

QFT2™

Mud Logging Fluorometer



Overview

Texaco patented and developed the Quantitative Fluorescence Technique (QFT) introduced in the early 1990s as a well-site method to determine the fluorescence of crude oil extracted from the sample. QFT was a substantial improvement over the visual technique for detection of oil in drill cuttings or cores but still provided only a relative measure of oil in the sample.



Further development resulted in an improved method called QFT2. QFT2 involves a two-point fluorescence measurement that yields estimates of both absolute oil quantity (weight % oil) and oil type (API gravity). The speed, accuracy and ease of application make QFT2 a practical tool for the determination of oil concentration and API gravity at the well-site.

The Fluorometer

Working closely with Texaco, Turner Designs customized the 10AU-015-CE Field Fluorometer specifically for the QFT2 application. Designed for ease-of-use even in harsh environments, it is dust-proof and very forgiving of marginal power sources. It can be used with 12 VDC as well as 115 VAC or 230 VAC.

The 10AU-015-CE is not only rugged, but also accurate and easy to use. For use with QFT2, Turner Designs customized the optical components to enable a licensee to test the full range of oil concentrations normally encountered in drill cuttings accurately and without the labor and error involved in dilutions and mathematical calculations.

Simply check the calibration of the fluorometer with the prepackaged solution while the fluorometer display leads you through the calibration routine. Adjust the fluorometer, if necessary, and begin testing your samples. Testing is as simple as adding the solution to the fluorometer and reading the result from the display. An emission filter switch on the front panel of the instrument allows you to obtain two fluorescent readings per sample to calculate the quantity and quality of oil present.

Making the fluorometer even more trustworthy, the microprocessor monitors numerous internal functions and will sound a warning in the event of a malfunction such as a burned-out lamp. Moreover, the internal diagnostics of the fluorometer will tell you what is wrong with the fluorometer through diagnostic screens.

QFT2 Highlights

- Exceptional Sensitivity
- Automatic or Manual Ranging
- Analog and Digital Output
- Easy to Read LCD Display
- Now 20% Lighter!

Advantages of QFT2

While the procedure of visually observing fluorescence on drill cuttings is useful, there are several significant limitations. Fluorescence emitted from certain light oils and condensates is not visible to the human eye and, therefore, cuttings from such oils will appear nonfluorescent, which may cause them to be discounted. Secondly, observing fluorescence by the human eye is subjective and what looks like significant fluorescence to one person may look insignificant to another. Finally, there are non-petroleum materials in drill cuttings that fluoresce and the human eye can often mistake this fluorescence for oil. QFT has been run on hundreds of wells and its value is well documented. The new QFT2 System not only supplies information on the amount of oil present, but also the character of the oil. Texaco licenses this technique to interested parties.

Reliable Instruments for an Unreliable World

QFT2™

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QFT2 Electrical Specifications

Light Source	Clear Quartz Lamp (4 watts, 8000 hours lamp life)
Detector	PhotoMultiplier Tube; (300-650 nm)
AC Power	100-130 V; 200-240 V, 50/60 Hz, 30 watts
DC Power	11-16 V; 2.5 amperes
Digital Output	100% ASCII via RS-232 at 4800 or 9600 bps
Analog Output	Full scale voltage: 0.1, 1, 2, or 5 volts

QFT2 Physical Specifications

Weight	12.6 kg (28.5 lbs)
Height	24 cm (9.45 in)
Width	55 cm (21.65 in)
Depth	34 cm (13.39 in)
Operating Temperature	0-55° C, 32-131° F (ambient)

System Requirements

Use of the QFT2 System requires a Turner Designs Mud logging Fluorometer, 386 PC with RS232, VGA graphics (color preferred), DOS 3.0 or better, 256K of memory, and QFT2 Data Logging Program.

Ordering Information

BASE INSTRUMENT W/ WATERTIGHT CASE	PART NUMBER
QFT2 Mud Logging Fluorometer	10AU-015-CE

RECOMMENDED ACCESSORIES	PART NUMBER
Injector Assembly	10-AU-145
1 mm Continuous-Flow Cuvette System Assembly	10-AU-141
Clear Quartz Lamp	10-046
254 nm Filter - Interface	034-0860
1 N.D. Filter	10-032
European Line Cord (for 230 VAC)	046-0150
Fuses, DC, 4 AMP, International, 5 each (for 230 VAC)	10-AU-064

OPTIONAL ACCESSORIES	PART NUMBER
Fluid Handling Spares Kit	10-AU-165
Syringe (for sample injection)	10-AU-155
NVRAM Replacement Kit	10-AU-460
Desiccant Replacment Kit	10-023
Transport Case	10-AU-060
12 VDC Power & Signal Cable w/ Clips	10AU-810

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