



# CALDON LFM Ultrasonic Flowmeter Products

High performance ultrasonic flowmeter,  
delivering a rapid return on investment



# CALDON LEFM Ultrasonic Flowmeter Products

Our CALDON\* brand's Leading Edge Flow Measurement (LEFM\*) products and systems utilize state-of-the-art transit time ultrasonic technology. When liquid is flowing in a conduit, a sound pulse transmitted across the conduit in the direction of flow will travel faster than a pulse transmitted against the direction of flow. The difference in the transit times of two such pulses is proportional to the velocity of liquid in the conduit.

Caldon, Inc. was a well-respected supplier, with more than 40 years of experience in transit time measurement, when it was acquired by Cameron in 2006. Since the acquisition, Cameron has expanded the CALDON ultrasonic product offering to provide cost-effective solutions for a wide range of measurement applications. Primary industries served by Cameron ultrasonic products include nuclear, petroleum and gas, hydroelectric and water management, fossil fuel, and defense.



1965	First LEFM for Defense on Ethan Allen Class Submarines
1970	First LEFM for Hydroelectric Penstocks
1975	First LEFM Installed on Petroleum Application First LEFM for Nuclear Reactor Coolant
1978	First LEFM for Nuclear Power Megawatt Recovery
1985	First Eight-Path LEFM
1995	First MIL-Spec LEFM First Nuclear LEFM External System
1999	First LEFM for Power Uprate in Nuclear Power Plant First Line Watch Leak Detection System on Jet Fuel
2001	First LEFM Pipeline Interface Detector First LEFM for Custody Transfer of Petroleum
2003	First LEFM for Custody Transfer of Petroleum Products in US
2005	First LEFM for Liquefied Natural Gas (LNG)
2009	First Reduced-Bore LEFM for Heavy Crude Oils
2010	First LEFM 380Ci Installed on Natural Gas Pipeline



The Cameron Ultrasonics Technology Center is located in Pittsburgh, PA. This 40,000-ft<sup>2</sup> (3716-m<sup>2</sup>) facility houses administration, sales, engineering, projects, manufacturing, customer support, an education/training center, and an oil flow calibration laboratory for LEFM ultrasonic products and systems. This modern facility, built in 2007, is located 10 minutes from the Pittsburgh International Airport and demonstrates our commitment to continuously improve CALDON services and technology.



### Nuclear and fossil fuel power plants

- LEFM CheckPlus C and CheckPlus M systems
- LEFM 2010FE external systems
- LEFM 2010RCT external reactor coolant temperature
- LEFM 2010SG external steam generator blowdown
- LEFM 2010MSE external moisture separator drain flow
- Line watch gas void detector
- Flow watch V meter
- LEFM 280F feedwater flow meter



### Petroleum and gas products

- LEFM 220Ci, 240Ci, and 280Ci flowmeters
- LEFM 340Ci, and 380Ci gas flowmeters
- LEFM 280CiLT-R LNG flowmeter
- LEFM 240CiRN and 280CiRN reduced-bore flowmeters
- Pipeline interface detectors



### Hydroelectric and water management

Transducers, cables, and electronics for multi-path flow measurement are used in pipes, penstocks, tunnels, and open-channel applications.



### The Cameron Hydrocarbon Calibration Laboratory

A key to the success of CALDON products is our Hydrocarbon Calibration Laboratory in Pittsburgh, Pa. All CALDON LEFM 200 series ultrasonic flowmeters are calibrated at this world-class facility, which has the broadest capability for oil calibrations in North America. Each meter is calibrated over a Reynolds number range that corresponds to the actual operating conditions. This ensures the meter calibration is completely transferable to the field without the need for in-situ verification, which simply means improved real-world performance. The laboratory is accredited to ISO 17025 and is traceable to international standards. Uncertainty has been qualified and verified by VSL.



# CALDON LEFM Ultrasonic Flowmeter Products



[cameron.slb.com/ultrasonicmeter](http://cameron.slb.com/ultrasonicmeter)

\*Mark of Schlumberger  
Other company, product, and service names  
are the properties of their respective owners.  
Copyright © 2016 Schlumberger. All rights reserved. IMS-1035—ML308 Rev 1

 **CAMERON**  
A Schlumberger Company