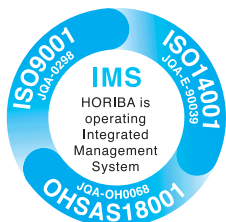


SC-1 Monitor

CS-131



High-speed response and compact profile make the SC-1 Solution Concentration Monitor
(NH₃ / H₂O₂ / H₂O)

the ideal choice for wafer and batch type cleaning devices

The CS-131 is a high-precision chemical concentration monitor designed for use with the SC-1 solutions used in cleaning processes during semiconductor manufacturing. It offers a faster response speed and a more compact size than anything available to date, and monitors the concentrations of the various components of the SC-1 solutions (NH₃ / H₂O₂ / H₂O) used to remove particles and organic substances on an ongoing basis. Feedback control based on the monitor output is used to keep the concentrations of the SC-1 solutions within the allowable ranges and to eliminate unnecessary replacement of chemicals. In addition, a model with an integrated cooling unit is available, allowing accommodation of a broad range of sample temperatures.

A measurement cycle of approximately 2 seconds supports concentration management for 300 mm processes

A very short measurement cycle* of approximately two seconds means fast response. Frequent feedback for both single-bath and batch type cleaning devices is supported.

*Does not include chemical replacement and cooling times.

The compact design means less space is needed for the cleaning device

Because of the compact design, only two-thirds (*) the conventional floor area is required, so less space is needed for the cleaning device. The monitor can be easily integrated with the cleaning device.

*Based on comparison with the CS-220 series by Horiba.

Fewer lot defects in the cleaning process mean a higher yield

Output from the monitor is used for replenishment control of the SC-1 solutions, enabling cleaning with a high reproducibility rate. There are fewer defects in the cleaning process, and this helps boost the overall yield.

Fully automatic measurement and simple control

All the user has to do is prepare the SC-1 solution. Measurement is fully automatic, so no control whatsoever is required once the measurement has begun. In addition, air is used for reference spectral measurement, so a utility water supply is not needed.

Comprehensive measures to eliminate air bubbles enable measurement of high-temperature samples

Air bubbles are separated out in a bubble removing tank, while an electromagnetic valve minimizes mixing of air bubbles in the flow cell during measurement. If the monitor has an integrated cooling unit, high-temperature samples can be sent directly to the monitor. Temperature compensation is carried out automatically.

24 V DC used for higher safety assurance

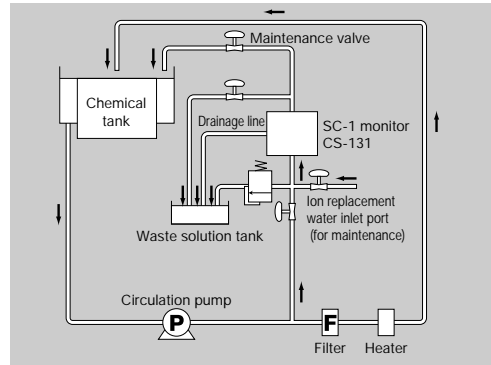
Low-voltage 24 VDC is used for the power supply, offering improved safety and protection from electrical shock. An internal leakage sensor can be installed to detect water leaks, so that the supply of SC-1 solutions can be shut off in the event of an emergency.

Specifications

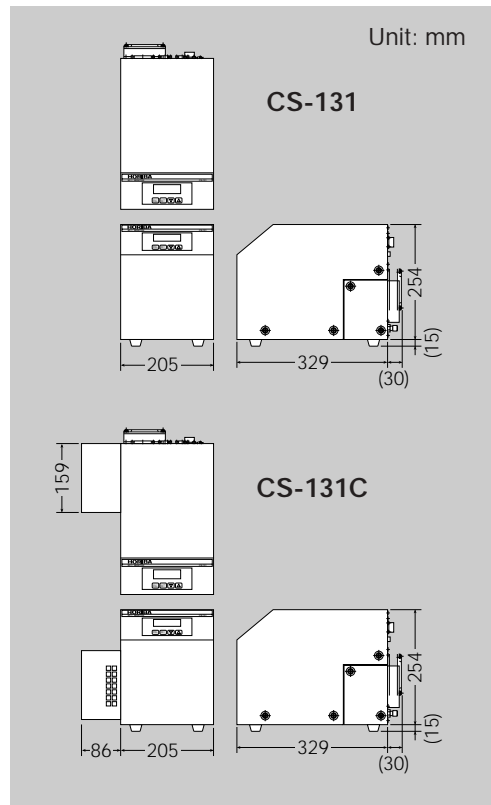
Model	CS-131	CS-131C	
Model specifications	No cooling unit	Integrated cooling unit	
Measurement sample	SC-1 (ammonia / hydrogen peroxide aqueous solution)		
Measurement principle	Absorption spectrometry		
Concentration computation principle	Temperature-compensated multivariate analysis		
Measurement range	NH ₃ : 0.00 to 1.00 % / 0.00 to 3.00 % / 0.00 to 5.00 % H ₂ O ₂ : 0.00 to 5.00% / 0.00 to 7.00 % / 0.00 to 10.00 % H ₂ O: 94.0 to 100.0% / 90.0 to 100 % / 85.0 to 100 % Please consult HORIBA for information concerning other measurement ranges.		
Reproducibility (Peak to peak)	NH ₃ : ± 0.15 % / ± 0.2 % / ± 0.25 % H ₂ O ₂ : ± 0.3 % / ± 0.3 % / ± 0.3% H ₂ O: ± 1.5% / ± 1.5 % / ± 1.5 %		
Chemical conditions	Temperature	20 to 30	20 to 80
	Flow rate	20 to 60 ml/min.	20 to 40 ml/min.
	Pressure	0.10 to 0.20 MPa	
Measurement cycle	Approx. 2 seconds minimum (not including chemical replacement and cooling times)		
Equipment temperature	20 to 25		
Operation panel	1) Temperature level display: Ammonia, hydrogen peroxide, water 2) Alarm display: Ammonia, hydrogen peroxide: Concentration low-low limit, concentration low limit, concentration high limit, concentration high-high limit 3) Alarm value settings: Ammonia, hydrogen peroxide: Concentration low-low limit, concentration low limit, concentration high limit, concentration high-high limit		
Serial input/output	RS-232C 1) Concentration data: Ammonia, hydrogen peroxide 2) Alarm value settings: Ammonia, hydrogen peroxide: Concentration low-low limit, concentration low limit, concentration high limit, concentration high-high limit		
Parallel input	12 to 30 V DC (photocoupler insulated) Parallel concentration alarm (ON/OFF)		
Parallel output	Maximum current when open collector output is ON: 5 mA Maximum voltage when open collector output is OFF: 30 V 1) Alarm output: Ammonia, hydrogen peroxide: Concentration low-low limit, concentration low limit, concentration high limit, concentration high-high limit 2) Device error 3) Liquid leakage		
	4 to 20 mA (2 outputs: NH ₃ concentration, H ₂ O ₂ concentration) *Regardless of the range specifications, the output of 4 ~ 20 mA can be made to correspond to 0 ~ 10% concentrations. (Please specify when ordering.)		
	Power supply: 24 V DC ± 10%, 2 A		
Dimensions	205 (W) x 329 (D) x 269 (H) mm	291 (W) x 329 (D) x 269 (H) mm	
Weight	Approx. 11 kg	Approx. 12 kg	
Connection pipe size	For input and exhaust: Outer diameter 3 mm (inner diameter 2 mm)		
Pipe connection	Nippon Pillar Super type		

Please consult Horiba concerning any specifications not listed above.

Sample configuration



External dimensions



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

- The contents of this catalog are subject to change without prior notice, and without any subsequent liability to this company.
- It is strictly forbidden to copy the content of this catalog in part or in full.
- All brand names, product names and service names in this catalog are trademarks or registered trademarks of their respective companies.

<http://www.horiba-semi.com> e-mail: info@horiba.co.jp

● **HORIBA, Ltd.**
Head Office
 2 Miyahonogashi, Kisshoin
 Minami-ku, Kyoto, Japan
 Phone: 81-75-313-8123
 Fax: 81-75-321-5725

● **Tokyo Sales Office**
 1-7-8 Higashi-Kanda
 Chiyoda-ku, Tokyo, Japan
 Phone: 81-3-3861-8231
 Fax: 81-3-3861-8259

● **TAIWAN Representative Office**
 3F, NO.18 Lane 676, Chung
 Hua Rd, Chupei City,
 Hsinchu Hsien, 302, Taiwan
 Phone: 886 (3) 656-1012
 Fax: 886 (3) 656-8231

● **HORIBA TRADING CO., Ltd.**
Shanghai Office
 Room 1103, United Plaza,
 1468 Nanjing Rd. West,
 Shanghai, 200040, China
 Phone: 21-3222-1666
 Fax: 21-6289-5553

● **Beijing Office**
 Room 609, Jin Bao Plaza,
 89 Jin Bao Street,
 Dongcheng District, Beijing,
 100005 China
 Phone: 10-6522-7573
 Fax: 10-6522-7582

● **HORIBA KOREA Ltd.**
 112-6 Sogong-Dong
 Choong-ku, Seoul, Korea
 Phone: 82-2-753-7911
 Fax: 82-2-756-4972

● **HORIBA INSTRUMENTS Pte. LTD.**
 10 Ubi Crescent
 #05-11/12, Ubi Techpark
 Singapore 408564
 Phone: 65-6745-8300
 Fax: 65-6745-8155

● **HORIBA INSTRUMENTS INCORPORATED**
Irvine Facility
 17671 Armstrong Avenue
 Irvine, CA 92614, U.S.A.
 Phone: 1-949-250-4811
 Fax: 1-949-250-0924

● **HORIBA / STEC INCORPORATED**
Sunnyvale Office
 1080 E. Duane, Suite. A
 Sunnyvale, CA 94086
 U.S.A.
 Phone: 1-408-730-4772
 Fax: 1-408-730-8975

● **Austin Office**
 9701 Dessau Road
 Suite 605, Austin
 Texas 78754, U.S.A.
 Phone: 1-512-836-9560
 Fax: 1-512-836-8054

● **Portland Office**
 10240, SW Nimbus Ave.
 Suite L-5, Portland,
 OR 97223, U.S.A.
 Phone: 1-503-624-9767
 Fax: 1-503-968-3236

● **HORIBA INSTRUMENTS LIMITED**
Kyoto Close
 Summerhouse Road
 Moulton Park, Northampton
 NN3 6FL, U.K.
 Phone: 44-1604-542600
 Fax: 44-1604-542696
 e-mail: hil.semicom@horiba.co.jp

● **Grenoble Office**
 BURO club Gieres,
 2 Avenue de Vignate
 38610 Gieres, France
 Phone: 33-4-76-63-4915
 Fax: 33-4-76-54-0399

● **Netherlands Office**
 Bijsterhuizen 11-58,
 6546 AS Nijmegen,
 The Netherlands
 Phone: 31-24-366-0985
 Fax: 31-24-366-0987

● **HORIBA EUROPE GmbH**
Head Office
 Hans-Mess-Str.6,
 D-61440 Oberursel/Ts.
 Germany
 Phone: 49-6172-1396-0
 Fax: 49-6172-137385

● **Dresden Office**
 Zur Wetterwarte 10
 Haus 109
 01109 Dresden
 Germany
 Phone: 49-3518-896807
 Fax: 49-3518-896808

● **HORIBA FRANCE**
 12, Avenue des Tropiques
 91955 LES ULIS
 France
 Phone: 33 (1) 69-29-96-23
 Fax: 33 (1) 69-29-95-77

● **HORIBA SWEDEN**
 Hertig Carlsväg 55-57
 S-15138 Södertälje
 Sweden
 Phone: 46-8-550-80701
 Fax: 46-8-550-80567

● **HORIBA ITALY**
 Europalace
 Corso Torino 43/45
 10043 Orbassano, Torino, Italy
 Phone: 39-011-9040601
 Fax: 39-011-9000448

● **HORIBA GmbH**
 Kaplanstrasse 5
 A-3430 Tulln,
 Austria
 Phone: 43-2272-65225
 Fax: 43-2272-65230

● **HORIBA CZECHIA**
 Organizacni slozka Praha
 Petrohradská 13
 CZ-101 00 Praha 10,
 Czech Republic
 Phone: 420-2-717-464-80
 Fax: 420-2-717-470-64