

SPECTRUM® Real-Time Coiled Tubing Services

INTEGRATING FIBER OPTIC AND ELECTRIC COMMUNICATION AND POWER



SPECTRUM® Electric and Fiber Optic Real-Time Coiled Tubing

SPECTRUM® service is a step change in the industry, integrating fiber optic and electric communication and power. The system is fully compatible with wireline and mechanical tools, offering unlimited flexibility in diagnostic, design, and delivery of the operations.



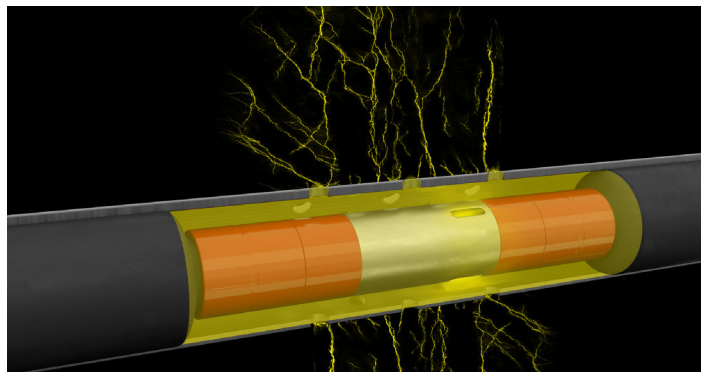
SPECTRUM® 360 Real-Time Camera

SPECTRUM® 360 real-time camera is the industry's first flow-through, multi-side-view camera, providing downhole visualization of well intervention services, and allowing for an unprecedented level of diagnostic capability and validation of operational objectives.



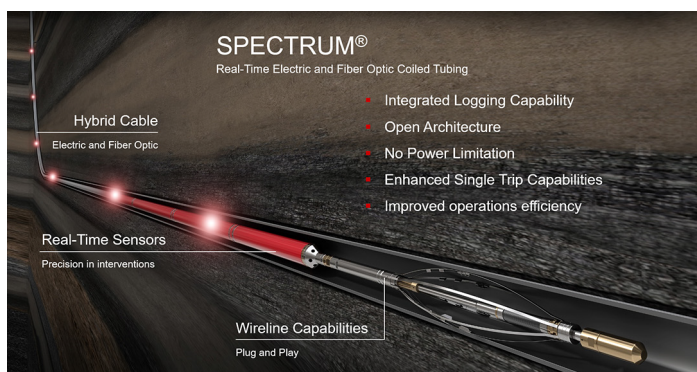
SPECTRUM® e-MLT Electric Multilateral Tool

The SPECTRUM® e-MLT offering is a multilateral entry tool designed to be run with the SPECTRUM service suite. This tool enhances the reliability of multilateral entry by enabling independent control over the functions of orientation and kick-over. Multiple laterals may be accessed in a single run, as the orientation can be adjusted in real time.



SPECTRUM® e-IP Electric Inflatable Packer

The SPECTRUM® e-IP packer is an inflatable isolation tool designed to be run with the SPECTRUM service suite. A unique, electric actuation system enables independent control of the flow path throughout an operation to accommodate customized treatment designs. Direct control of the flow path allows for easy selection between inflation, testing, circulation, and squeeze modes.

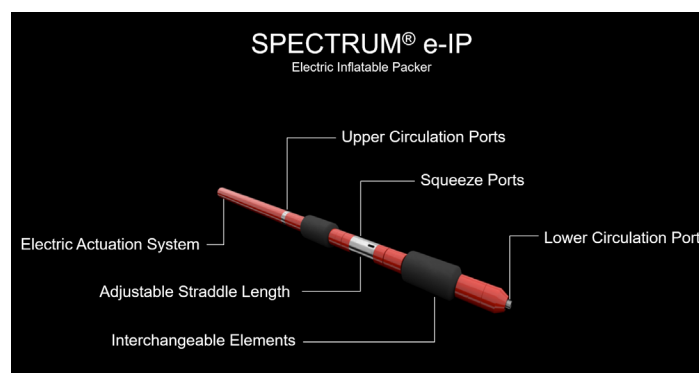
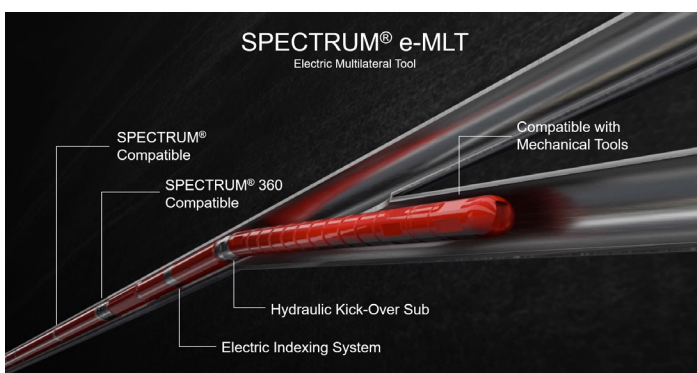


SPECTRUM® FUSION Electric and Fiber Optic Real-Time Coiled Tubing

Available sizes	2¼ in.	3⅝ in.
Maximum pump rates (clean fluid)	4 bpm	8.3 bpm
Maximum pump rates (abrasive fluid)	1 bpm	3.6 bpm
Tensile strength	45,000 lbf	60,000 lbf
Torque	800 ft-lb	2,800 ft-lb
Rating (pressure/temperature/shocks)	15,000 psi / 350°F / 1,000 G	
Length	12.5 ft	13 ft
Ball drop	⅞ in.	1 in.
Cable disconnect	Yes	Yes

SPECTRUM® 360 Real-Time Camera

Available sizes	2¼ in.	3⅝ in.
Maximum pump rates (clean fluid)	4 bpm	8.3 bpm
Tensile strength	45,000 lbf	60,000 lbf
Torque	800 ft-lb	2,800 ft-lb
Rating (pressure/temperature/shocks)	Up to 15,000 psi / 250°F / 10 G	
Length	4.6 ft	4.5 ft
Telemetry mode		Real time



SPECTRUM® e-MLT Electric Multilateral Tool

Available size	2¼ in.
Maximum pump rates (clean fluid)	2.2 bpm
Tensile strength	40,000 lbf
Compressive strength	10,000 lbf
Rating (pressure/temperature)	15,000 psi / 350°F
Shocks	1,000 G
Length	6.9 ft
Ball drop	⅞ in.
Cable disconnect	Yes

SPECTRUM® e-IP Electric Inflatable Packer

Chassis outside diameter (OD)	2¼ in.
Maximum pump rates (clean fluid)	2.2 bpm
Tensile strength	45,000 lbf
Compressive strength	15,000 lbf
Rating (pressure/temperature)	15,000 psi / 300°F
Element run OD	2.25 / 2.63 / 3.00 / 3.50 in.
Maximum expansion ratio	1:3
Element material	HNBR
Differential pressure rating	Up to 15,000 psi

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

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