■U-50 Series Specifications

		U-51	U-52	U-52G	U-53	U-53G	U-54	U-54G				
	Measurement temperature			-10 to 55℃								
	Maximum sensor diameter	Approx. 96 mm										
Sensor Probe	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, SUS	304, FKM, PEEK,Q, titaniun	n, 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 Approx. 70 hours (without backlight)										
	Storage temperature	-10 to 60°C										
	Ambient temperature			-5 to 45℃								
рН	Measurement principle			Glass electrode method								
	Range			pH0 to 14								
●Two-point calibration ●Automatic temperature	Resolution			0.01pH								
	Repeatability			±0.05pH								
	Accuracy	±0.1pH										
	Measurement principle		Р	atinum electrode method								
ridation	Range			-2000 mV to +2000 mV								
Reduction Potential (ORP)	Resolution			1 mV								
	Repeatability			±5 mV								
	Accuracy	±15 mV										
ssolved Oxygen (DO)	Measurement principle			Polarographic method								
alinity conversion	Range	0 to 50.0 mg/L										
to 70 PPT/automatic)	Resolution	0.01 mg/L										
•Automatic temperature	Repeatability	±0.1 mg/L										
ompensation	Accuracy	0 to 20 mg/L: ±0.2 mg/L 20 to 50 mg/L: ±0.5 mg/L										
	Measurement principle	4 AC electrode method										
Conductivity (COND) ●Auto range ●Automatic temperature conversion (25°C)	Range	0 to 10 S/m (0 to 100 mS/cm)										
		0.000 to 0.999 mS/cm: 0.001 mS/cm										
	Resolution	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										
	Repeatability	±0.05% F.S.										
	Accuracy	*±1% F.S. (Median of two-point calibration)										
	Measurement principle	Conductivity conversion										
	Range	0 to 70 PPT (permillage)										
linity	Resolution	0.1 PPT										
	Repeatability			±1 PPT								
	Accuracy	±3 PPT										
	Measurement principle	Conductivity conversion										
tal Dissolved Solid	Range	0 to 100 g/L										
(TDS) •Conversion factor setting	Resolution	0.100 g/L 0.1% F.S.										
	Repeatability	±2 g/L										
	Accuracy	±2 g/L ±5 g/L										
	Measurement principle	En g/L Conductivity conversion										
	Range	0 to 50 <i>σ</i> t										
awater specific	Resolution			0.1 <i>σ</i> t								
-												
avity	Repeatability											
avity	Repeatability Accuracy			±2 σ t								
avity	Accuracy			±2 σ t ±5 σ t								
avity	Accuracy Measurement principle			±2 σ t								
avity Display σt, σ0, σ15	Accuracy			$\pm 2 \sigma t$ $\pm 5 \sigma t$ Thermistor method $-10 \text{ to } 55 ^{\circ}\text{C}$								
avity Display σt, σ0, σ15	Accuracy Measurement principle Range Resolution		*+	$\pm 2 \sigma t$ $\pm 5 \sigma t$ Thermistor method -10 to 55°C 0.01°C	t)							
avity Display σt, σ0, σ15	Accuracy Measurement principle Range Resolution Repeatability			$\pm 2\sigma\mathrm{t}$ $\pm 5\sigma\mathrm{t}$ Thermistor method -10 to 55°C 0.01°C 0.10°C (at calibration poin								
avity Display σt, σ0, σ15	Accuracy Measurement principle Range Resolution Repeatability Accuracy		JIS class B platin	$\pm 2 \sigma t$ $\pm 5 \sigma t$ Thermistor method $-10 to 55^{\circ}C$ $0.01^{\circ}C$ $0.10^{\circ}C (at calibration point thermometer sensor (-2000) and the sensor (-2$	±0.3+0.005 t)	and 90° scattering method	LED light source and	l 90° scatterina metho				
avity Display σ t, σ 0, σ 15	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle			$\pm 2\mathcal{O}\mathrm{t}$ $\pm 5\mathcal{O}\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\!\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration poin thermometer sensor ($\pm 2\mathrm{col}\mathrm{C}$) scattering method	±0.3+0.005 t) Tungsten lamp source a	and 90° scattering method						
avity Display のt, の0, の15	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range		JIS class B platin LED light source and 30 0 to 800	$\pm 2\sigma\mathrm{t}$ $\pm 5\sigma\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration pointum thermometer sensor (\pm 0) scattering method NTU	±0.3+0.005 t) Tungsten lamp source a 0 to 1	000 NTU	0 to 1	000 NTU				
avity Display \mathcal{O} t, \mathcal{O} 0, \mathcal{O} 15 Emperature	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle		JIS class B platin LED light source and 30	$\pm 2\sigma\mathrm{t}$ $\pm 5\sigma\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration pointum thermometer sensor (\pm 0) scattering method NTU	±0.3+0.005 t) Tungsten lamp source a 0 to 1 0 to 9.99 NTU: 0.01 NTU	000 NTU J 10 to 99.9 NTU: 0.1 NTU	0 to 1 0 to 0.99 NTU: 0.01 NT	000 NTU J 1 to 99.9 NTU: 0.1 NT				
envity Display \mathcal{O} t, \mathcal{O} 0, \mathcal{O} 15 Emperature	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution	_	JIS class B platin LED light source and 30 0 to 800 0 to 99.9 NTU: 0.1 NTU	$\pm 2\mathcal{O}\mathrm{t}$ $\pm 5\mathcal{O}\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration poin um thermometer sensor ($\pm 20^\circ\mathrm{C}$) scattering method NTU 00 to 800 NTU: 1 NTU	±0.3+0.005 t) Tungsten lamp source a 0 to 1 0 to 9.99 NTU: 0.01 NTU 100 to 100	000 NTU J 10 to 99.9 NTU: 0.1 NTU 10 NTU: 1 NTU	0 to 1 0 to 0.99 NTU: 0.01 NT 100 to 100	J 1 to 99.9 NTU: 0.1 NT 0 NTU: 1 NTU				
envity Display \mathcal{O} t, \mathcal{O} 0, \mathcal{O} 15 Emperature	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range	_	JIS class B platin LED light source and 30 0 to 800	$\pm 2\mathcal{O}\mathrm{t}$ $\pm 5\mathcal{O}\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration poin um thermometer sensor ($\pm 20^\circ\mathrm{C}$) scattering method NTU 00 to 800 NTU: 1 NTU	E0.3+0.005 t) Tungsten lamp source a 0 to 1 0 to 9.99 NTU: 0.01 NTU 100 to 100 ±3% (Reading) or ±0.1 0 to 10 N	000 NTU J 10 to 99.9 NTU: 0.1 NTU	0 to 1 0 to 0.99 NTU: 0.01 NT	000 NTU J 1 to 99.9 NTU: 0.1 NT IO NTU: 1 NTU NTU whichever is gre				
avity Display \mathcal{O} t, \mathcal{O} 0, \mathcal{O} 15 mperature	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability	_	JIS class B platin LED light source and 30 0 to 800 0 to 99.9 NTU: 0.1 NTU 1 *±5% (Reading) or ± 0.5 N	$\pm 2\mathcal{O}\mathrm{t}$ $\pm 5\mathcal{O}\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration poin um thermometer sensor ($\pm 20^\circ\mathrm{C}$) scattering method NTU 00 to 800 NTU: 1 NTU	±0.3+0.005 t) Tungsten lamp source a 0 to 1 0 to 9.99 NTU: 0.01 NTU 100 to 100 ±3% (Reading) or ±0.1 0 to 10 NTU 10 to 1000 NTU	000 NTU J 10 to 99.9 NTU: 0.1 NTU 10 NTU: 1 NTU NTU whichever is greater TU: ±0.5 NTU	0 to 0.99 NTU: 0.01 NT 0 to 0.99 NTU: 0.01 NT 100 to 100 ±5% (Reading) or ± 0.5	000 NTU J 1 to 99.9 NTU: 0.1 NT IO NTU: 1 NTU NTU whichever is gre				
avity Display \mathcal{O} t, \mathcal{O} 0, \mathcal{O} 15 Emperature	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability Accuracy	_	JIS class B platin LED light source and 30 0 to 800 0 to 99.9 NTU: 0.1 NTU 1 *±5% (Reading) or ± 0.5 N	$\pm 2\mathcal{O}\mathrm{t}$ $\pm 5\mathcal{O}\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration poin um thermometer sensor ($\pm 20^\circ\mathrm{C}$) scattering method NTU 00 to 800 NTU: 1 NTU	±0.3+0.005 t) Tungsten lamp source :	000 NTU J 10 to 99.9 NTU: 0.1 NTU 10 NTU: 1 NTU NTU whichever is greater FU: ±0.5 NTU TU: 3% (Reading)	0 to 1 0 to 0.99 NTU: 0.01 NT 100 to 100 ±5% (Reading) or ± 0.5 ±5% (Reading) or ±1	000 NTU J 1 to 99.9 NTU: 0.1 N O NTU: 1 NTU NTU whichever is grea				
avity Display \mathcal{O} t, \mathcal{O} 0, \mathcal{O} 15 Imperature	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability Accuracy	_	JIS class B platin LED light source and 30 0 to 800 0 to 99.9 NTU: 0.1 NTU 1 *±5% (Reading) or ± 0.5 N	$\pm 2\mathcal{O}\mathrm{t}$ $\pm 5\mathcal{O}\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration poin um thermometer sensor ($\pm 20^\circ\mathrm{C}$) scattering method NTU 00 to 800 NTU: 1 NTU	E0.3+0.005 t) Tungsten lamp source :	000 NTU J 10 to 99.9 NTU: 0.1 NTU 10 NTU: 1 NTU NTU whichever is greater FU: ±0.5 NTU TU: 3% (Reading)	0 to 0.99 NTU: 0.01 NT 0 to 0.99 NTU: 0.01 NT 100 to 100 ±5% (Reading) or ± 0.5	000 NTU J 1 to 99.9 NTU: 0.1 N IO NTU: 1 NTU NTU whichever is greater NTU whichever is greater				
avity Display \mathcal{O} t, \mathcal{O} 0, \mathcal{O} 15 Imperature Display (TURB)	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability	_	JIS class B platin LED light source and 30 0 to 800 0 to 99.9 NTU: 0.1 NTU 1 *±5% (Reading) or ± 0.5 N	$\pm 2\mathcal{O}\mathrm{t}$ $\pm 5\mathcal{O}\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration poin um thermometer sensor ($\pm 20^\circ\mathrm{C}$) scattering method NTU 00 to 800 NTU: 1 NTU	E0.3+0.005 t) Tungsten lamp source : 0 to 1 0 to 9.99 NTU: 0.01 NTU 100 to 100 to 100 23% (Reading) or ±0.1 0 to 10 NT 10 to 1000 NT or ±1 NTU wh Pressure method 0 to 30 m	000 NTU J 10 to 99.9 NTU: 0.1 NTU 10 NTU: 1 NTU NTU whichever is greater FU: ±0.5 NTU TU: 3% (Reading)	0 to 1 0 to 0.99 NTU: 0.01 NT 100 to 100 ±5% (Reading) or ± 0.5 ±5% (Reading) or ±1	000 NTU J 1 to 99.9 NTU: 0.1 N O NTU: 1 NTU NTU whichever is grea				
avity Display \mathcal{O} t, \mathcal{O} 0, \mathcal{O} 15 Imperature rbidity (TURB)	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability Accuracy	_	JIS class B platin LED light source and 30 0 to 800 0 to 99.9 NTU: 0.1 NTU 1 *±5% (Reading) or ± 0.5 N	$\pm 2\mathcal{O}\mathrm{t}$ $\pm 5\mathcal{O}\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration poin um thermometer sensor ($\pm 20^\circ\mathrm{C}$) scattering method NTU 00 to 800 NTU: 1 NTU	E0.3+0.005 t) Tungsten lamp source : 0 to 1 0 to 9.99 NTU: 0.01 NTU 100 to 100 to 100 ±3% (Reading) or ±0.1 0 to 10 NT 10 to 1000 NT or ±1 NTU wh Pressure method 0 to 30 m 0.05 m	000 NTU J 10 to 99.9 NTU: 0.1 NTU 10 NTU: 1 NTU NTU whichever is greater FU: ±0.5 NTU TU: 3% (Reading)	0 to 1 0 to 0.99 NTU: 0.01 NT 100 to 100 ±5% (Reading) or ± 0.5 ±5% (Reading) or ±1	000 NTU J 1 to 99.9 NTU: 0.1 N O NTU: 1 NTU NTU whichever is grea				
avity Display \mathcal{O} t, \mathcal{O} 0, \mathcal{O} 15 Imperature Display (TURB)	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability Measurement principle Range Resolution Repeatability	_	JIS class B platin LED light source and 30 0 to 800 0 to 99.9 NTU: 0.1 NTU 1 *±5% (Reading) or ± 0.5 N	$\pm 2\mathcal{O}\mathrm{t}$ $\pm 5\mathcal{O}\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration poin um thermometer sensor ($\pm 20^\circ\mathrm{C}$) scattering method NTU 00 to 800 NTU: 1 NTU	E0.3+0.005 t) Tungsten lamp source :	000 NTU J 10 to 99.9 NTU: 0.1 NTU 10 NTU: 1 NTU NTU whichever is greater FU: ±0.5 NTU TU: 3% (Reading)	0 to 1 0 to 0.99 NTU: 0.01 NT 100 to 100 ±5% (Reading) or ± 0.5 ±5% (Reading) or ±1	000 NTU J 1 to 99.9 NTU: 0.1 NT IO NTU: 1 NTU NTU whichever is grea				
Feawater specific gravity Display Øt, Ø0, Ø15 Femperature Furbidity (TURB)	Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability Accuracy Measurement principle Range Resolution Repeatability Accuracy	_	JIS class B platin LED light source and 30 0 to 800 0 to 99.9 NTU: 0.1 NTU 1 *±5% (Reading) or ± 0.5 N	$\pm 2\mathcal{O}\mathrm{t}$ $\pm 5\mathcal{O}\mathrm{t}$ Thermistor method $-10\mathrm{to}55^\circ\mathrm{C}$ $0.01^\circ\mathrm{C}$ $0.10^\circ\mathrm{C}$ (at calibration poin um thermometer sensor ($\pm 20^\circ\mathrm{C}$) scattering method NTU 00 to 800 NTU: 1 NTU	E0.3+0.005 t) Tungsten lamp source : 0 to 1 0 to 9.99 NTU: 0.01 NTU 100 to 100 to 100 ±3% (Reading) or ±0.1 0 to 10 NT 10 to 1000 NT or ±1 NTU wh Pressure method 0 to 30 m 0.05 m	000 NTU J 10 to 99.9 NTU: 0.1 NTU 10 NTU: 1 NTU NTU whichever is greater FU: ±0.5 NTU TU: 3% (Reading)	0 to 1 0 to 0.99 NTU: 0.01 NT 100 to 100 ±5% (Reading) or ± 0.5 ±5% (Reading) or ±1	000 NTU J 1 to 99.9 NTU: 0.1 N O NTU: 1 NTU NTU whichever is grea				

- 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).