

## Annexure-A

### SPECIFICATIONS FOR DOUBLE BEAM UV-Vis SPECTROPHOTOMETER

Wavelength range	190 - 1100 nm
Selectable wavelength	0.1 nm increments or better
Scan Speed	28,000 nm/min or better
Light source change	Automatic
Types of samples analysed	Liquids and transparent solutions
Measurement method	True Double beam optics (two cell holder should be there one for reference one for sample)
Light source	Halogen & Deuterium Lamp
Photometric system	LO-RAY-LIGH grade blazed holographic grating in Czerny-Turner mounting
Detector	Silicon photodiode
Spectral bandwidth	1 nm (190 to 1100 nm)
Wavelength accuracy	$\pm 0.1$ nm
Wavelength repeatability	$\pm 0.1$ nm
Stray light	Less than 0.02% or better
Photometric range	Absorbance: -4 to 4 Abs or better Transmittance: 0.0 to 200% or better
Photometric accuracy	$\pm 0.004$ Abs (at 1.0 Abs) or better $\pm 0.002$ Abs (at 0.5 Abs) or better
Photometric repeatability	Less than $\pm 0.0002$ Abs or better
Baseline flatness	Less than $\pm 0.0006$ Abs or better
Noise	Less than 0.00005 Abs or better
Standard Software	Photometric, Spectrum, Quantitation, Kinetics, Time scan, multi-component quantitation, Bio method
Features	Instrument should be upgradable to Bar Code Reader Functionality
Compatibility	Stand-alone, with Computer, with Printer, with USB drive
Connectivity	Instrument with Touch Screen and USB for easy access without PC is must.

Compliance	System should have a provision to upgrade 21CFR part 11 compliance, compliance to USP 857 and should connect with client server for data integrity and regulatory compliances.
Accessories	Cuvette Cell Holder 10 mm Path length. Two pairs of 10mm Path length quartz cuvette Branded PC HP/Dell 21-inch monitor, i3 processor, 8GB RAM, 500GB HDD, Window 10, Original Antivirus. Branded Online 1 KVA UPS with 30 minutes backup.
Warranty	The system should have 12 months of warranty.
Experience	At least 5 no. of Similar Instrument should have been supplied in prestigious institutions and universities like IIT, NIPER, Delhi University etc. in the last three FY years. PO copy must be provided.
Training	The supplier must provide training for the users of the instruments at site for 2-3 days after installation and commissioning.
After sales Support	The Tenderer must have a local dedicated team, consisting of sales, engineers and application engineers from the direct factory/manufacturer for optimum system support. Engineer visit should be within 48 hours in case of any issue raised as a complaint. OEM authorization must be provided for participation in the tender.

## SPECIFICATIONS FOR DISSOLUTION APPARATUS USP 1 AND 2

S. No	Control	Manual, Micro controller based and should comply with current USP, IP
1	Water Bath	Transparent, moulded acrylic/ glass water bath. Capacity: enough to conduct 6 dissolution vessel (approx. 17-30 litres). With temperature, sensor and drain tap for easy cleaning the water bath.
2	Dissolution Vessel	Polycarbonate / Glass Vessels as per USP/ IP (clear, 1000 ml. dissolution vessels)
3	Paddles & Baskets	The design with easy changeover between paddle and basket mode of operation to eliminate routine height validation as per USP. 6 pieces of paddle and baskets should be provided, with 1-2 extra pieces.
4	Bath Circulation	There should be a suitable arrangement for efficient water circulation to maintain same temperature in the entire volume of water without serious turbulence.
5	Temperature Range	20°C to 60°C
6	Temperature Resolution	± 0.1°C
7	Temperature Accuracy	up to 45°C ±0.1°C & >45°C up to 60°C ±0.2°C
8	Temperature Sensor	Microprocessor based using PT100/ Semiconductor sensor as per IP/USP
9	Evaporation Loss	1% (at 50 RPM / 37°C / 1000mL / 24hrs)
10	Paddle/Basket Shaft Speed Range	Suitable motor driven paddles with 20 to 350 RPM
11	RPM Speed Accuracy	20 to 300 RPM ±0.5 RPM & Above 300 RPM ± 0.8 RPM
12	Sampling Time Selectivity	Fixed/Programmable (varying intervals)
13	Dissolution Process Time	1 min. to 720 hours
14	Power	110 / 220 V, AC - 50 Hz / 60 Hz
15	Heater	As per 6 stations and water capacity (i.e. 1000 W)
16	Environmental Operating Conditions	a) <b>Operation:</b> Indoor b) <b>Temperature:</b> Ambient to 45°C. c) <b>Humidity:</b> 5 to 90% non-condensing.
17	Warranty	A 2 years of warranty should be included
18	CAMC	An additional 3 years CAMC should also be quoted separately
19	Various accessories	All possible accessories (paddles, baskets, etc. should be quoted separately
20	Installation and user training	Installation at customer site and required user training must be give after installation.

### SPECIFICATION FOR ANALYTICAL BALANCE

	<b>Specification</b>
Capacity	200g
Minimum Display (Readability)	0.1mg
Repeatability (Standard Deviation)	≤ 0.1mg
Internal Calibration	Yes
Differentiating the values by	0.1 mg
Pan size	90x90 mm
Warranty	Twelve months
Warranty	12 months of warranty.
Experience	At least 5 no. of Similar Instrument should have been supplied in prestigious institutions and universities like IIT, NIPER, Delhi University etc. in the last three FY years. PO copy must be provided.