

QR's OF CLEAN AIR CHEMICAL UNIT (PAPR)

SL NO	QUALITATIVE / REQUIREMENTS
1.	Should have air flow of 140-200 ltr/min
2.	Should have filter to clean the dust particles of chemical and fumes of chemicals
3.	Weight of the whole unit should not be more than 2.5 kg
4.	Noise level should not be more than 60 db.
5.	Should have rechargeable battery.
6.	Minimum Battery lifetime should be 500 charging cycles.
7.	Belt size should be in range between 75 cm to 110 cm.
8.	Should be operable in temperature ranges 10°C to 50°C
9.	Should be operable in humidity range 20 % to 80 % RH
10.	System should have stand by battery which can be charged separately with the help of charger
11.	Should be close to body reducing snag Hazards and ensure comfort
12.	Should have for TFT display, Flow rate, Filter type, Battery status in %, time and date
13.	Should have standard certification
14.	Should be user friendly
15.	Machine should be rugged
16.	Should be anti-Corrosive
17.	Should be aesthetic.
18.	Filter of ABEK2P3 to be used with one spare filter with each filter fitted (EN 12941/12942 TH1/TH2/TH3/TM3)
19.	Filter should be replaceable.
20.	Conformity Certification as per norms for each filter

Note- All firms are requested to provide the following.

1. Original Brochure of product by OEM.
2. Detail literature about the product.
3. Comprehensive comments for in co-operation in the specifications.

The Sub-group has decided to upload the QRs on MHA and BSF website for 15 days to invite the views/ comments/ suggestions of prospective bidders to make the QRs more broad based.


(Vikas Singh)
Dy Comdt (Mod)

QRS OF DIGITAL MELTING POINT APPARATUS

S/No.	Specifications	Qualitative Requirements
1	Temperature display	Melting point and melting point range
2	Start temp. range	(Ambient +10°C) to 390°C, 0°C minimum set point
3	Stop temp. range	(Start temperature + 4°C) to 395°C
4	Temperature resolution	0.1°C
5	Ramp rate	0.1°C to 20°C per minute (0.1°C increments)
6	Heat-up time	less than 15 minutes (50°C to 350°C)
7	Cool -down time	less than 15 minutes (350°C to 50°C)
8	Temperature accuracy	± 0.4°C (up to 100°C)
		± 0.6°C (up to 250°C)
		± 0.9°C (up to 395°C)
9	Reproducibility	0.2°C
10	Temperature Sensor	Platinum RTD (built-in)
11	Oven control	Closed-loop PID
12	Display	Back-lit touchscreen LCD more than 5.50"
13	Printer interface	RS-232 serial port, Support Epson compatible dot-matrix printers and USB.
14	Computer interface	USB. All instrument functions can be queried and controlled through a high-level & user friendly command set.
15	Software	Windows compatible (USB port)
16	Capillaries :-	
	Dimension	1.4 mm to 2.0 mm outside dia, 100 mm length
	Capacity	Up to 3 tubes simultaneously
	Fill height	2 mm to 3 mm
17	Ext. RTD input	100 Ω Platinum RTD. $\alpha = 0.00385 \Omega / \Omega / ^\circ\text{C}$
18	Power	90 to 264 VAC. 47 to 63Hz 125 W
19	Weight	less than 7 Kg
20	Operating temperature	0°C to 40°C non-condensing
21	Warranty	One-year parts and labour on defects in materials and workmanship
22	Inventory should include following items:	i) Melting point apparatus with USB port. ii) Portable computer system loaded with system software and specific apparatus software with accessories. iii) Compatible printer with accessories.(LaserJet)
GENERAL REQUIREMENTS:-		
1.	Completely automated operation.	
2.	PID- controlled temperature ramping.	
3.	Digital movie of each melt.	
4.	Stand-alone operation and computer control (USB).	
5.	Printer Output.	
6.	Up to three samples should be analysed simultaneously.	
7.	Wide observation window, with an illuminated magnification lens, allowing users to observe the samples at all times.	
8.	Linear temperature ramping.	
9	A Precision Platinum RTD sensor to provide fast and accurate temperature reading from room temperature to 395°C with 0.1°C resolution.	
10	Unattended operation eliminating the need for an operator to be present.	
11	A built-in digital camera that continuously captures real-time images of the samples. Digital image processing to determine results.	

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12	Melting points and melting ranges should be prominently displayed on the front panel and automatically recorded into memory for later review.
13	Simple operation to select the start temperature, ramp rate, stop temperature. Results should be easily seen on the large LCD display.
14	Distinct beeps and bright, front-panel LEDs to announce important events like temperature stabilization or end of melt.
15	Two separate glass holders to store empty or discarded capillary tubes.
16	Indestructible white-light LEDs to provide constant illumination of the sample chamber. Samples should be visible on the front panel through a removable magnification lens.
17	Text and numerical entry keypads are built into the touchscreen interface (no external keyboard)
18	Easily calibrated in the field against certified reference standards and the date of the last calibration should be included in all reports.
19	Fast and repeatable warm-up and cool-down cycling. Programmable ramp rates from 0.1 ^o C/min to 20 ^o C/min, in 0.1 ^o C/min increments provide measurement flexibility.
20	Ability to rapidly preheat the oven to a temperature slightly below the expected melting point to minimize analysis time.
21	Record should be displayed on the front panel, printed or transferred to a PC via USB.

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QR'S OF DEHUMIDIFIER

Sl No	Specifications
1	Energy efficient and of latest technology and of reputed make. Preferably of desiccant dehumidifier technology having non-toxic and non-inflammable and maximum moisture removal capacity.
2	Should have automatic R H controller. Should be able to maintain RH range from 25 % to 55% and temperature 15°C to 35°C.
3	Should have fault indicator
4	Should have auto heater stoppage system.
5	Should turn off automatically when air pressure became low round rotor.
6	When rotor stops its heater should stop automatically.
7	While turning off dehumidifier its heater should be automatically turned off.
8	Dehumidifiers should be able to dehumidify the space as per the specifications of room size and capacity mentioned time to time as per need. i) 170/200 cmh ii) 300 cmh iii) 600 cmh iv) 1000 cmh
9	Should work on single phase 230V electricity supply
10	Should have two year warranty from date of installation

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