



# HORIBA

## Portable Water Quality Meter

**pH** **ORP** **ION** **Conductivity** **Temperature** **Resistivity** **Salinity** **DO**

**D-50 Series**  
**ES-51**  
**OM-51**

### Feature

- Portable multi-parameter meter allows simultaneous measurement of up to 4 parameters.
- Quick connection to PC allows easy and fast data evaluation.
- Automatic data-logging function.
- Store up to 300 sets of data automatically.
- Self diagnostic function assures reliable measurement.
- User-friendly self-diagnostic modes for battery voltage, temperature, calibration and LCD checks.
- User-friendly features and portability with large LCD display.
- Revolutionary waterproof meter and electrodes enhance care-free operation in the lab or field.



**D-51**

**pH** 0.00 - 14.00  
**TEMP** 0.00 - 100.0°C



**D-52**

**pH** 0.00 - 14.00  
**ORP** -1999 - 1999 mV  
**TEMP** 0.00 - 100.0°C



**D-53**

**pH** 0.00 - 14.00  
**ORP** -1999 - 1999 mV  
**ION** 0.0 µg/L - 999 g/L  
**TEMP** 0.00 - 100.0°C



**D-54**

**pH** 0.00 - 14.00  
**ORP** -1999 - 1999 mV  
**COND** 0.000 mS/m - 19.99 S/m  
**TEMP** 0.00 - 100.0°C



**D-55**

**pH** 0.00 - 14.00  
**ORP** -1999 - 1999 mV  
**DO** 0.000 mS/m - 19.99 S/m  
**TEMP** 0.00 - 100.0°C



**ES-51**

**COND** 0.000 mS/m - 19.99 S/m  
**SALT** 0.00 - 4.00%  
**RESI** 5.00 Ω · m - 199.9 kΩ · m  
**TEMP** 0.00 - 100.0°C



**OM-51**

**DO** 0.00 - 19.99 mg/L  
**TEMP** 0.00 - 100.0°C

# D-50 series / ES-51 / OM-51 Specifications

	D-51		D-52		D-53		D-54		D-55	
	pH		pH ORP		pH ORP ION		pH ORP COND		pH ORP DO	
	•RS-232C output (PC/Printer)		•RS-232C output (PC/Printer)		•RS-232C output (PC/Printer)		•RS-232C output (PC/Printer)		•RS-232C output (PC/Printer)	
Measurement pH method	Glass electrode method		Glass electrode method		Glass electrode method		Glass electrode method		Glass electrode method	
ION	---		---		Ion electrode method		---		---	
Conductivity	---		---		---		AC bipolar method		---	
Dissolved Oxygen	---		---		---		---		Diaphragm galvanic battery method	
SALT	---		---		---		---		---	
Resistance	---		---		---		---		---	
Saturation Oxygen	---		---		---		---		---	
Oxygen	---		---		---		---		---	
Measurement pH range	pH0.00 ~ 14.00 Resolution 0.01pH		pH0.00 ~ 14.00 Resolution 0.01pH		pH0.00 ~ 14.00 Resolution 0.01pH		pH0.00 ~ 14.00 Resolution 0.01pH		pH0.00 ~ 14.00 Resolution 0.01pH	
Temperature	0.0 ~ 100.0°C Resolution 0.1°C		0.0 ~ 100.0°C Resolution 0.1°C		0.0 ~ 100.0°C Resolution 0.1°C		0.0 ~ 100.0°C Resolution 0.1°C		0.0 ~ 100.0°C Resolution 0.1°C	
mV(ORP)	---		-1999 ~ 1999 Resolution 1mV		-1999 ~ 1999 Resolution 1mV		-1999 ~ 1999 Resolution 1mV		-1999 ~ 1999 Resolution 1mV	
ION	---		---		0.0μ ~ 999g/L (mol/L)		---		---	
Conductivity	---		---		---		Cell constant 100m <sup>-1</sup> : 0.000mS/m ~ 19.99S/m Cell constant 10m <sup>-1</sup> : 0.0μ S/m ~ 1.999S/m Cell constant 1000m <sup>-1</sup> : 0.00mS/m ~ 199.9S/m Resolution 0.05% F.S.		---	
Dissolved Oxygen	---		---		---		---		0.00 ~ 1999mg/L Resolution 0.01mg/L	
Resistance	---		---		---		---		---	
SALT	---		---		---		---		---	
Saturation Oxygen	---		---		---		---		---	
Oxygen	---		---		---		---		---	
Repeatability pH	±0.01pH ±1digit		±0.01pH ±1digit		±0.01pH ±1digit		±0.01pH ±1digit		±0.01pH ±1digit	
Temperature	±0.1°C ±1digit		±0.1°C ±1digit		±0.1°C ±1digit		±0.1°C ±1digit		±0.1°C ±1digit	
mV(ORP)	---		±1mV ±1digi		±1mV ±1digi		±1mV ±1digi		±1mV ±1digi	
ION	---		---		±0.5%F.S. ±1digi		---		---	
Conductivity	---		---		---		±0.5%F.S. ±1digi		---	
Dissolved Oxygen	---		---		---		---		±0.1mg/L ±1digi	
Resistance	---		---		---		---		---	
Power supply	DC3V (LR6 dry cell battery) Option: AC adapter		DC3V (LR6 dry cell battery) Option: AC adapter		DC3V (LR6 dry cell battery) Option: AC adapter		DC3V (LR6 dry cell battery) Option: AC adapter		DC3V (LR6 dry cell battery) Option: AC adapter	
Mass	Approx. 300g		Approx. 300g		Approx. 330g		Approx. 330g		Approx. 330g	

	ES-51			OM-51	
	COND SAL RESI			DO	
	•RS-232C output (PC/Printer)			RS-232C output (PC/Printer)	
Measurement pH method	---			---	
ION	---			---	
Conductivity	AC bipolar method			---	
Dissolved Oxygen	---			Diaphragm galvanic battery method	
SALT	Conductivity conversion			---	
Resistance	Conductivity conversion			---	
Saturation Oxygen	---			Dissolved Oxygen conversion	
Oxygen	---			Dissolved Oxygen conversion	
Measurement pH range	---			---	
Temperature	0.0 ~ 100.0°C Resolution 0.1°C			0.0 ~ 100.0°C Resolution 0.1°C	
mV(ORP)	---			---	
ION	---			---	
Conductivity	Cell constant 100m <sup>-1</sup> : 0.000mS/m ~ 19.99S/m Cell constant 10m <sup>-1</sup> : 0.0μ S/m ~ 1.999S/m Cell constant 1000m <sup>-1</sup> : 0.00mS/m ~ 199.9S/m Resolution 0.05% F.S.			---	
Dissolved Oxygen	---			0.00 ~ 1999mg/L Resolution 0.01mg/L	
Resistance	Cell constant 100m <sup>-1</sup> : 5.000Ωm ~ 199.9kΩm Cell constant 10m <sup>-1</sup> : 50.00Ωm ~ 1.99MΩm Cell constant 1000m <sup>-1</sup> : 0.5000Ωm ~ 19.99kΩm Resolution 0.05% F.S.			---	
SALT	0.00 ~ 4.00% Resolution 0.01%			---	
Saturation Oxygen	---			0.0 ~ 199.9% Resolution 0.1%	
Oxygen	---			0.0 ~ 50.0% Resolution 0.1%	
Repeatability pH	---			---	
Temperature	±0.1°C ±1digit			±0.1°C ±1digit	
mV(ORP)	---			---	
ION	---			---	
Conductivity	±0.5%F.S. ±1digi			---	
Dissolved Oxygen	---			±0.1mg/L ±1digi	
Resistance	±0.5%F.S. ±1digi			---	
Power supply	DC3V (LR6 dry cell battery) Option: AC adapter			DC3V (LR6 dry cell battery) Option: AC adapter	
Mass	Approx. 300g			Approx. 300g	





# HORIBA

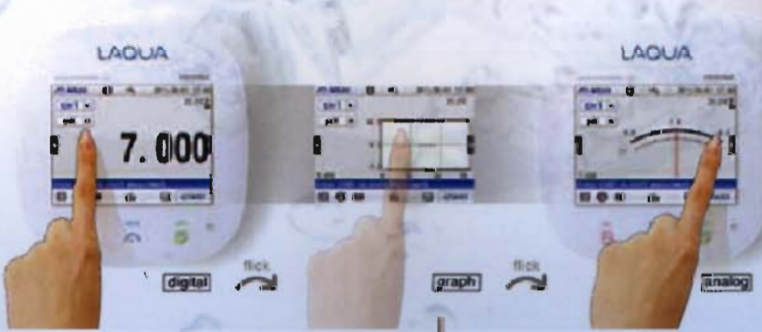
## Laboratory Water Quality Meter

- pH
- ORP
- ION
- Conductivity
- TDS
- Resistivity
- Salinity

## F-70 Series DS-70 Series

### Full-Range of Functions for Validation and Usability

- Periodic inspection mode: JIS/Pharmacopias/Digital Simulator
- Full support for various country pharmaceutical pure water guidelines
- Customizable auto hold function for calibration and measurement
- Simultaneous connection to a GLP/GMP compatible printer and PC
- Digital memory: Maximum 2,000 sets of measurement data can be recorded
- USB PC Communication \*(All models) and USB memory
- Multi-language support (Japanese, English, Chinese, Korean)



2-channel can be displayed simultaneously



- NAVI 2CH USB
- PC PRT ID
- USP/EP/JP

**F-71**  
CH.1 pH ORP



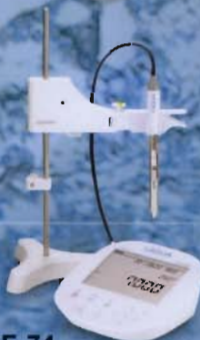
- NAVI 2CH USB
- PC PRT ID
- USP/EP/JP

**F-72**  
CH.1 pH ORP ION



- NAVI 2CH USB
- PC PRT ID
- USP/EP/JP

**F-73**  
CH.1 pH ORP ION  
CH.2 pH ORP ION



- F-74**
- CH.1 pH ORP  
CH.2 COND RESI SAL TDS
- NAVI 2CH USB PC PRT ID
  - USP/EP/JP



- F-74BW**
- CH.1 pH ORP ION  
CH.2 COND RESI SAL TDS
- NAVI 2CH USB PC PRT ID
  - USP/EP/JP



- DS-71**
- COND RESI SAL TDS
- PC PRT ID



- DS-72**
- COND RESI SAL TDS
- NAVI 2CH USB PC PRT ID
  - USP/EP/JP

# ■ F-70 series / DS-70 series Specifications

	F-71			F-72			F-73			F-74			F-74BW						
	CH.1	pH	ORP	CH.1	pH	ORP	ION	CH.1	pH	ORP	ION	CH.1	pH	ORP	CH.2	COND	RESI	SAL	TDS
Measurement pH method	Glass electrode method																		
ION	Ion electrode method																		
Conductivity	2 AC bipolar method																		
Salinity	Conversion from conductivity value																		
Resistivity	Conversion from conductivity value																		
TDS	Conversion from conductivity value																		
Measurement pH range	pH0.000 ~14.000 Resolution 0.001pH			pH0.000 ~14.000 Resolution 0.01/0.001pH			pH0.000 ~14.000 Resolution 0.01/0.001pH			pH0.000 ~14.000 Resolution 0.001pH									
mV(ORP)	±1999.9mV Resolution 0.1mV																		
Temperature(Display)	0.0 ~ 100.0°C(-30.0 ~ 130.0°C) Resolution 0.1°C																		
ION	0.00µg/L ~999µg/L(mol/L) Resolution Valid numbers 3 digits																		
Conductivity										Cell constant 100m <sup>1</sup> : 0.000mS/m ~ 19.99S/m Cell constant 10m <sup>1</sup> : 0.0µS/m ~ 1.999S/m Cell constant 1000m <sup>1</sup> : 0.00mS/m ~ 199.9S/m Resolution 0.05% of F.S.									
Salinity	0.00 ~80.00PPT(0.000%~8.000%) Resolution 0.01PPT(0.001%)																		
Resistivity										Cell constant 100m <sup>1</sup> : 0.00Ω·m ~ 199.9kΩ·m Cell constant 10m <sup>1</sup> : 0.0Ω·m ~ 1.999MΩ·m Cell constant 1000m <sup>1</sup> : 0.000Ω·m ~ 19.99kΩ·m Resolution 0.05% of F.S.									
TDS										0.01 mg/L ~1000 g/L Resolution 0.01mg/L		0.01 mg/L ~100 g/L Resolution 0.01mg/L							
Repeatability pH	±0.005pH±1digit			±0.001pH±1digit			±0.001pH±1digit			±0.005pH±1digit									
mV(ORP)	±0.1mV±1digit																		
Temperature	±0.1°C±1digit																		
ION	±0.5% ±1 digit of F.S.																		
Conductivity	±0.5% ±1 digit of F.S.																		
Resistivity	±0.5% ±1 digit of F.S.																		
Memory	999sets			2000sets			2000sets			2000sets			999sets						
Multilanguage display							Japanese/English/Chinese/Korean												
Power	AC adaptor 100 ~ 240V 50/60Hz																		
Power consumption	Approx. 0.7VA						Approx. 9.8VA						Approx. 0.7VA						
Mass of main unit	Approx. 500g						Approx. 700g						Approx. 500g						
Accessories included	Electrode stand Manual/AC adapter						Electrode stand/Manual/AC adapter/Cover						Electrode stand Manual/AC adapter						

	DS-71				DS-72			
	COND	RESI	SAL	TDS	COND	RESI	SAL	TDS
Measurement pH method								
ION								
Conductivity	2 AC bipolar method							
Salinity	Conversion from conductivity value							
Resistivity	Conversion from conductivity value							
TDS	Conversion from conductivity value							
Measurement pH range								
mV(ORP)								
Temperature(Display)	0.0 ~ 100.0°C(-30.0 ~ 130.0°C) Resolution 0.1°C							
ION								
Conductivity	Cell constant 100m <sup>1</sup> : 0.000mS/m ~ 19.99S/m Cell constant 10m <sup>1</sup> : 0.0µS/m ~ 1.999S/m Cell constant 1000m <sup>1</sup> : 0.00mS/m ~ 199.9S/m Resolution 0.05% of F.S.							
Salinity	0.00 ~80.00PPT(0.000%~8.000%) Resolution 0.01PPT(0.001%)							
Resistivity	Cell constant 100m <sup>1</sup> : 0.00Ω·m ~ 199.9kΩ·m Cell constant 10m <sup>1</sup> : 0.0Ω·m ~ 1.999MΩ·m Cell constant 1000m <sup>1</sup> : 0.000Ω·m ~ 19.99kΩ·m Resolution 0.05% of F.S.							
TDS	0.01 mg/L~100 g/L Resolution 0.01mg/L				0.01 mg/L~1000 g/L Resolution 0.01mg/L			
Repeatability pH								
mV(ORP)								
Temperature	±0.1°C±1digit							
ION								
Conductivity	±0.5% ±1 digit of F.S.							
Resistivity	±0.5% ±1 digit of F.S.							
Memory	999sets				2000sets			
Multilanguage display					Japanese/English/Chinese/Korean			
Power	AC adaptor 100 ~ 240V 50/60Hz							
Power consumption	Approx. 0.7VA				Approx. 9.8VA			
Mass of main unit	Approx. 500g				Approx. 700g			
Accessories included	Electrode stand Manual/AC adapter				Electrode stand/Manual /AC adapter/Cover			



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