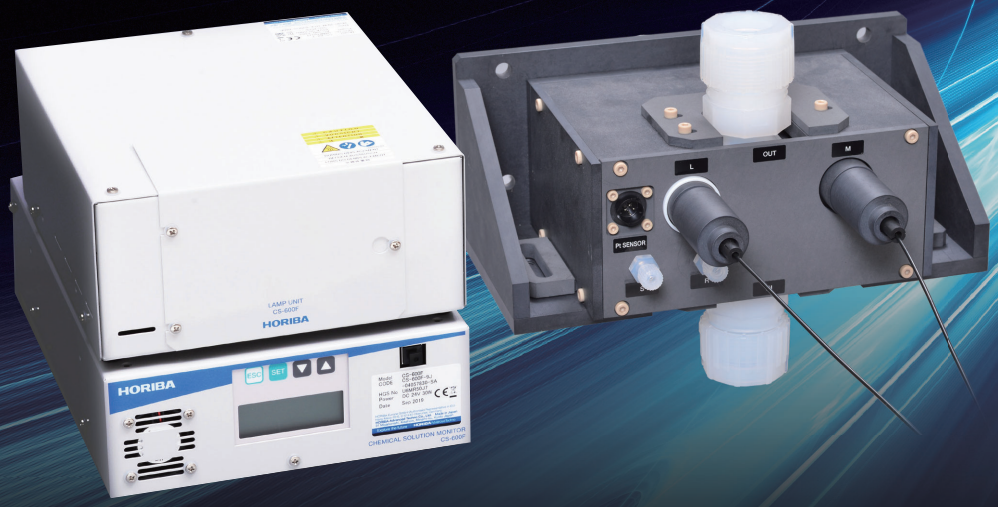
NEW

HORIBA
Semiconductor

Beyond Water with You

Optical Fiber Type
Hot Phosphoric Acid Concentration Monitor
CS-620F

Capable of **"High Concentration Hot Phosphoric Acid"** and **"Direct Measurement"**



This monitor is useful for chemical concentration control during
the SiN-layer etching process in 3D NAND manufacturing process.

Key features

High concentration phosphoric acid up to 92% can be measured

No cooling mechanism and cooling time is needed.
Direct measurement is possible without cooling high-temperature phosphoric acid (140 to 170℃) in the circulation line.

PFA is used in the sample **wetted area to reduce contamination risk**.

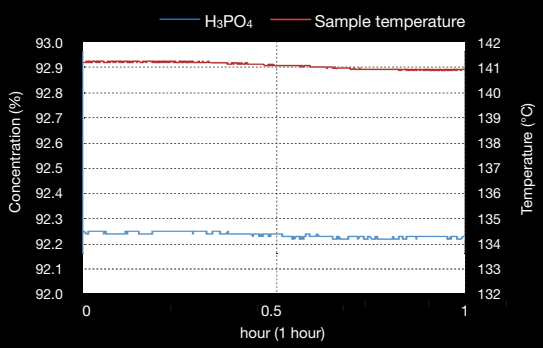
Contributes to significant reduction in equipment downtime by adopting semi-annual background correction cycles.

Contributes to faster concentration feedback control by updating measured data every 3 seconds

Stability

▶ Measurement results
The sample (actual solution) measured for 1 hour shows exellent stability.

	H_3PO_4 (mass%)	H_2O (mass%)	Sample Temp. (°c)
Max.	92.25	7.92	141.2
Min.	92.21	7.72	140.8
Average	92.228	7.823	140.97
SD.	0.010	0.057	0.10
Max. error from Av.	0.022	0.103	0.22



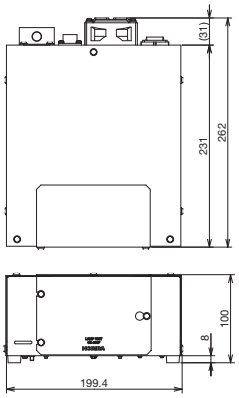
▶ Measurement conditions Measurement Cycle: every 3 seconds Measurement time: 1 hour Moving average: 16 times
Sample concentration (Initial Sample Concentration) H_3PO_4: 92.2% H_2O: 7.8% Sample temperature: 141°c

Specification

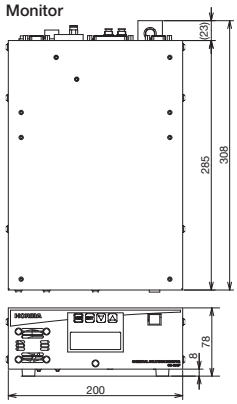
Product name	CHEMICAL SOLUTION MONITOR				
Model	CS-620F				
Measurement principle	Absorption spectroscopic method				
Calculation principle	Temperature compensation type multivariate analysis				
Sample	H_3PO_4/H_2O				
Measurable range Repeatability		Component	Measurable range (mass%)	Repeatability (mass%)	Analog output range (mass%)
	1st solution	H_3PO_4	85.00-92.00	+/-0.10	85.00-100.00
		H_2O	8.0-15.0	+/-0.3	0.0-15.0
	・Repeatability is defined by maximum error from average (1 hour). ・In the case of low temperature measurement (140°C) and high temperature measurement (170°C) with the same chemical, there is possibility of discrepancy (Maximum +/- 0.30%).				
Conditions of Measurement	1) Measurement interval: Approx. 3 sec. (minimum)				
	2) Moving average: 16 times				
Connection fitting size	1 inch or 3/4 inch				
Sample condition	Sample temperature: 140 to 170°C				
	Atmospheric temperature, Chemical temperature fluctuation: within +/- 1°C (period of time : 1 hour)				
	Input pressure: 0.2 MPa or less				
	Pressure fluctuation: 0.02 MPa or less				
	Flow rate: 1 to 30 L/min				
Air (for operation and purge)	Connection port: 4 mm O.D. quick joint				
	Pressure: 0.2 MPa ± 0.02 MPa				
Power source	100 to 230 V AC (Single-Phase), 50/60 Hz				
Power consumption	Approx.85 VA (Transient electric current at the time of the start is excluded)				
Communication	Parallel I/O, RS-232C, Analog output				
Dimension	(Monitor) 200 (W) × 308 (D) × 78 (H) mm				
	(Lamp unit) 200 (W) × 262 (D) × 100 (H) mm				
	(Sample cell) 240 (W) × 209 (D) × 205 (H) mm				
Weight	(Monitor) Approx.3.6 kg				
	(Lamp unit) Approx.2.8 kg				
	(Sample cell) Approx.3.0 kg				
Ambient temperature	(Monitor, Lamp unit) 20 to 30°C				
	(Optical fiber, Sample cell) 20 to 100°C				
	* Sudden temperature change should be avoided, within +/- 1°C/1hour				
Ambient humidity	(Monitor, Lamp unit) 40 to 70% (Should be no dew condensation)				
Slanting angle of installation	(Monitor, Lamp unit) Within +/-1 degree				
	(Sample cell) Please install so that air bubbles do not stay up.				
Optical fiber	Length: 5 m, Bend radius: R150 mm				

Dimensions (Unit: mm)

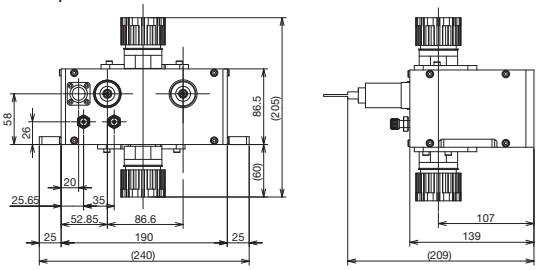
Lamp unit



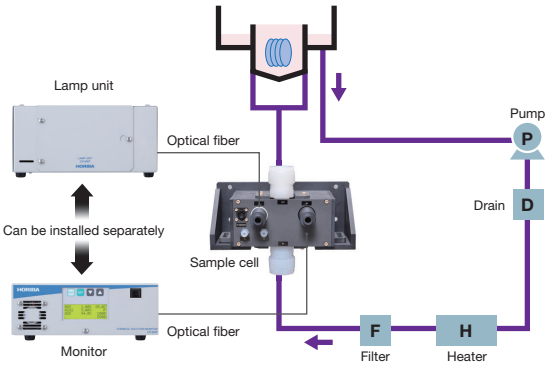
Monitor



Sample cell



Installation image Batch system is assumed



IMS 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 ISO45001.
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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