Chapter 1

OMA-206-P Introduction

Introduction:

The OMA-206-P is a portable diode-array fiber-optics spectrophotometer, continuously measuring the absorbance spectra of the given sample. It is constructed of a light source, a dispersion device for selecting a particular wavelength, a sample area, and a detector. The OMA uses a xenon light source, a holographic grating to disperse the light according to its wavelength, a cuvette that contains the sample to be measured or the blank (zero) sample, and a diode array detector which converts the light intensity into electrical signal.

A full spectrum is continuously measured and analyzed, via a multi wavelength method, to give the composition of the stream.

The OMA-206-P is designed to address on-line applications that require cost effective, accurate, and continuous concentration monitoring. A simple touch-screen based user interface is ideal for single and multi component analysis and allows for quick setup and calibration.

Wavelength ranges from 200-800 nm are continuously and instantaneously monitored by a diode array spectrophotometer with 1024 elements. A nonvolatile memory section of the analyzer contains the calculation method, wavelength ranges, and the name of the analyte to be displayed on the screen.

The OMA-206-P is housed in a weather resistant ruggedized case. The case is IP67, MIL C-4150J, STANAG 4280, and ATA 300 certified. Two fiber optic cables are used to conduct light to and from the cuvette, where the samples are measured.

The zeroing process is manual. The user blanks the analyzer on a cuvette full of zeroing solution then inserts a sample. A button on the touch screen is pushed to store the zero sample and a the analysis.

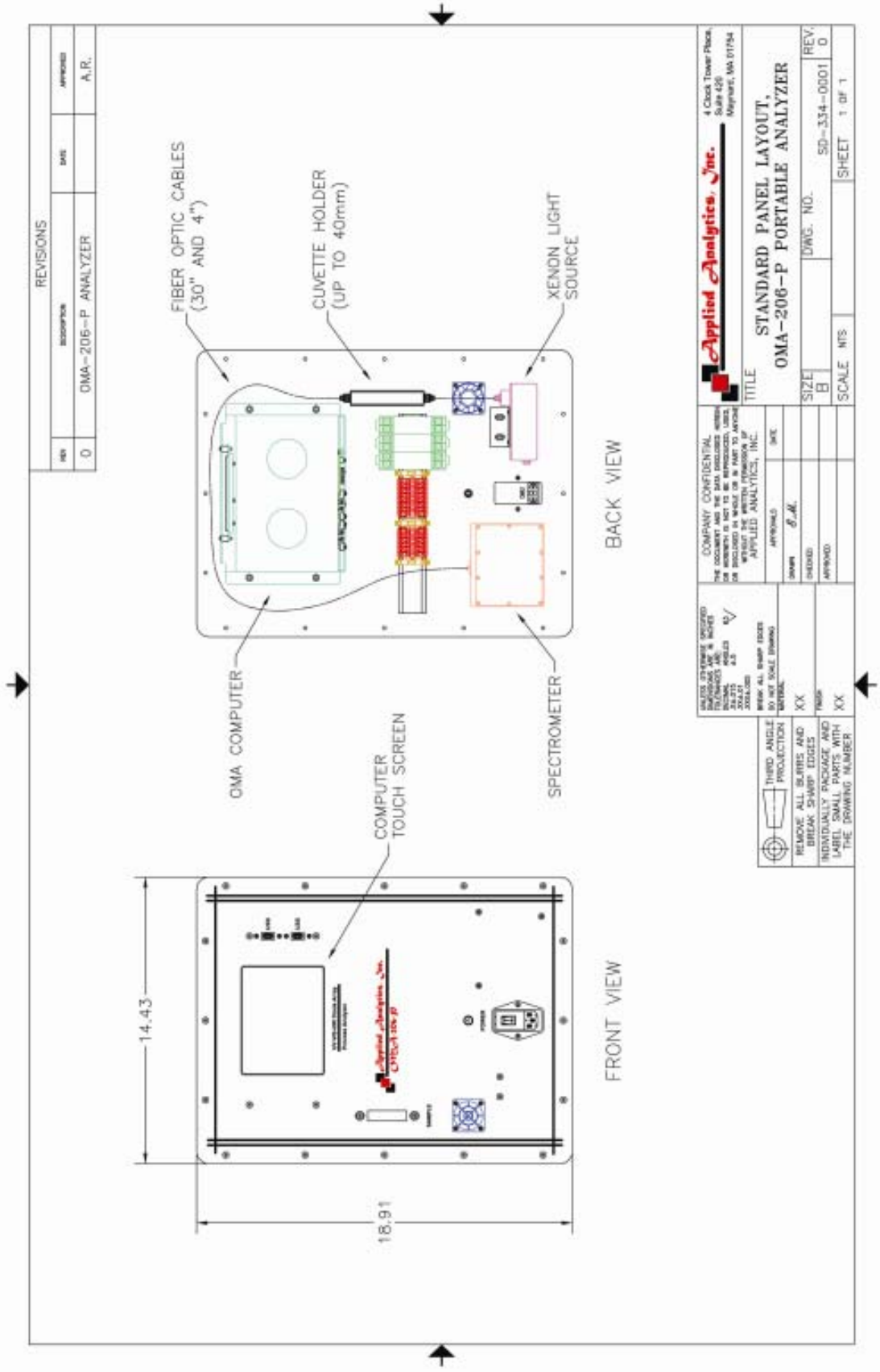
The measurements and analysis are continuous.

Note: Instructions in this manual regarding Auto zero should be ignored since the OMA-206-P does not include a sampling system.


Applied Analytics, Inc.

OMA-206-P Specifications

Analyzer	
Analyzer type	OMA-206-P portable spectrophotometer
Wavelength range	190-800nm
Slit Width	1nm
EP resolution	>1.6 toluene in hexane, ratio absorbance at 269nm / 266nm
Wavelength Accuracy	<+-0.5nm (NIST 2034)
Wavelength reproducibility	<+-0.04nm (NIST 2034)
Photometric noise	<0.002AU 32 scans at 0 AU at 250nm
Photometric stability	<0.002AU/h at 0AU at 340nm +-10C
Operating conditions	
Temperature	0^0 to 55^0 C (32^0 to130^0 F)
Display	1/4" VGA , NEMA 4 touch screen LCD display (340x240 pixels)
Power	80 to 240 Volts AC; 40 to 60 Hz ; 20 W
Analyzer Dimensions	16"(H)x14"(W)x8"(D)(41x36x20cm)
Area Classifications	IP67, MIL C-4150J, STANAG 4280, and ATA 300 certified


REVISIONS
REV
DESCRIPTION
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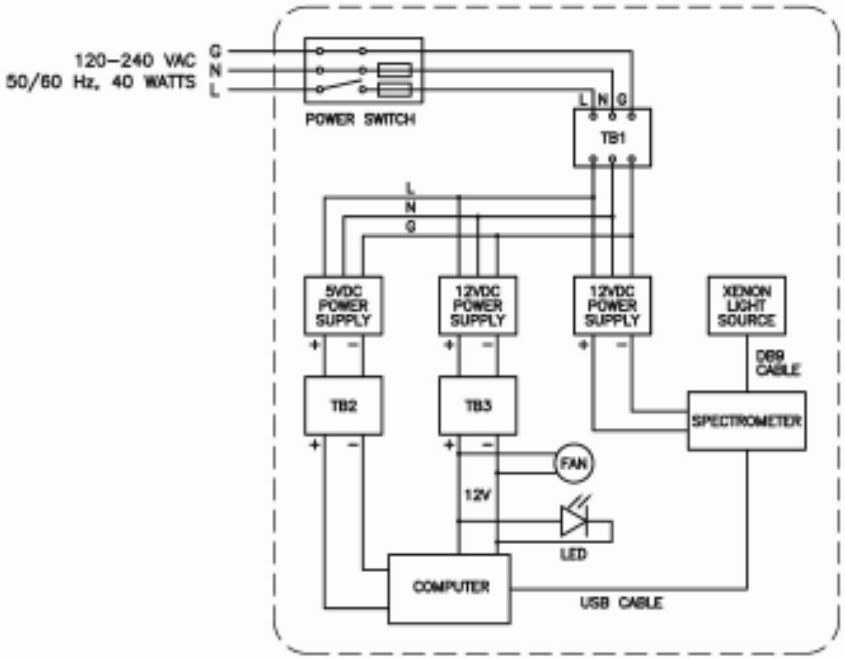
OMA-206-P ANALYZER
A.R.
FIBER OPTIC CABLES (30" AND 4")
CUVETTE HOLDER (UP TO 40mm)
XENON LIGHT SOURCE
BACK VIEW
OMA COMPUTER
SPECTROMETER
COMPUTER TOUCH SCREEN
14.43
18.91
FRONT VIEW
THIRD ANGLE PROJECTION
REMOVE ALL BURRS AND BREAK SHARP EDGES
INDIVIDUALLY PACKAGE AND LABEL SMALL PARTS WITH THE DRAWING NUMBER
COMPANY CONFIDENTIAL
APPLIED ANALYTICS, INC.
Applied Analytics, Inc.
4 Clock Tower Place, Suite 425
Maynard, MA 01754
TITLE
STANDARD PANEL LAYOUT, OMA-206-P PORTABLE ANALYZER
SIZE
B
DWG. NO.
SD-334-0001
REV.
0
SCALE NTS
SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	ELECTRICAL DIAGRAM		A.R.



OMA–206–P PANEL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
DECIMAL .X±.015 .XX±.01 .XXX±.005
ANGLES ±.5
63
BREAK ALL SHARP EDGES
DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

REMOVE ALL BURRS AND BREAK SHARP EDGES

INDIVIDUALLY PACKAGE AND LABEL SMALL PARTS WITH THE DRAWING NUMBER

MATERIAL XX

FINISH XX

APPROVALS		DATE
DRAWN	E.M.	
CHECKED	V.J.	
APPROVED	A.R.	

Applied Analytics, Inc.
4 Clock Tower Place, Suite 420
Maynard, MA 01754

TITLE
ELECTRICAL DIAGRAM, OMA–206–P PORTABLE ANALYZER

SIZE	DWG. NO.	REV.
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SCALE XX SHEET 1 OF 1