

# VeraCAL Calorimeter

Flare monitoring solution with continuous NHV measurement and remote monitoring.

## FLARE SYSTEM SOLUTION

The VeraCAL flare system contains a JP3 gas analyzer, a sampling system and communications to enable convenient flare monitoring to comply with OOOOb/c requirements. The system comes on a mobile cart which can be moved via wheels, forklift, or hoist to easily move from site to site. The cart requires 120V, 20Amp power and it is equipped to supply a heated sample bundle for attaching to the flare line (not included). Designed to set up on site, take the required data for 14 days and then be moved to the next site.

## FIELD ROBUST

The VeraCAL system is Class I Div 2 certified to accommodate site requirements. It is robust to field conditions, including extreme temperatures, impervious to dust and vibration tolerant.

## REMOTE MONITORING MEANS NO SITE VISITS

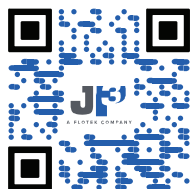
The VeraCAL flare system takes continuous Net Heating Value and carbon speciation data and can be monitored remotely so no site visits are required for the duration of the test. This reduces cost and increases safety since techs do not have to be sent out to each site twice a day to pull samples.

## CONTINUOUS MONITORING REDUCES RISK

Continuous monitoring avoids the risks associated with pulling bad, non-representative, or incomplete samples. Hourly averaging is allowed for continuous monitoring data sets reducing the impact of NHV spikes/dips.

## BUILT IN SAMPLING SYSTEM

The VeraCAL flare system has a built in sampling system to accommodate low pressure and variable pressure flare lines. The system is also heated to a constant 60C to comply with the OOOOb/c regulatory requirements and ensure gas phase stability.



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# VeraCAL System Specifications

## APPLICATIONS

FLUID STREAMS	<ul style="list-style-type: none"><li>Flow cell read points: Verax SSG - 1 integrated flow cell</li><li>Type: Natural Gas, Flare Gas, Field Gas, Vent Gas, and many others.</li><li>Upstream, Midstream, and Downstream applications</li><li>Phase: Gas</li></ul>
PROPERTY ANALYSIS	<ul style="list-style-type: none"><li>Physical Properties: NHV (Net Heating Value), Temperature, Pressure</li><li>Composition: ASTM D1945, GPA 2261, GPA 2286; others by request</li></ul>
SAMPLE SYSTEM	<ul style="list-style-type: none"><li>Included: Sample line, pump, regulator, sample collection cylinders</li></ul>
CALIBRATION GAS	<ul style="list-style-type: none"><li>None Required</li></ul>
VALIDATION GAS	<ul style="list-style-type: none"><li>Sealed reference cell included</li></ul>
LINE PRESSURE	<ul style="list-style-type: none"><li>0-140 psig; higher pressure options available on request</li></ul>
LINE TEMPERATURE	<ul style="list-style-type: none"><li>Set to 60C</li></ul>
RESPONSE TIME	<ul style="list-style-type: none"><li>1 min per analysis point</li></ul>
DETECTION METHOD	<ul style="list-style-type: none"><li>NIR spectroscopy optical calorimeter with on-line bypass flow cell</li></ul>

## ELECTRICAL

INPUT POWER	<ul style="list-style-type: none"><li>120 VAC / 20A</li></ul>
COMMUNICATIONS	<ul style="list-style-type: none"><li>MODBUS RTU over TCP or Serial (others available upon request)</li><li>4.3" Touchscreen Color Display (480 x 272)</li></ul>
I/O	<ul style="list-style-type: none"><li>3x 4-20mA Analog Input, 1x RTD input</li><li>Optional analog I/O unit (4x 4-20mA A/O, 2x D/I, 2x D/O)</li></ul>

## PHYSICAL

ENCLOSURE	<ul style="list-style-type: none"><li>NEMA 4X IP 66, Painted 304 Stainless Steel</li></ul>
DIMENSIONS	<ul style="list-style-type: none"><li>36" x 36" X 56"</li></ul>
WEIGHT	<ul style="list-style-type: none"><li>360 lbs</li></ul>
AMBIENT CONDITIONS	<ul style="list-style-type: none"><li>-4°F to 122°F ( -20°C to 50°C)</li><li>Sunshade recommended if &gt;90°F (32°C)</li></ul>
CLASSIFICATION	<ul style="list-style-type: none"><li>Enclosure: Class I Division 2, A-D, T4 Class I Zone 2, Group IIC, T4 Certified to UL 61010-1 Certified to CAN/CSA C22.2#61010-1-12 Conforms to ISA 12.12.01 Conforms to CSA C22.2#213</li><li>Flow Cell: Intrinsically Safe / Class I Division 1 / Zone 1 CRN for AB, BC, SK and ON</li></ul>