

Specifications for Advanced Vitrectomy Machine with Phacoemulsification

1. Should support posterior Micro Incision Vitrectomy Surgery (MIVS) e.g. 23 G, 25/25+G and 27/27+G.
2. The 27G Vitrectomy Cutter should be rigid enough to ensure safe, controlled vitreous shaving close to retina.
3. Should be capable of both anterior and posterior vitrectomy and micro incision cataract surgery.
4. Should be able to drive Pneumatic Guillotine Cutter through integral mechanism to at least 15,000 cuts/ minute or more using twin blade cutters.
5. The cutter should have straight or beveled cutter capable of cutting the vitreous safely very close to the retina.
6. Should have sharp single entry valved trocar system of 23G, 25G and 27G which ensures clean, smooth, self-sealing entry without exerting excessive pressure.
7. Should have the technology to linearly control vacuum and cut-rate simultaneously in vitrectomy mode.
8. Should have flow based/ vacuum based/ venturi/ peristaltic/ dual pump/SPEEP aspiration pump.
9. Should have the capability to generate vacuum of range of 5 - 600 mmHg or more through cassette tubing system.
10. Should have 2 independent aspiration ports.
11. Should have the facility of Proportional Reflux.
12. Should have integrated motorized irrigation control mechanism.
13. Should have Vented Gas Forced Infusion Capability or the facility to monitor and adjust/digitally control the infusion pressure to ensure stable intraocular pressure.
14. Should have the facility to toggle between a regular infusion pressure and a higher alternate pressure to achieve immediate tamponade effect with the help of footswitch.
15. Should have Xenon/LED/SSID light source capable of showing retinal details very well without inducing phototoxicity.
16. Atleast 02 illumination ports must be provided.
17. Range of illumination intensity should be at least 10- 100%.
18. Should have inbuilt Green laser with a wavelength of 532nm.
19. The green laser should have an output power range of 50 mW to 2000 mW or more.
20. The green laser should have an exposure time range of 10 ms to 2000 ms or more.
21. Laser should have Ready – Standby control.
22. Should have capability of auto fluid air exchange.
23. Should have capability of automated and linear control of silicone oil injection and extraction.
24. Range of silicone oil injection pressure should be 10 to 70 mmHg or more.
25. Should have facility for extrusion of subretinal fluid.
26. Should have facility for proportional diathermy.
27. Should have both endo and exo diathermy probes.
28. Should have facility for longitudinal/torsional/transversal phacoemulsification for efficient emulsification of cataractous lens.
29. The phacoemulsification handpiece may be 4 or 6 crystal.
30. The Phaco frequency may be between 28 to 43 KHz.
31. Phacoemulsification mode should have linear and pulse mode.
32. Phacofragmentation mode should have continuous and pulse mode.

33. Should provide programmable multifunctional footswitch.
34. Should be capable of storing and displaying all the relevant parameters.
35. Should be able to store settings for different surgeons (minimum 20 settings)
36. Should have facility for voice reconfirmation.
37. Mobile sturdy trolley with embedded instrument tray to be provided.
38. Power supply – 230V, 50 Hz.
39. External noiseless oil free compressor to be provided
40. Green Laser safety filter to be provided.
41. Latest model with latest accessories and applications must be quoted.
42. Online UPS 2KVA with minimum UPS backup time of 45 min.
43. Demonstration is a must.
44. 5 year warranty followed by 5 year CMC.
45. Price of all consumables and accessories to be provided at the time of installation.
46. Certification: Equipment should be BIS/CDSCO/ ISO certified.
47. Minimum consumables to be supplied:-
 1. Phacoemulsification Hand Piece: 01
 2. Phacofragmentation hand piece with tip: 01
 3. Bimanual/Coaxial Irrigation/Aspiration probes : 01 set
 4. Phacoemulsification Pack/Cassettes with tubing system set :6 pieces
 5. Vitrectomy pack including vitrectomy cutter, cassette, valved trocar cannula set, infusion cannula and endo light, 25G: 06 pieces.
 6. Flexible endo laser probe 25G :06
 7. Diathermy Endo probe 25G :01 piece
 8. Diathermy Exo probe with cable :01
 9. Phaco tips (Bevelled & angled) for 2.8mm, 2.2mm/1.8mm micro incision cataract surgery:02 each
 10. Sleeves: 04
 11. Test Chambers: 02