



**RION**



# ***Airborne Particle Counter KC-32/KC-31***





# KC-32

Flow rate  
50 L/min

## Airborne Particle Counter KC-32/KC-31

Compliant with ISO 21501-4 (JIS B 9921)

Suitable for clean air management in a pharmaceutical manufacturing environment

(Evaluate air cleanliness class according to ISO 14644-1, PIC/S GMP Annex1, EU-GMP Annex 1)

High flow volume provides shortened measurement time which makes the product useful also for electronic device manufacturing sites

Light weight (world top ranking\*) and battery powered operation are great for use anywhere

- Particle size range 0.3, 0.5, 1.0, 2.0, 5.0, 10.0  $\mu\text{m}$
- Approx. up to 5 000 measurement results can be stored in internal memory and can transfer to USB memory afterwards.
- Stainless steel chassis provides improved resistance against chemicals
- Rechargeable lithium ion battery for enhanced environment-friendliness. Two batteries can be inserted to provide extended operation time (unit comes with one battery as standard.)
- 21 CFR Part 11 compliant  
Password based user level management (Administrator/User/Guest), with different available functions  
Operation history can be viewed with supplied software (Log Viewer)
- Selectable display language (English or Japanese)

\*KC-32 (minimum particle size 0.3  $\mu\text{m}$ , flow rate 50 L/min, two batteries inserted)  
equivalent air-borne particle counter, as of April 2012, Rion data

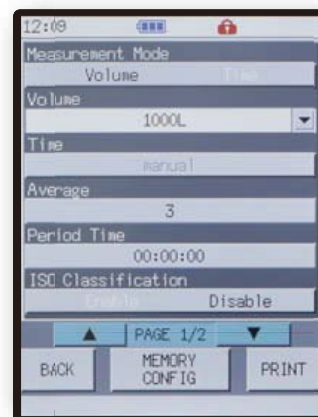
### Sample Screen



Login Screen (security)



Measurement Screen



Measurement Parameter Setting Screen





Built-in printer

Input/Output Connectors  
USB/Ethernet

Touch panel  
5.7 inch color LCD

**KC-31**  
Flow rate  
28.3 L/min

SIZE [µm]	COUNT
0.3	61436
0.5	7159
1.0	523
2.0	197
5.0	22
10.0	7

**Sample Printout**

```

*****
2012-03-06 19:52:54
KC-32          TIME: 60s
PERIOD: 00:01:00  AVG: None
Label:         ID: Admin
*****

#1 2012-03-06 19:52:54 60s
Label:
µm    CUMU.    DIFF.Counts
0.3   45060     26655
0.5   18405     14591
1.0   3814      3459
2.0   355       287
5.0   68        50
10.0  18         18

#1 2012-03-06 19:53:54 60s
Label:

```

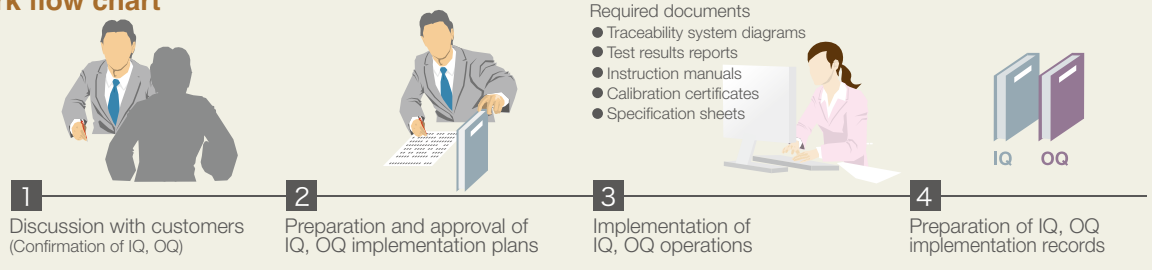
**Log Viewer Screen (Audit Trail Display Application)**

Date	ID	Class	Event
2012-03-06 14:26:02	Root	Security	Power-on
2012-03-06 14:26:14	Administrator	Security	Log-in
2012-03-06 14:26:33	Administrator	Config.	Change Measurement Parameter. Time 00:00:00 => 00:00:15
2012-03-06 14:26:43	Administrator	Config.	Change Measurement Parameter. Period Time 00:00:15 => 00:00:00
2012-03-06 14:26:49	Administrator	Measurement	Measurement START
2012-03-06 14:27:18	Administrator	Config.	Change Measurement Parameter. Measurement Mode Time => Volume
2012-03-06 14:27:27	Administrator	Measurement	Measurement START
2012-03-06 14:27:45	Administrator	Config.	Change Measurement Parameter. Measurement Mode Volume => Time
2012-03-06 14:27:57	Administrator	Config.	Change Measurement Parameter. Time 00:00:15 => 00:00:00
2012-03-06 14:27:52	Administrator	Measurement	Measurement START
2012-03-06 14:27:57	Administrator	Measurement	Measurement STOP
2012-03-06 14:28:06	Administrator	Config.	Change Measurement Parameter. Time 00:00:00 => 00:00:10
2012-03-06 14:28:09	Administrator	Measurement	Measurement START
2012-03-06 14:28:11	Administrator	Measurement	Measurement CANCEL
2012-03-06 14:28:28	Administrator	Security	Shutdown
2012-03-06 14:28:38	Administrator	Security	Power-off
2012-03-06 14:29:03	Root	Security	Power-on
2012-03-06 14:29:28	User	Security	Log-in
2012-03-06 14:29:32	User	Measurement	Measurement START
2012-03-06 14:30:06	User	Measurement	Measurement START
2012-03-06 14:30:08	User	Measurement	Measurement CANCEL
2012-03-06 14:30:13	User	Security	Shutdown
2012-03-06 14:30:23	User	Security	Power-off
2012-03-06 14:32:02	Root	Security	Power-on
2012-03-06 14:32:13	Administrator	Security	Log-in
2012-03-06 14:32:22	Administrator	System	Copy to usb_memory

**Support for validation works**

We can support your validation works (IQ, OQ) for KC-32/31.

**Work flow chart**



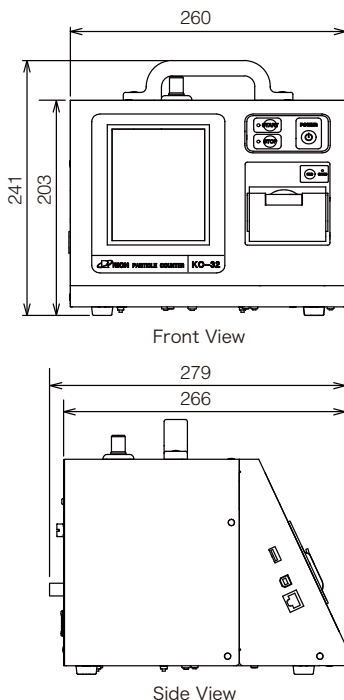
Required documents

- Traceability system diagrams
- Test results reports
- Instruction manuals
- Calibration certificates
- Specification sheets



Specifications	KC-32	KC-31	
Optical system	Light scattering method		
Light source	Laser diode (wavelength 780 nm, rated output 100 mW)		
Laser product class	Class 1, IEC60825-1		
Light detector	Photodiode		
Flow rate	50 L/min	28.3 L/min	
Particle size ranges	6 channels: $\geq 0.3$ , $\geq 0.5$ , $\geq 1.0$ , $\geq 2.0$ , $\geq 5.0$ , $\geq 10.0 \mu\text{m}$		
Counting efficiency	50 $\pm$ 20 % (By PSL particles of/near the lowest measurable particle size), 100 $\pm$ 10 % (By PSL particle of 1.5 to 2 times of the lowest measurable particle size)		
Maximum particle number concentration	16 000 000 particles/cubic meter (coincidence loss within 10 %)	28 000 000 particles/cubic meter (coincidence loss within 10 %)	
False count	Max. 4 particles/m <sup>3</sup>	Max. 7 particles/m <sup>3</sup>	
Max. length of sampling tube	10 m (supplied sampling tube is 1 m)		
Measurement time/Measurement volume	Manual, setting range 10 sec to 1 hr (1-sec units)/10 L, 28.3 L, 1 00 L, 283 L, 1 000 L		
Measurement display	Cumulative value, differential value/1 L, 28.3 L, 1 000 L, no conversion		
Number of continuous measurements/Measurement time	Max. 99 times, max. 24 hours (set as measurement cycle)		
Number of stored measurement results/Store format	Approx. 5 000 (depends on measurement data volume; rotating principle)/Tab-Separated Value (TSV) text file		
Alarm function	Threshold setting range 1 to 99 999 999 particles (1-particle steps)		
Security function	3-stage permissions level management (Administrator/User/Guest), password based		
Display	5.7 inch color LCD panel		
Display language	English, Japanese		
Operation method	Touch panel, buttons		
Printer	Built-in; measurement results and measurement parameters can be printed		
Input/output connectors	Count alarm terminals	Relay contacts, linked to alarm function	
	USB port 1	Type A, for copying measurement data from internal memory to USB memory media	
	USB port 2	Type B, for connection to computer	
	Ethernet port	RJ-45, for connection to computer (for details on usage, please contact Rion Corporation.)	
Environmental conditions for operation	10 °C to 35 °C, less than 85 % RH (no condensation, 30 % to 80 % when using printer)		
Power	AC adapter	100 V to 240 V AC, 50/60 Hz	
	Power consumption	Approx. 29 VA (when not charging), approx. 82 VA (when charging, max. load)	Approx. 15 VA (when not charging), approx. 68 VA (when charging, max. load)
	Lithium ion battery	Removable internal battery; 1 supplied, max. 2 batteries can be set	
	Operation time on one charge	With 1 battery: approx. 3.5 hrs, with 2 batteries: Approx. 7 hours	With 1 battery: approx. 6 hrs, with 2 batteries: approx. 12 hours
Charging time	When charging from KC-32/31: approx. 3 hrs (1 battery), approx. 5 hrs (2 batteries)/When using charger: approx. 4 hrs		
Dimensions and weight	203 mm (H) x 260 mm (W) x 266 mm (D) (excl. protruding parts); approx. 5.5 kg (with 1 battery), approx. 6 kg (with 2 batteries)		
Supplied accessories	Sampling tube (plastic, 1 m), constant speed suction probe, zero count filter, AC adapter, power cord, battery x 1, quick instruction manual, CD-ROM (Full instruction manual, Audit trail display application Log Viewer), Thermal paper x 1		
Options	Sampling tube, Spare battery, charger, USB memory media, carrying case, USB cable, Thermal paper TP-34, Lint-free thermal paper TP-33		
Factory options	D/A converter interface (with support for 2 particle sizes), Outlet		

### KC-32/31 Dimensional Drawing (Unit : mm)



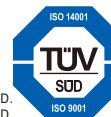
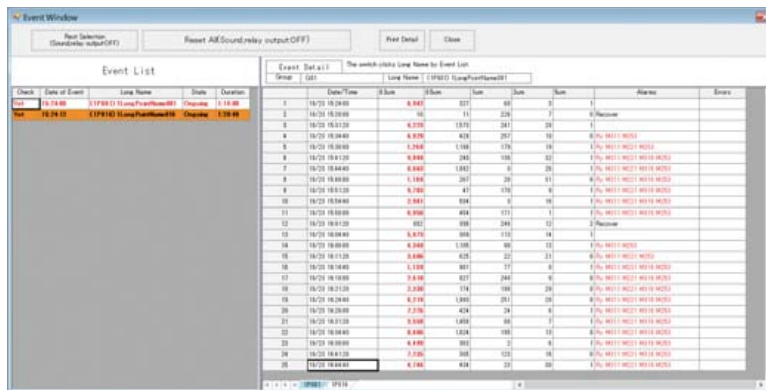
### RP Monitor Evo10 K1701 Ver.2

Options

Used for controlling particle counters to regulate the start/end of measurement and turn the light source/built-in pump on and off Measurement time, period, number of measurements, alarm, and conversion settings

- Allows control of up to 8 particle counters in serial mode, using 8 ports.

Operating system: Microsoft Windows 10 Pro 64 bit



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\* Specifications subject to change without notice.

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