

Measure and Display up to **11 Items** Simultaneously

**Rugged Outdoor Design**

Multi-parameter Water Quality Meters

## U-50 Series

5 languages display

English 

Japanese 

Russian 

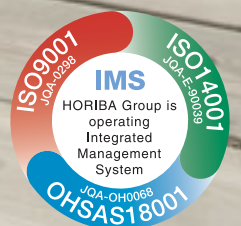
Spanish 

Portuguese 

## Multi-parameter Water Quality Meters



**CE**  
CE marking compliant



# Measure and Display 11 Parameters Simultaneously with Newly Designed Control Unit and Sensor Technology.

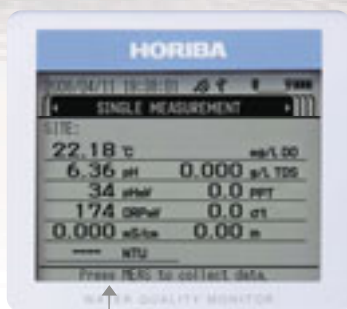
Intuitive software assures ease of use and operation efficiency.

Experience the durability and performance of an instrument that exceeds your expectations in the field testing of ground water and surface water applications.

Measure and Display up to **11 Items** Simultaneously

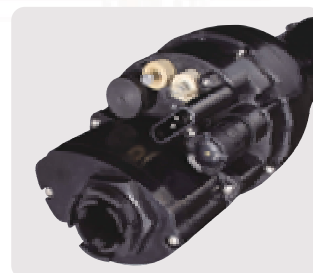
## Control Unit Features:

- Easy to read LCD Display
- One-hand operation
- On-screen icon displays battery power and GPS, USB and probe unit connectivity
- Quick-connect connector (cable to control unit)
- Shock resistant cover
- Backlight display



Operating instructions

Rugged Outdoor Design



## Sensor Probe Unit Features:

- Turbidity Sensor conforms to US EPA method 180.1 (U-53/U-53G)
- Turbidity Sensor conforms to EN ISO 7027 (U-54/U-54G)
- Minimum dissolved oxygen sensor maintenance with screw-on type membrane cap
- Chemical resistant materials of construction
- Optional ToupH pH electrode\* that is difficult to break
- Field replaceable sensors

\*Prevents damage during maintenance.



## Innovative Features,

Design and Performance that Makes Measurement Easy in a Variety of Applications



### ●Measurement at a Drainage Ditch or Wharf

Instantaneously monitor, collect and store data while moving the submersed sensor probe unit.



### ●Measurement in Marshes

The control unit's waterproof design allows the user to work without concern of splashing or accidentally dropping the control unit in the water. The backlight display allows the user to take measurements in the dark.



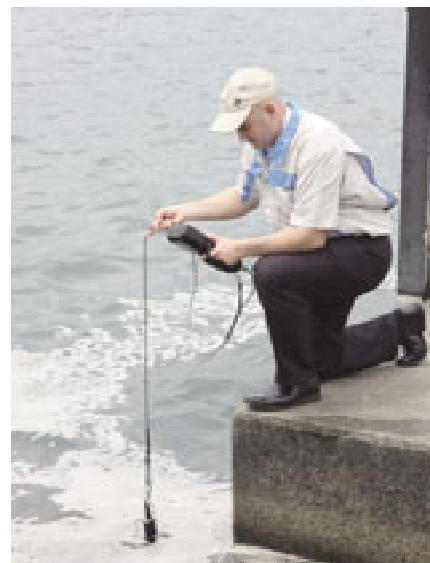
### ●Measurements in Surface Water

The long 30 meter cable option allows the user to deploy the sensor probe unit and collect measurement data at varying depths. The GPS models facilitate environmental surveys of oceans, lakes and rivers.



### ●Measuring Ground Water from an Intake

With the sensor probe lowered and submersed at an intake, 10,000 data sets can be stored in the control unit and transferred to a PC later.



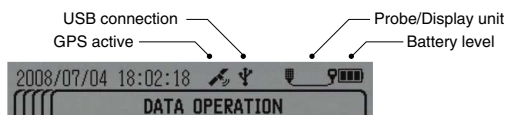


# Exceptional Performance and Optimal Design for field ap

## Control Unit >>>

### Easy to read LCD Display and Easy Operation

- All 11 parameters measurement data is listed on screen.
- Text size can be changed to large font.
- Small control unit design for operation with one hand.
- Icon display information.



- Operation instructions on-screen.
- Variable display contrast compensates for extreme ambient lighting conditions.

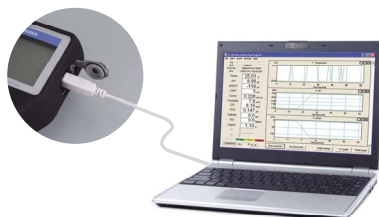
### Control Unit Design for Field Operations

- Auto-calibration feature provides hassle free calibration of pH, dissolved oxygen, conductivity, turbidity and depth.
- Shock resistant cover designed for rough treatment in the field and is easily cleaned.
- Cable can be easily connected and disconnected with quick-connect fitting.



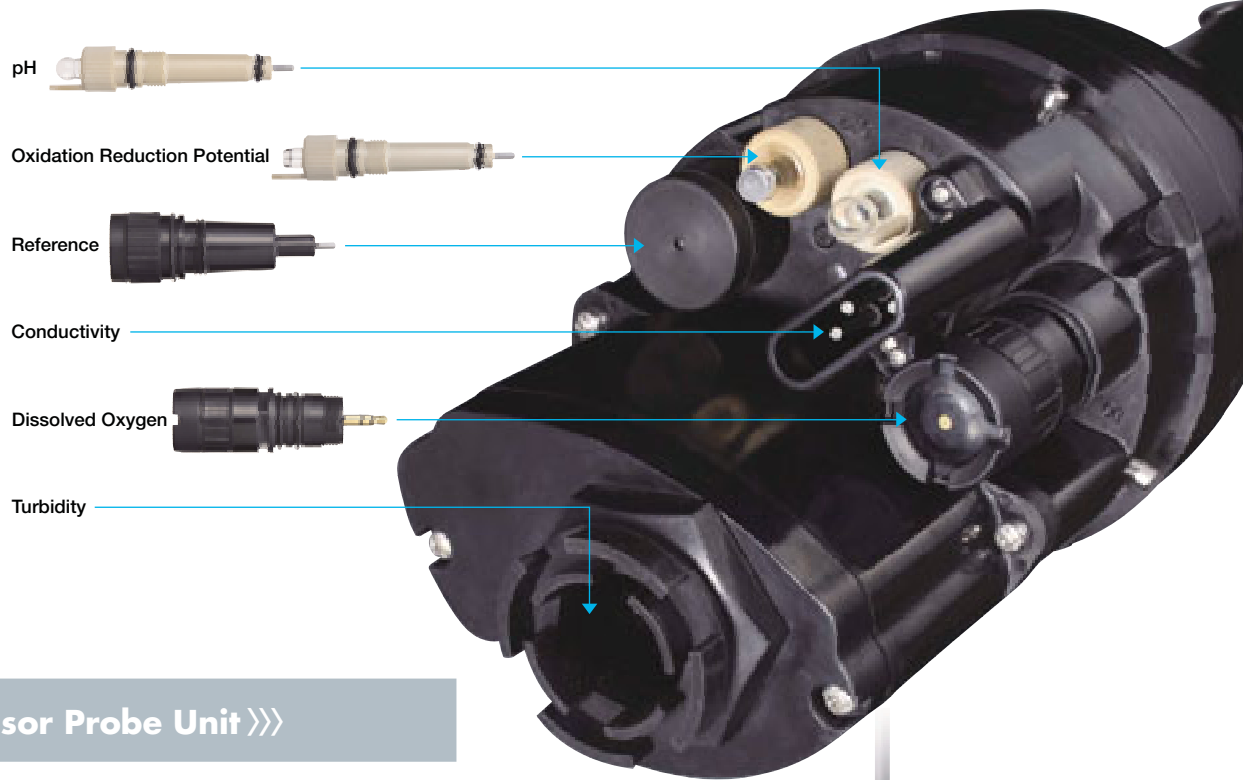
### Data Management

- Auto hold function freezes average data values on the screen to offer more time to verify or transcribe data.
- Diagnostic functions notify the user of errors.
- Integral USB connection for data transfer to a PC. USB cable is sold separately and includes software.
- Selectable measurement units allow the operator to report data without the need to convert data to desired units of measure.



### GPS Compatible (U-52G/53G/54G)

The system can be used in conjunction with the Global Positioning System (GPS) to record latitude, longitude, and other location data for individual measurements. This is particularly useful for environmental surveys.



Sensor Probe Unit >>>

Multiple Sensors Housed in Each Probe

- Multiple sensors allow for the measurement of 11 parameters simultaneously. (pH, pH (mv), ORP, DO, COND, Salinity, TDS, Seawater Specific Gravity, Temperature, Turbidity, Water depth)
- Turbidity Sensor U-53 conforms to US EPA method 180.1. Precision has been improved over conventional instruments. The Model U-53 high precision field replaceable turbidity sensor with wiper has a resolution of 0.01 NTU.
- Turbidity sensor of U-54 conforms to EN ISO 7027. The model U-54 has a resolution of 0.01 NTU.
- Improved stability of the dissolved oxygen sensor has been achieved with a new 3 electrode design for fast response and polarographic sensor for ease of maintenance.
- pH and ORP electrodes can be replaced individually to reduce replacement costs.

U-5X series specification comparison list

	U-51	U-52	U-52G	U-53	U-53G	U-54	U-54G
pH	●	●	●	●	●	●	●
ORP (Oxidation Reduction Potential)	●	●	●	●	●	●	●
Dissolved Oxygen	●	●	●	●	●	●	●
Conductivity	●	●	●	●	●	●	●
Salinity	●	●	●	●	●	●	●
TDS (Total Dissolved Solids)	●	●	●	●	●	●	●
Seawater Specific Gravity	●	●	●	●	●	●	●
Temperature	●	●	●	●	●	●	●
Turbidity (LED)	—	●	●	—	—	●	●
Turbidity (Tungsten lamp)	—	—	—	●	●	—	—
Water depth	—	—	●	●	●	●*	●*
GPS	—	—	●	—	●	—	●

Note: \*U-54/G(2m) don't have the feature of water depth.



# U-50 Series Specifications

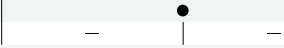


		U-51	U-52	U-52G	U-53	U-53G
Sensor Probe	Measurement temperature				-10 to 55°C	
	Maximum sensor diameter	Approx. 96 mm				
	Probe length	Approx. 340 mm				
	Cable length	Standard: 2 m, option: 10, 30 m				
	Mass	Approx. 1,800 g (Approx. 3.97 lbs)				
	Automatic calibration (uses pH4)	●		●		●
	Turbidity wiper	—			●	●
	Measurement depth	Max. 30 m				
	Liquid contact part material (liquid end material)	PPS, glass, SUS316L, SUS304, FKM, PEEK,Q, titanium, FEP membrane, POM				
	Water resistance	JIS protection level 8				
Control Unit	Outer dimensions	115 (W) x 66 (D) x 283 (H) mm				
	Mass	Approx. 800 g (Approx. 1.76 lbs)				
	LCD	320 x 240 liquid crystal display with backlight (black and white)				
	Data memory	10,000				
	Communication	USB				
	Battery	C batteries x 4				
	Water resistance	JIS protection level 7 (when sensor cable is fitted)				
	Battery Life	Approx. 70 hours (without backlight)		Approx. 500 measurements		
	Storage temperature	-10 to 60°C				
	Ambient temperature	-5 to 45°C				
pH	Measurement principle	Glass electrode method				
	Range	pH0 to 14				
	Resolution	0.01pH				
	Repeatability	±0.05pH				
	Accuracy	±0.1pH				
Oxidation Reduction Potential (ORP)	Measurement principle	Platinum electrode method				
	Range	-2000 mV to +2000 mV				
	Resolution	1 mV				
	Repeatability	±5 mV				
	Accuracy	±15 mV				
Dissolved Oxygen (DO)	Measurement principle	Polarographic method				
	Range	0 to 50.0 mg/L				
	Resolution	0.01 mg/L				
	Repeatability	±0.1 mg/L				
	Accuracy	0 to 20 mg/L: ±0.2 mg/L 20 to 50 mg/L: ±0.5 mg/L				
Conductivity (COND)	Measurement principle	4 AC electrode method				
	Range	0 to 10 S/m (0 to 100 mS/cm)				
	Resolution	0.000 to 0.999 mS/cm: 0.001 mS/cm	1.00 to 9.99 mS/cm: 0.01 mS/cm	10.0 to 99.9 mS/cm: 0.1 mS/cm		
	Repeatability	0.0 to 99.9 mS/m: 0.1 mS/m 0.100 to 0.999 S/m: 0.001 S/m 1.00 to 9.99 S/m : 0.01 S/m				
	Accuracy	±0.05% F.S.				
Salinity	Measurement principle	Conductivity conversion				
	Range	0 to 70 PPT (permillage)				
	Resolution	0.1 PPT				
	Repeatability	±1 PPT				
	Accuracy	±3 PPT				
Total Dissolved Solid (TDS)	Measurement principle	Conductivity conversion				
	Range	0 to 100 g/L				
	Resolution	0.1% F.S.				
	Repeatability	±2 g/L				
	Accuracy	±5 g/L				
Seawater specific gravity	Measurement principle	Conductivity conversion				
	Range	0 to 50 σ <sub>t</sub>				
	Resolution	0.1 σ <sub>t</sub>				
	Repeatability	±2 σ <sub>t</sub>				
	Accuracy	±5 σ <sub>t</sub>				
Temperature	Measurement principle	Thermistor method				
	Range	-10 to 55°C				
	Resolution	0.01°C				
	Repeatability	*±0.10°C (at calibration point)				
	Accuracy	JIS class B platinum thermometer sensor (±0.3+0.005   t  )				
Turbidity (TURB)	Measurement principle	LED light source and 30° scattering method		Tungsten lamp source and 90° scattering method		
	Range	0 to 800 NTU		0 to 1000 NTU		
	Resolution	0 to 99.9 NTU: 0.1 NTU 100 to 800 NTU: 1 NTU		0 to 9.99 NTU: 0.01 NTU 10 to 99.9 NTU: 0.1 NTU 100 to 1000 NTU: 1 NTU		
	Repeatability	*±5% (Reading) or ± 0.5 NTU whichever is greater		±3% (Reading) or ±0.1 NTU whichever is greater		
	Accuracy	±5% (Reading) or ±1 NTU whichever is greater		0 to 10 NTU: ±0.5 NTU 10 to 1000 NTU: 3% (Reading) or ±1 NTU whichever is greater		
Water depth	Measurement principle	Pressure method				
	Range	0 to 30 m				
	Resolution	0.05 m				
	Repeatability	±1% F.S.				
	Accuracy	±0.3 m				
GPS	12 channel parallel	—	—	●	—	●

**Note:**

- \* Battery life based on continuous operation using alkaline C dry batteries when the monitor temperature is over 20°C and the backlight OFF.
- \* Accuracy is measured by calibrating 4 points for turbidity and electrical conductivity and 2 points for all other measurements against standard solution.
- \* Repeatability is measured by the ability to reproduce the results against the standard solution (at 25°C normal pressure condition).

	U-54	U-54G
--	------	-------

Approx. 70 hours (without backlight)







LED light source and 90° scattering method  
0 to 1000 NTU  
0 to 0.99: 0.01 NTU 1 to 99.9: 0.1 NTU  
100 to 1000 NTU: 1 NTU  
±5% (Reading) or ± 0.5 NTU whichever is greater  
±5% (Reading) or ±1 NTU whichever is greater

Pressure method, only 10m and 30m product

--	--	--

### U-50 Series

	Cable length	Model	Code
<b>U-51</b>	2 m	U-51 (2 m)	3200164509
	10 m	U-51 (10 m)	3200164510
<b>U-52</b>	2 m	U-52 (2 m)	3200164501
	10 m	U-52 (10 m)	3200164502
	30 m	U-52 (30 m)	3200164503
<b>U-52G</b>	2 m	U-52G (2 m)	3200156563
	10 m	U-52G (10 m)	3200164499
	30 m	U-52G (30 m)	3200164500
<b>U-53</b>	2 m	U-53 (2 m)	3200164506
	10 m	U-53 (10 m)	3200164507
	30 m	U-53 (30 m)	3200164508
<b>U-53G</b>	2 m	U-53G (2 m)	3200158178
	10 m	U-53G (10 m)	3200164504
	30 m	U-53G (30 m)	3200164505
<b>U-54</b>	2m	U-54 (2 m)	3200323680
	10 m	U-54 (10 m)	3200323681
	30 m	U-53 (30 m)	3200323683
<b>U-54G</b>	2m	U-54G (2 m)	3200323686
	10 m	U-54G (10 m)	3200323687
	30 m	U-54G (30 m)	3200323688

### Standard Accessories

Item	Quantity
pH4 standard solution (500mL)	1
pH reference internal solution (250 mL)	1
DO sensor internal solution set ●Internal solution (50mL) ●Sandpaper (#8000, #600) ●Syringe	1
DO Membrane spare parts set	1
Spanner for DO sensor	1
Cleaning brush	1
Calibration cup	1
Back pack	1
Strap	1
Alkaline batteries LR14	4
Silicon grease	1
Instruction manual	1

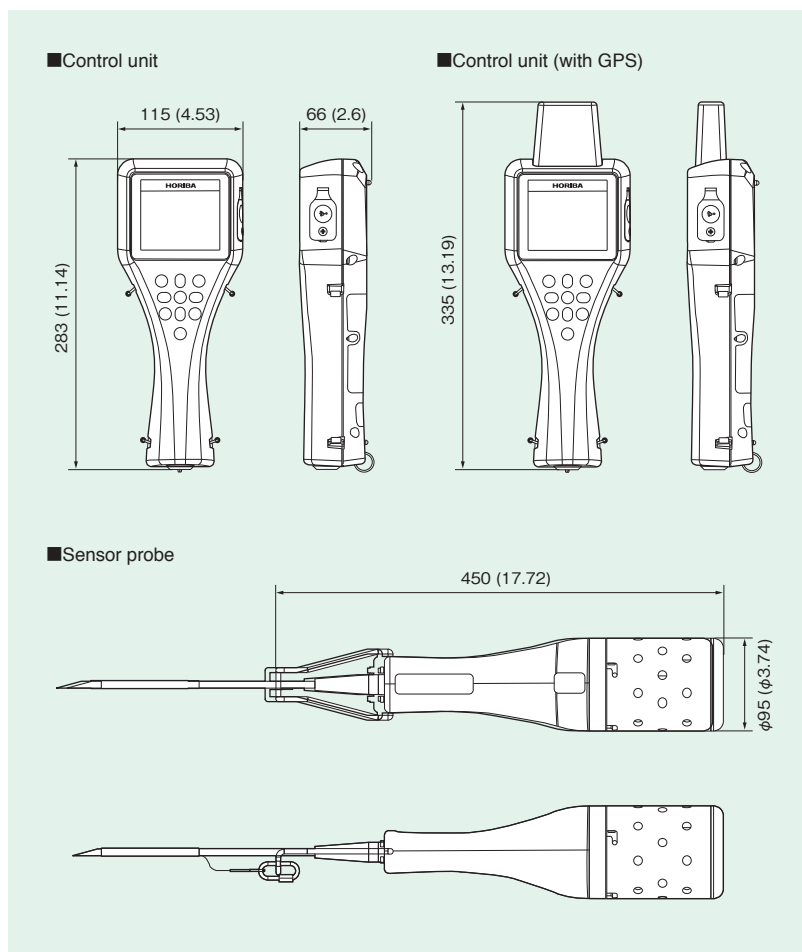
### Consumables

Item	Model	Code
pH sensor	7112	3014057312
pH sensor ToupH	7113	3200170923
ORP sensor	7313	3200170920
DO sensor	7543	3200170924
Reference sensor	7210	3200043582
Reference tip	—	3200043587
Turbidity sensor U-52/52G	7800	3200172803
Turbidity sensor U-53/53G	7801	3200172800
Turbidity sensor U-54/54G	7802	3200318188
DO membrane cap	—	3200170194
DO Inner fluid 50mL	306	3200170938

### Standard solution

	Item	Model	Code	
<b>Standard solution</b>	pH4 (for automatic calibration), 500 mL	100-4	3200043638 (9003001600)	
	pH4 (for automatic calibration), 4 L	140-4	3200174430	
	pH7	100-7	3200043637 (9003001700)	
	pH9	100-9	3200043636 (9003001800)	
	ORP standard solution powder For 250 mL × 10	160-51	3200043618 (9003003100)	
	ORP standard solution powder For 250 mL × 10	160-22	3200043617 (9003003000)	
	<b>Internal solution</b>	Internal solution for pH reference 250 mL	330	3200043641 (9037005200)

**■Dimensions** unit: mm (in)



**■Option**

Item	Model	Code
Carrying case	U-5030	3200174772
Flow chamber	—	3200156570
Probe guard	—	3200167002
Cable (with data-collection software)	—	3200174823



**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.
- The color of the actual products may differ from the color pictured in this catalog due to printing limitations.
- 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.com> e-mail: [info@horiba.co.jp](mailto:info@horiba.co.jp)

**●HORIBA, Ltd.**

**Head Office**  
 2 Miyano Higashi, Kisshoin  
 Minami-ku, Kyoto, Japan  
 Phone: 81 (75) 313-8123  
 Fax: 81 (75) 321-5725

**Tokyo Sales Office**  
 Kanda-Awaji-cho Nichome  
 Building 2-6, Awaji-cho,  
 Kanda, Chiyoda-ku, Tokyo,  
 Japan  
 Phone: 81 (3) 6206-4721  
 Fax: 81 (3) 6206-4730

**●HORIBA (China) Trading Co., Ltd.**

**Shanghai Office**  
 Room 1701, United Plaza,  
 1468 Nanjing Rd. West,  
 Shanghai, 200040, China  
 Phone: 86 (21) 6289-6060  
 Fax: 86 (21) 6289-5553

**Beijing Office**  
 Room 1801, SK Tower,  
 Tower 1 No.6Jia, Jianguomenwai Ave.,  
 Chaoyang District, Beijing,  
 100022 China  
 Phone: 86 (10) 8567-9966  
 Fax: 86 (10) 8567-9066

**●HORIBA Korea Ltd.**

112-6 Sogong-Dong  
 Choong-ku, Seoul, Korea  
 Phone: 82 (2) 753-7911  
 Fax: 82 (2) 756-4972

**●HORIBA Instruments (Singapore) Pte Ltd.**

**Head Office**  
 10 Ubi Crescent  
 Lobby B #05-12, Ubi  
 Techpark Singapore 408564  
 Phone: 65 6745-8300  
 Fax: 65 6745-8155

**Hanoi Office**  
 Unit 10, 4 Floor, CMC tower,  
 Dich Vong Hau Ward, Cau Giay  
 district, Hanoi, Vietnam  
 Phone: 84 (4) 3795-8552  
 Fax: 84 (4) 3795-8553

**Jakarta Office**  
 Jl. Jend. Gatot, Subroto,  
 Kav 71-73, Menara Bidakara 2,  
 Unit 11-04, Jakarta Selatan,  
 12870, Indonesia  
 Phone: 62 (21) 2906-9419  
 Fax: 62 (21) 2906-9421

**●HORIBA India Private Limited**

**Delhi Office**  
 246, Okhla Industrial Estate,  
 Phase 3 New Delhi - 110020,  
 India  
 Phone: 91 (11) 4646-5000  
 Fax: 91 (11) 4646-5020

**Pune Office**  
 502, Purushottam Plaza,  
 Baner Road, Baner,  
 Pune - 411045 India  
 Phone: 91 (20) 2729-1121  
 Fax: 91 (20) 2719-1121

**●HORIBA Instruments Incorporated**

**Irvine North Office**  
 17671 Armstrong Avenue  
 Irvine, CA 92614, U.S.A.  
 Phone: 1 (949) 250-4811  
 Fax: 1 (949) 250-0924

**●HORIBA (Austria) GmbH**

Kaplanstrasse 5  
 A-3430 Tulln,  
 Austria  
 Phone: 43 (2272) 65225  
 Fax: 43 (2272) 65230

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

**●HORIBA Europe GmbH**

**Head Office**  
 Hans-Mess-Str.6  
 D-61440 Oberursel  
 Germany  
 Phone: 49 (6172) 1396-0  
 Fax: 49 (6172) 1373-85

**Leichlingen Office**  
 Julius-kronenberg Str.9  
 D-42799 Leichlingen  
 Germany  
 Phone: 49 (2175) 8978-0  
 Fax: 49 (2175) 8978-50

**●HORIBA France Sarl**

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

**●HORIBA Instruments Limited**

Kyoto Close  
 Summerhouse Road  
 Moulton Park, Northampton  
 NN3 6FL, UK  
 Phone: 44 (1604) 542-500  
 Fax: 44 (1604) 542-699

Bulletin:HRE-1930E

Printed in Japan TF-K(SK)33

