in	kN	lbf	kg/km	lb/kft	
A300092	15.11	0.595	29.4	6600	454	305	Multiconductor
A301199	7.37	0.290	30.2	6800	198	133	Armored Coax
A301359	13.92	0.548	8.9	2000	270	181	Multiconductor
A304585	11.18	0.440	16.9	3800	189	127	Multiconductor
A304874	6.53	0.257	23.1	5200	124	83	Armored Coax

Single-Conductor CTD and Instrumentation Cables

Our double-armored and single-conductor cables are tailored for CTD (current, tide, and depth) systems used to measure the physical properties of seawater.

The designs can also provide signal transmission for underwater sensors or light mooring tasks. Rochester CTD cables feature both small diameters and high strength to make them suitable for wave and tide recorders and for other instrumentation equipment.

A210100



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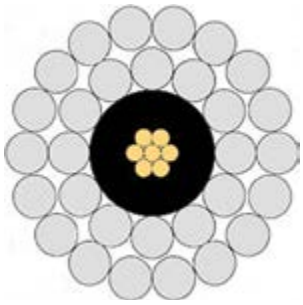

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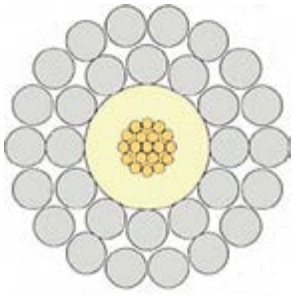

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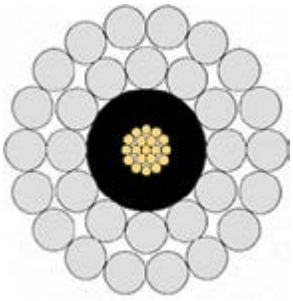

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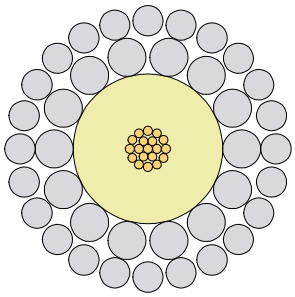

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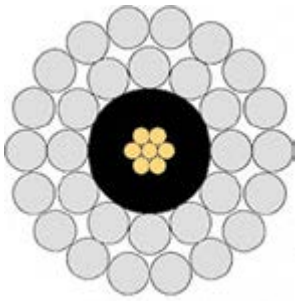


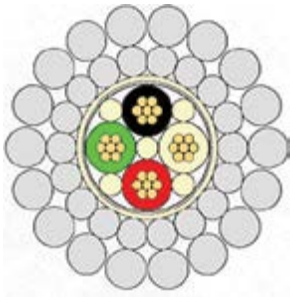
ORDERING INFORMATION

Part Number	Diameter		Breaking Strength		Weight in Air		Cdr. Resistance		Voltage Rating
	mm	in	kN	lbf	kg/km	lb/kft	Ω/km	Ω/kft	
A210100	2.56	0.101	4.4	1,000	8	19	82.7	25.2	600
A210124	3.12	0.123	6.7	1,500	40	27	82.7	25.2	700
A216314	8.03	0.316	49.8	11,200	272	183	9.5	2.9	1,800
A216375	9.53	0.375	64.9	14,600	376	253	9.5	2.9	2,000
A305265	11.43	0.45	845	19,000	494	331	9.7	3	2,400
A310255	6.40	0.252	28.0	6,300	170	14	23	7.0	2,400

Multi-Conductor Instrumentation Cables

These double-armored cables containing multiple conductors in various gauge sizes and constructions are customized for use in oceanographic exploration and are optimized for use in underwater instrumentation, signal transmission, and tow device applications.

A240185



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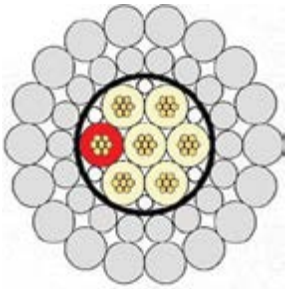

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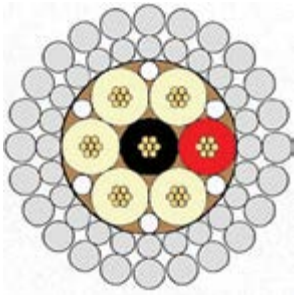

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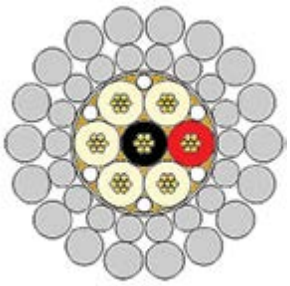

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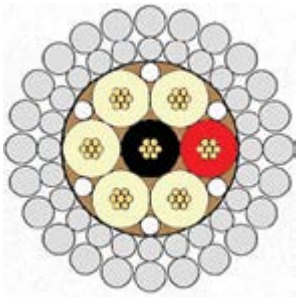

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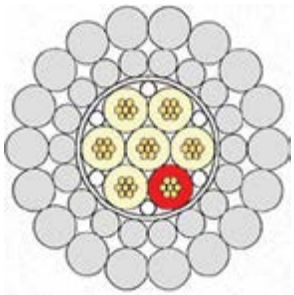


A301592

ORDERING INFORMATION

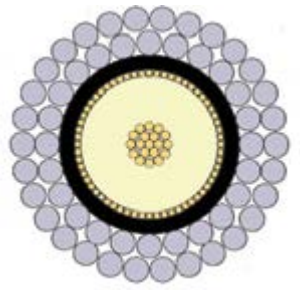
Part Number	Diameter		Breaking Strength		Weight in Air		Conductors	Voltage Rating
	mm	in	kN	lbf	kg/km	lb/kft		
A240185	4.72	0.186	14.7	3,300	89	60	4	400
A240250	6.35	0.250	25.8	5,800	159	107	4	600
A270250	6.35	0.250	25.8	5,800	161	108	7	500
A276374	9.45	0.372	56.9	12,800	362	243	7	600
A276422	10.82	0.426	81.4	18,300	464	312	7	1,000
A276463	11.7	0.462	81.4	18,300	485	326	7	1,200
A279319	8.28	0.326	48.9	11,000	272	183	7	600
A301592	8.89	0.322	43.1	9,700	269	181	3	500

Single and Cabled Coaxial Cables

Coaxial cables are integral for numerous oceanographic uses and provide various telemetry solutions.

Rochester net sounder coax cable for the fishing industry can withstand substantial loads. Offering rugged, superior performance and strength without sacrificing flexibility, these cables are also designed for use in shallow and deep tow applications and for helicopter dipping sonar. This range is offered in a variety of sizes containing either single or multiple coaxial elements, offered with or without ribbon fairings.

A301241



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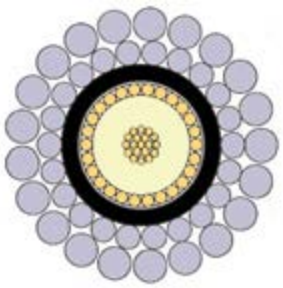

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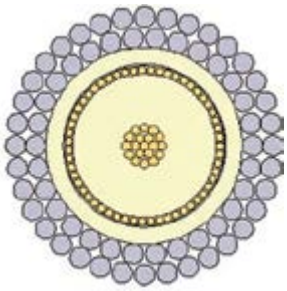

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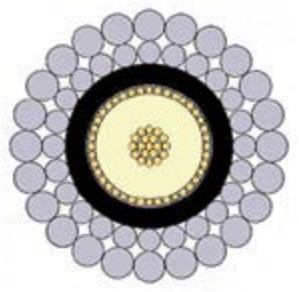

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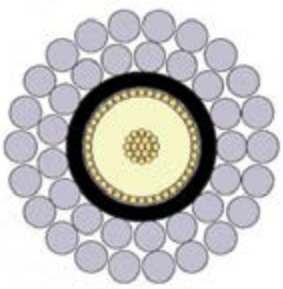

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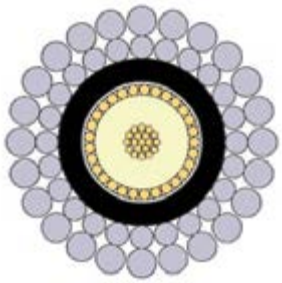

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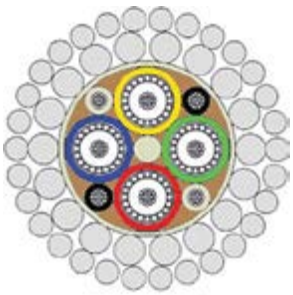


ORDERING INFORMATION

Part Number	Diameter		Breaking Strength		Weight in Water		Voltage Rating	Zo	Loop Resistance	
	mm	in	kN	lbf	kg/km	lb/kft		Ω	Ω/km	Ω/kft
A301241	17.27	0.680	177.9	40,000	823	553	3,000	45	6.7	2.1
A301243	8.99	0.354	48.9	11,000	255	171	1,000	47	30.9	9.4
A301301	12.65	0.498	89.0	20,000	448	301	1,000	30	N/A	N/A
A301521	14.10	0.555	89.0	20,000	494	332	3,000	50	N/A	N/A
A302799	11.43	0.450	71.2	16,000	379	255	1,900	40	16.7	5.1
A303613	11.00	0.433	85.0	19,100	388	261	1,500	45	22.4	6.8
A304874	6.53	0.257	23.1	5,200	124	83	1,800	42	52.5	16.0
A320327	8.18	0.322	42.7	9,600	222	149	1,200	39	33.5	10.2
A390480	12.17	0.479	85.0	19,000	469	315	600	35	66.6	20.3

Armored Mining Cables

Designed for lighting, communication, and power applications in mines, our range of flame-retardant mining cables are offered in a variety of configurations designed to withstand voltages of 600/1,000 VDC.

These cables have been approved for use in coal mines by the U.S. Department of Labor's Mine Safety and Health Administration.

A301435

A302687

A330555

A340555

A370555

ORDERING INFORMATION

Part Number	Diameter		Breaking Strength		Weight in Air		Description	Voltage Rating
	mm	in	kN	lbf	kg/km	lb/kft		
A301435	16.46	0.648	89.0	20,000	708	476	Three Coax, Three Conductors	1,000
A302687	14.10	0.555	42.3	9,500	490	329	Four 12 AWG Conductors	600
A330555	14.10	0.555	35.6	8,000	452	304	Three 14 AWG Conductors	600
A340555	14.10	0.555	35.6	8,000	436	293	Four 16 AWG Conductors	600
A370555	14.10	0.555	35.6	8,000	473	318	Seven 16 AWG Conductors	600

Plow and Umbilical Cables

Our extensive range of armored electro-optical cables is designed to deliver superior performance for subsea plow and trencher systems.

Features include sustainability to high loads. Specialized optical and conductor elements are tailored for data and video transmission in trenching applications, including continuous burial and backfill efforts.

A302467

A303955

A304267

A304472

A304493

A304562

A304613

A304822

A304835

A304982

ORDERING INFORMATION

Part Number	Diameter		Breaking Strength		Weight in Water		Power Conductors	Signal Conductors	Coaxes	Fibers
	mm	in	kN	lbf	kg/km	lb/kft				
A302467	38.10	1.500	498	112,000	746	501	6	3	–	6 SMF
A303955	30.48	1.200	271	61,000	598	402	3	–	–	3 SMF
A304267	43.64	1.718	596	134,000	3,768	2,532	32	16	4	7 MMF
A304472	36.32	1.430	449	101,000	2,838	1,907	13	4	–	6 SMF
A304493	45.62	1.796	645	145,000	4,392	2,951	15	3	–	9 SMF
A304562	45.52	1.792	845	190,000	5,193	3,490	20	4	1	7 SMF
A304613	65.38	2.574	1,014	228,000	8,367	5,623	34	–	–	8 MMF, 4 SMF
A304822	42.67	1.680	569	128,000	3,612	2,427	18	16	3	6 MMF
A304835	42.42	1.670	641	144,000	4,123	2,771	14	1	–	6 MMF, 6 SMF
A304982	42.10	1.658	623	140,000	4,271	2,870	12	4	–	4 SMF

STEEL-LIGHT Cables

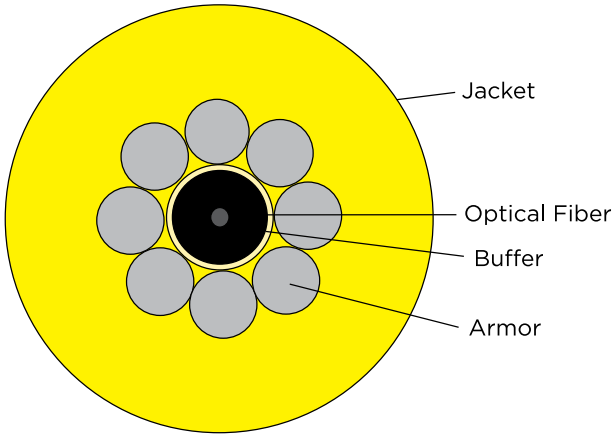
With an increasing focus on optical fibers for data transmission in undersea environments, additional attention must be given to creating robust optical assemblies without the unnecessary addition of weight. TE's Rochester STEEL-LIGHT and ELECTRO-LIGHT optical cables were developed to meet the challenges posed by these harsh environments and rigorous operational scenarios faced in subsea applications.

Cables using the STEEL-LIGHT and ELECTRO-LIGHT cable constructions meet the hydrostatic pressures encountered at full ocean depths and endure the mechanical stresses imposed during the repeated flexure affiliated with dynamic systems.

Both STEEL-LIGHT and ELECTRO-LIGHT cable constructions are available in a range of multi-mode and single-mode fibers and armor packages, together with a variety of jacket materials including polyethylene, nylon, and polyurethane.

STEEL-LIGHT Cables

The STEEL-LIGHT cable construction uses strands of plow steel concentrically arranged around the fiber buffer to provide protection to the fiber while maintaining flexibility. The steel strands are precisely sized to protect the fiber from breakage and attenuation-inducing hydrostatic pressures.



ELECTRO-LIGHT Cables

The ELECTRO-LIGHT cable construction uses strands of plain copper wires concentrically arranged around the fiber buffer to provide protection to the fiber. The copper can also be used as a cable conductor to allow composite cables to be designed with a smaller OD.

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