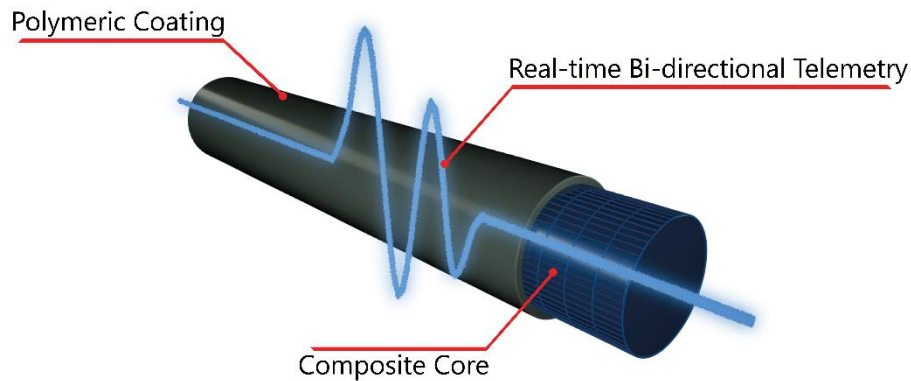


The Paradigm UltraLine® is a flexible, lightweight, low torque and low friction full composite wireline cable. It is based on high strength fibre and a high temperature resistant resin matrix with a polymer jacket. Designed for wireline intervention in long, highly deviated and horizontal wells, the UltraLine® offers surface communication via Paradigm's real-time 2-way communication with downhole ParaComm® telemetry tools.



Applications

- Pump-down perforating of unconventional well
- Long length perforating gun system
- Combined wireline and slickline well interventions
- Cased hole horizontal completions
- Extended reach wells
- Limited footprint sites

Benefits

- The only composite cable that can be conveyed with existing wireline winch units
- Reduced surface tensions
- Higher operational efficiency and reduced HSE risks
- Faster running speed by reduced friction and eliminating cable seasoning
- Reduced environmental risks
- Reduced maintenance and cost of operation

Features

- ParaComm® real-time 2-way communication
- Smooth low friction jacket
- Simple stuffing box pack-off with no grease injection for well control
- Reduced cable friction and drag to improve well access with increased overpull margins
- Light weight high strength-to-weight ratio
- No armour stranding or birdcage formation risk
- No corrosion by the well fluids
- Low cable maintenance
- Gas-blocked technology, preventing any gas migration through the cable to surface

Nominal Specifications – UltraLine®		
	Imperial	Metric
General		
Cable outer Diameter	0.25 inch	6.25 mm
Diameter variation	0.003 inch	0.076 mm
Cable core diameter	0.21 inch	5.30 mm
Jacket wall thickness	0.02 inch	0.525 mm
Cable coefficient of friction	0.20	
Cable length marking, interval	3.3 ft	1.0 m
Available lengths	Up to 35,000 ft.	Up to 10,670 m
Chemical resistance	In accordance with ISO 23936-1 and NORSOK M-710	
Service	Sweet, Sour	
Mechanical Properties		
Cable breaking strength, ends fixed	8,267 lbs	3,750 kg
Maximum suggested working load	3,307 lbs.	1,500 kg
Minimum sheave diameter	20 inch	508 mm
Cable stretch coefficient	2.30 ft / Kft / Klbs	2.56 m / km / 5 kN
Temperature rating	-40 to +300° F	-40 to +150° C
Pressure rating	up to 10,000 psi	up to 69 MPa
Cable weight in air	28 lb / kft	52 kg / km
Cable weight in fresh water	8 lb / kft	20 kg / km
Electrical Properties		
Transmission data rate	up to 70 bytes/second	
Core electrical resistance	3.39 Ω/ft	11.11 Ω/m

Performance and Weight Comparison to Other Well Intervention Cables.

The table below illustrates the superior downhole effective tension capacity at the cable head of the UltraLine®

Cable comparison										
Cable length in well	30000	ft	9144	m						
Type	Cable OD		Cable breaking strength ends fixed		Maximum working tension		Effective downhole tension in air		Effective downhole tension in water	
	inch	mm	lbs	kg	lbs	kg	lbs	kg	lbs	kg
UltraLine® 0.250"	0.250	6.35	8269	3750	3308	1500	2259	1025	2904	1317
UltraLine® 0.350"	0.350	8.89	17861	8100	7144	3240	5067	2298	6338	2874
UltraLine® 0.425"	0.425	10.80	28775	13050	11510	5220	8506	3858	10361	4699
Mono Conductor 0.224"	0.224	5.69	5600	2540	2800	1270	-50	-23	400	181
Mono Conductor 0.258"	0.258	6.55	7300	3311	3650	1655	-70	-32	620	281
Mono Conductor 0.322"	0.322	8.18	12000	5442	6000	2721	60	27	1110	503
Mono Conductor 0.425"	0.425	10.80	19500	8844	9750	4422	-330	-150	1410	639
Locked Wireline 0.323" Mono	0.323	8.20	16000	7246	10000	4535	4030	1828	5080	2304
Slick Wireline 0.359" Mono	0.359	9.12	8500	3855	5000	2268	-130	-59	770	349
Slick Wireline 0.332" Mono	0.332	8.43	10200	4626	6000	2721	1320	599	2460	1116
Slick Wireline 0.350" Coax	0.350	8.89	8500	3855	5000	2268	380	172	1610	730
Slick Wireline 0.451" Coax	0.451	11.46	18700	8481	11000	4989	2180	989	4250	1927
Swabline 0.312"	0.312	7.92	16200	7347	8100	3673	438	199	2858	1296