



TM63

Spectrophotometer

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We have upgraded existing software and hardware. The result is a **new** instrument capable to read lower value than our previous models, a requirement as the specification is getting ever more strict.

It is specially designed to work alongside your existing testing work instructions. Consequently, for the successful use of the kit, there becomes no need to learn new chemical techniques and no need to purchase additional expensive chemical reagents and laboratory glassware.

With this in mind, the kit is equally useful to both inexperienced users, who have no prior knowledge of how to test a wall wash sample and experienced users.

In all cases, the test sample is compared against a reference sample that is assigned a reading of ZERO units, to create a result that is effectively the *difference* between the two samples.

With respect to the testing of methanol wall wash samples, this has the added benefit of allowing an operator to carry out a successful wall wash analysis, even if the methanol is slightly contaminated to start with.

There is no need to prepare calibration standards at all, either to check against a test sample or to check a particular program. All calibration data is stored in the memory of the spectrophotometer. The whole instrument may be recalibrated in a matter of minutes though, using a very straightforward procedure that is well documented with the instrument operating instructions.

Quality standards of bulk chemical cargo have increased dramatically over the past 10 years, which is reflected in the ever more demanding inspections, loading and discharging quality control specifications.

Chemical cargo suppliers, receivers and inspection companies now routinely rely on state of the art analytical laboratory instrumentation to control quality specification.

The TECO portable laboratory test kit addresses this problem in the form of a fully portable, purpose built, visible spectrophotometer that is especially designed to be used by personnel not familiar with using instrumentation of this nature. The spectrophotometer is supplied with a unique software package that enables the kit to determine the following key analytical tests, in line with the appropriate ASTM standards:



- APHA Colour according to ASTM D 1209
- Hydrocarbon according to ASTM D 1722
- Potassium Permanganate Time Test in accordance with ASTM D 1363
- Inorganic Chloride by standard acidified silver nitrate
- Chemical Oxygen Demand (COD)

Tests that are reliably accepted in the shipping industry as being the essential methanol wall wash test specifications.

Furthermore, the nature of the instrument is such that it can be readily adapted to incorporate new software, relating to new and updated programmes.

Dual Display

A customised Liquid Crystal Display gives simultaneous readout of wavelength and %Transmittance, Absorbance or Concentration. Concentration can be found by calibration to a standard or by direct factor entry. Error messages, prompts, mode indication and a choice of concentration units are presented in an easily understood format.

Ease Of Use

The simple keypad layout and operating protocols are designed to enable reliable operation by unfamiliar users. Photometric calibration, including 0% Transmittance is performed by a single key press.

Comprehensive Specification

The TECO Spectrophotometer boasts an impressive optical performance for a product of this type. Stray light is minimised by the automatic activation of internal filters, whilst the narrow 10nm bandwidth provides the high degree of selectivity essential for most analytical applications. A precision stepper motor gives excellent positional control of the optical grating ensuring wavelength selection is both accurate and highly repeatable.

Fully GLP Compliant

The TECO product is designed and manufactured under stringent quality control conditions in an ISO 9001 environment. The TECO Spectrophotometer is supported by traceable calibration standards to provide the on-going assurance of accuracy required by Good Laboratory Practice (GLP). A wavelength calibration routine is performed at switch on and a 0%T setting is performed automatically during all calibration routines. This product complies fully with EEC and US directives relating to ESD/EMC emission and susceptibility.

Full Interfacing Capability

There is full RS232 interfacing for connection, via industry standard connectors to printer or PC. Results can be downloaded by a single touch of the print key. The bi-directional interface also allows remote interrogation and control of the TECO Spectrophotometer. An analog output is provided for connection to a chart recorder.

Specification

Wavelength:

Range	320 - 1000nm
Resolution	1nm
Accuracy	±2nm
Bandwidth	8nm

Absorbance

Range	-0.300 to 1.999A
Resolution	0.001A

Transmittance

Range	0 to 199.9%
Resolution	0.1%
Stray Light	<0.5% @ 340nm
Photometric Accuracy	±1%

Concentration

Range	-300 to 1999 Concentration
Resolution	0.1 / 1

Units	ppm, mg/l, g/l, M, %, blank
Factor	0 to 999.9, 1000 to 9999
Photometric Noise Levels	<1%
Photometric Stability	1%/Hour after warm-up
Readout	Custom Liquid Crystal Display
Outputs	Analog (0 to 1999mV) / RS232 serial port
Light Source	Tungsten Halogen 20W 12V
Input Voltage	115/230V AC -20% +10%
Input Power	<50W
Size	365(w) x 272(d) x 160(h)mm
Weight	6Kgs