SPECIFICATIONS

HAND HELD PARTICLE COUNTER

KC-51

RION CO., LTD.

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No. 10015-6E 23-10

Outline

The hand held particle counter KC-51 is designed to measure the size and number of airborne particles using the light scattering method, to determine the particle number concentration. This unit conforms to ISO 21501-4:2007 and JIS B 9921:2010 at around room temperature.

- Particle detection is possible in two or three size ranges.
  Two size ranges: ≥0.3 µm and ≥0.5 µm, or ≥0.5 µm and ≥5.0 µm
  Three size ranges: ≥0.3 µm, ≥0.5 µm and ≥5.0 µm
- Flow rate 2.83 L/min.
- Two measurement modes are provided, allowing automatic measurement of a specified volume.
- Measurement results can be displayed as cumulative count or particle number concentration.
- Capability for storing 100 results in internal memory.
- USB connector to printout measurement results by optional USB printer or for download to the computer using supplied download software and optional USB cable.
- Compact size and battery operation allows hand-held use in the field.
- AC adapter can be used to power the unit from a regular outlet.

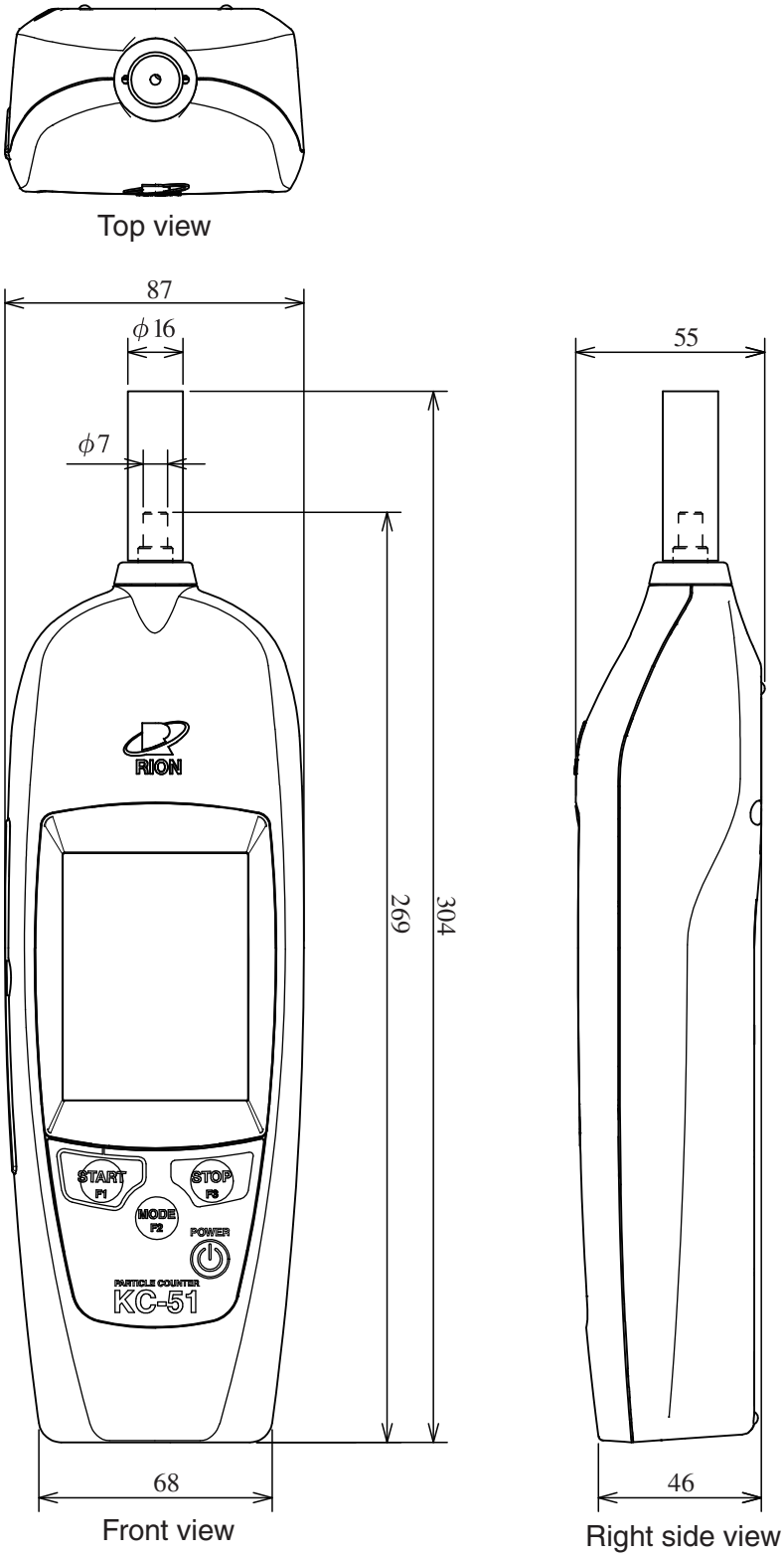
Specifications

Optical system	90° sideway light scattering method
Light source	Laser diode (wavelength 780 nm, rated output 35 mW)
Laser product class	Class 1, IEC 60825-1:2014 Internal particle detection mechanism uses Class 3B laser
Collecting optics	Spherical mirror
Light detector	Photodiode
Allowable measurement sample types	Air
Pump	Rotary carbon vane
Calibration	By polystyrene latex (PSL) particles with refractive index 1.6
Minimum detectable particle size	0.3 µm (for spherical particles with refractive index 1.6)
Measurable particle size ranges	Two channels (≥0.3 µm, ≥0.5 µm or ≥0.5 µm, ≥5 µm) or three channels (≥0.3 µm, ≥0.5 µm, and ≥5 µm)

Counting efficiency	50% ±20% (measuring PSL particles in the range of minimum detectable particle size) 100% ±10% (measuring PSL particles in the range with 1.5 times to 2 times larger than minimum detectable particle size)
Size resolution	15% or less (in the vicinity of 0.5 μm PSL particles)
Responsivity	0.5% or less
Maximum particle number concentration	140,000,000 particles/m^3 (coincidence loss within 10%)
False count rate	140 particles/m^3 or less (95% confidence interval)
Flow rate	2.83 L/min ±10% (within ±5% at around room temperature)
Warm-up time	1 minute
Sample pressure	Atmospheric pressure
Measurement time accuracy	Within ±1%
Measurement modes	Manual measurement Automatic measurement Averaging measurement: 2 times to 10 times average measurement or none
Sample volume	0.283 L, 1 L, 2.83 L, 10 L, 28.3 L
Hold time	Max. 10 seconds
Measurement value	Cumulative / number concentration (unit: 1 L, 28.3 L, 1000 L)
Display	
LCD	160 × 256 dot matrix type LCD (3.2-inch monochrome), with backlight Displays the measurement value and message etc.
LED	Shows battery status
Controls	
Buttons	
START	Starts measurement Assigned to various other functions on screens other than measurement screen
STOP	Stops measurement Assigned to various other functions on screens other than measurement screen
MODE	Assigned to various other functions on screens
POWER	Turns the unit on/off

Inputs/outputs	
USB connector	For connection to a computer or printer Computer can download data from internal memory of KC-51 USB printer can be used to produce hard copy
Power connector (DC)	Connect an AC adaptor
INLET	For sample air input Mount isokinetic probe if no tube is connected
Memory functions	Measurement data are automatically saved to internal memory in text (TSV) form using rotating deletion
Environmental Requirements	
Operation Environments	
	Indoor Use Only
Altitude	Up to 2000 m
Supply Voltage Fluctuations	
	100 V to 240 V AC ± 10%
Overvoltage Category	Ⅱ
Pollution Degree	2
Protection Class	Ⅰ
Environmental conditions for storage	
	–10˚C to +50˚C, 90% RH or less (no condensation)
Environmental conditions for operation	
	+10˚C to +40˚C, 85% RH or less (no condensation)
Power	Internal battery or supplied AC adapter
AC adapter	Rated input: 100 V to 240 V AC, 50/60 Hz, 0.9 A Rated output: 12 V DC, Maximum power consumption 12 VA (in case of charge)
Internal battery	Lithium-ion Battery life: Approx. 6.0 hours (at room temperature and continuous measurement; battery life may vary depending on usage environmental conditions, operation status and setting parameters of the unit) Charging time: Approx. 4.0 hours (when power is off)
Dimensions	Approx. 304 mm (H) × 87 mm (W) × 55 mm (D) (maximum) Approx. 269 mm (H) × 87 mm (W) × 55 mm (D) (without protruding parts)
Weight	Approx. 780 g

Supplied accessories	AC adapter KR-12-003 (include power cord)	1
	Hand strap	1
	Zero count filter	1
	Silicone tube (9 mm × 6 mm dia., 0.04 m)	1
	Carrying case	1
	CD-ROM (Instruction manual / Download software / USB driver)	1
	Concise manual	1
	Inspection certificate	1
Factory option	ISO 21501-4:2018/Amd 1:2023 compliant	KC-51-S30
Options	Stand	KC-52-065
	USB cable (A to mini B)	
	Printer (with AC adapter / USB conversion connector)	DPU-S245
	Thermal paper (10 rolls)	TP-34
	Lint-free thermal paper (6 rolls)	TP-33
Calibration interval	One year	



Unit: mm

Dimensional Drawings

Specifications subject to change without notice