

## ORGANIC POLLUTANT MONITOR **OPSA-150**

COD monitoring by UV absorption

Organic Pollutant Monitor

Measurement of Organic Matter  
at Water Source

Measurement of Organic Matter  
on the Process Line



Continuous Measurements  
with Low Maintenance

Large Measurement Range  
of 0 to 5.0 Abs



# ORGANIC POLLUTANT MONITOR OPSA-150



\*Pole mount, outdoor cover, and analysis panel are available as options.

The OPSA-150 is a organic pollutant monitor that uses HORIBA's proprietary Rotary Cell Length Modulation, a measuring technique incorporating 25 years of expertise. The unit can be used as an organic pollutant monitor at drainage systems for determining compliance with COD monitoring regulations, for monitoring quality of water measuring levels of organic matter at water supply intakes, and as an organic monitor on process lines (phenol meter).



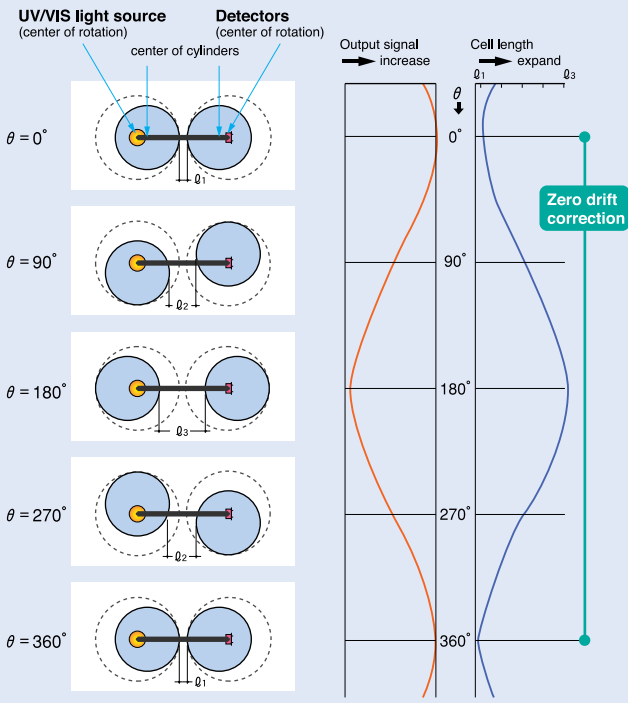
## Sensor that makes full use of Rotary Cell Length Modulation

(JAPAN Patent No. 4627022  
KOREA Patent No. 10-0840034  
CHINA Patent No. ZL200610110930.8)

- Zero drift correction is performed in every cycle of measurement. This correction can eliminate the effect of any interference on cells.
- Cell length modulation provides readings from multiple measurements, making available results from various cell lengths. This allows the single device to make measurements on a large range of concentrations from as low as 0 to 0.1 Abs, up to 0 to 5.0 Abs.



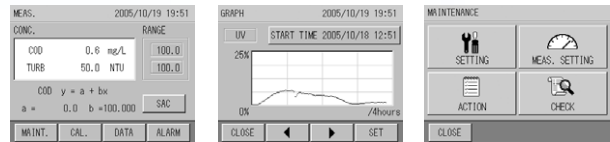
### Cell Length Modulation System



\*CompactFlash is a registered trademark or trademark of SanDisc Corporation in the United States and other countries.

## Easy-to-use Control Panel

Control of the OPSA-150 is operated via the intuitively designed touch panel. An interactive setup screen eliminates any doubts that a user may have while operating the unit. The Converted COD and TURB Display allow readings to be confirmed on site.



## Automatic Data Recording up to One Year

Internal data memory provides data storage for one year in case of one measuring value per hour. A CompactFlash® card can be used to allow easy transfer of data to a PC.



## HORIBA's Proprietary Wiper System

The cell is cleaned continuously by the wiper to eliminate any interference in the measurement light path. Therefore, errors in readings from dirty cells, or differences in results before and after cleaning are not evident.

## Sample Failure Switch Input

The sample error alarm provided as an option on the previous OPSA-120 is now a standard feature.

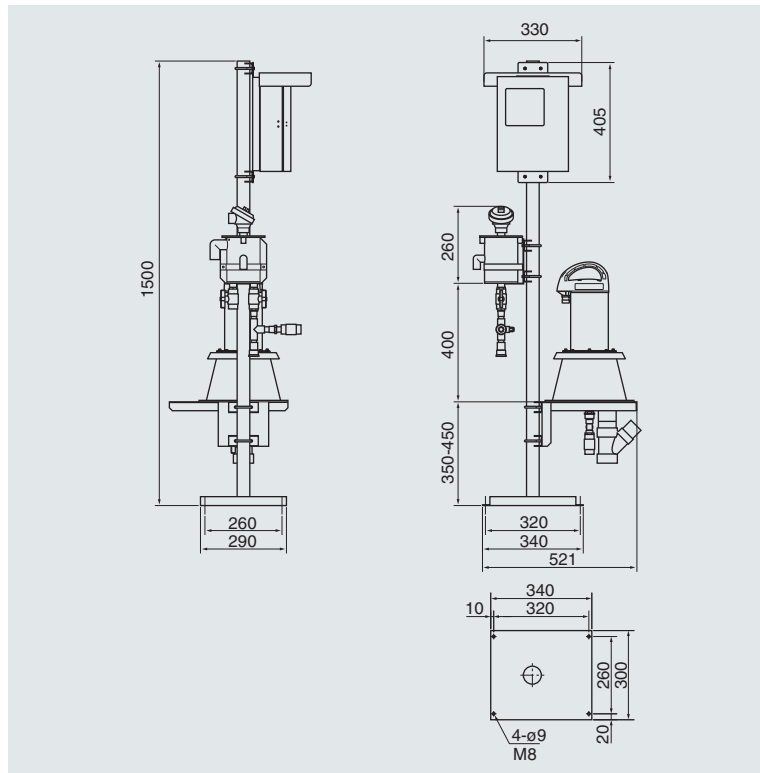
## Ten Times Increase in Analysis Sensitivity

The minimum accuracy of analysis ability has been increased to 0.0001 Abs, a ten-fold increase over the previous OPSA-120 unit. Measurements can be made on concentrations as low as 0 to 0.1 Abs.

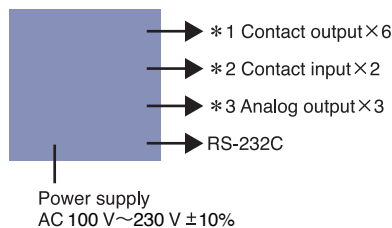
## Specifications

<b>Name</b>	Organic Pollutant Monitor
<b>Model name</b>	OPSA-150
<b>Measurement items</b>	UV absorbance, VIS absorbance, Converted COD level, Converted TURB level
<b>Principle</b>	2 light path 2 wavelength cell length modulation rotary type
<b>Measurement wavelength</b>	UV: 253.7 nm, VIS: 546.1 nm
<b>Construction of analysis section</b>	Flow through type
<b>Range (Equivalent to a cell length of 10 mm)</b>	UV absorbance / VIS absorbance 0 to 0.1 Abs - 0 to 5.0 Abs (Can be set 0.1 Abs increments)
<b>Resolution</b>	0.0001 Abs (Can be set to 0.001 Abs)
<b>Repeatability</b>	Within $\pm 2\%$ of full scale (within $\pm 5\%$ if full scale is 2.6 to 5.0 Abs)
<b>Linearity</b>	Within $\pm 2\%$ of full scale (within $\pm 5\%$ if full scale is 2.6 to 5.0 Abs)
<b>Stability</b>	Within $\pm 2\%$ of full scale in 24 hours (within $\pm 4\%$ in 24 hours if full scale is 2.6 to 5.0 Abs)
<b>Response time</b>	T <sub>90</sub> within 1 minute (flow rate of 5 L/min)
<b>Cleaning method (cleaning cycle)</b>	Automatic cleaning via wipers (continuous cleaning)
<b>Display methods</b>	LCD display: 320 x 240 monochrome crystal display with backlight (touch panel type) Display details: UV absorbance, VIS absorbance, UV-VIS absorbance (Absorbance can be changed to absorption constant (SAC: m <sup>-1</sup> ), Converted COD level, Converted turbidity level
<b>Calibration method</b>	Solution calibration (calibration solution inserted in ampule) via zero solution, span solution (single touch calibration)
<b>Sample conditions</b>	Temperature: 2 to 40°C* Sample flow rate: Minimum 2 L/min, Maximum 20 L/min * Use a heating device to prevent sample freezing.
<b>Ambient conditions</b>	Ambient temperature: 0 to 40°C, Ambient humidity: 85% or less
<b>Analog output</b>	No. of outputs: 3 outputs (standard) Type: Up to 3 can be chosen from UV absorbance, VIS absorbance, UV-VIS absorbance, Converted COD level, and Converted TURB level outputs Specification: DC 4–20 mA, or DC 0–16 mA, isolated output (no isolation between each channel), maximum resistance load: 600 Ω
<b>Alarm and status outputs</b>	No. of outputs: 6 outputs (standard) Type: Up to 4 can be chosen from power failure, maintenance (standard and fixed), batch alarm, COD maximum limit alarm, TURB limit alarm (standard), light source error, sample failure, cleaning motor error, and analyzer error outputs Details: Power failure...occurs when power fails Total alarm...cleaning motor error, light source error, analyzer error Maintenance...occurs when entering maintenance or correction mode, or when the maintenance switch has been turned on Specification: Dry contact output, NO contact Contact rating: AC 125 V 0.3 A, DC 30 V 1 A (with resistance load) Each output has an independent COM interface
<b>Contact input</b>	No. of inputs: 2 inputs (standard) Type: Sample failure float switch input, time correction input Specifications: No-voltage contact input (can connect to open collector), isolated input On resistance: Maximum 100 Ω, Open voltage: DC 5.5 V, Short circuit current: 10 mA
<b>Communication</b>	Interface: RS-232C Compatible Communication speed: 19200 bps
<b>Data memory</b>	Values of measurement items are stored in the main unit's data memory. Data can also be transferred to a CompactFlash® card. Memory interval: 1 minute or 1 hour Memory save time: Every hour* Data memory capacity: 1 minute intervals...for 10 day's data, 1 hour intervals...for 1 year's data *The most recent data is saved to memory.
<b>Light source / Detector</b>	Light source: Low pressure mercury lamp / Detector: Silicon photo cell
<b>Tubing connections</b>	Sample entry: Rp-1/2 socket Bypass outlet: Rc-1/2 socket Overflow outlet (2): 20 A nominal diameter socket Overflow outlet (1): 13 A nominal diameter socket Drain outlet: 50 A nominal diameter socket Drain outlet: Rc-1/2 socket
<b>Construction</b>	For outdoor installation
<b>Material of parts in contact with sample</b>	SUS, PVC, PP, CR, SiO <sub>2</sub>
<b>Power source</b>	AC 100 V to AC 230 V $\pm 10\%$ , 50/60 Hz
<b>Power consumption</b>	AC 100 V to AC 120 V: 45 VA maximum AC 200 V to AC 230 V: 60 VA maximum
<b>Weight</b>	Operating section: Approx. 5.0 kg Analyzer section: Approx. 5.6 kg
<b>External dimensions</b>	Operating section: 240 (W) x 104 (D) x 320 (H) Analyzer section: 200 (W) x 180 (D) x 403 (H) (units: mm) (excludes protruding sections)
<b>Color/Finish</b>	Munsell 5PB8/1
<b>Installation conditions</b>	<ul style="list-style-type: none"> <li>● Install on a flat stable surface away from sources of vibration and shocks.</li> <li>● Ambient air must not contain dust, mist or corrosive gases.</li> <li>● Use at atmospheric pressure.</li> <li>● Out of direct sunlight.</li> <li>● An area with good air circulation.</li> <li>● An altitude of less than 2000 m.</li> </ul>

## Dimensional Outline (Unit: mm)



## OPSA-150 Controller (Signals list)



Signal name	Circuit	Standard
*1 Contact output		<ul style="list-style-type: none"> <li>●Max. switching voltage and current AC 125 V 0.3 A DC 30 V 1 A (Resistance load)</li> <li>●No voltage contacts</li> </ul>
*2 Contact input		<ul style="list-style-type: none"> <li>●No voltage contacts</li> <li>●Isolated inputs [(-) common]</li> <li>●ON resistance Max. 100 Ω</li> <li>●Open voltage Max. DC 26 V</li> <li>●Short circuit current Max. 13 mA</li> </ul>
*3 Analog output		<ul style="list-style-type: none"> <li>●DC 4 - 20 mA current output</li> <li>●Isolated output (COM common)</li> <li>●Load resistance Max. 600 Ω</li> </ul>



The HORIBA Group adopts IMS (Integrated Management System) which integrates Quality Management System ISO9001, Environmental Management System ISO14001, and Occupational Health and Safety Management System OHSAS18001. We have now integrated Business Continuity Management System ISO22301 in order to provide our products and services in a stable manner, even in emergencies.



Please read the operation manual before using this product to assure safe and proper handling of the product.

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