



Detail specifications of the table and rack:

- 1 Overall table : size 1200 mm (W) × 950 mm (D) × 750 mm (H) approximately.
- 2 Table frame: MS square pipe 30 × 30 × 2 mm approximately.
- 3 Tabletop: ISI mark, 19 mm fire retardant plywood compliant to IS 5509.
- 4 Tabletop finish: 1 mm matte-finish Sunmica laminate on both sides.
- 5 Edge finish: PVC edge lipping tape, minimum 1 mm thick, on all exposed edges.
- 6 Castor wheels: Heavy-duty castor wheels, 50 mm diameter.
- 7 Wheel locking: Front two castor wheels shall be provided with locking arrangement.
- 8 Instrument rack size: To suit table width, rack depth 400 mm(approx.), mounted above table.
- 9 Rack bottom clearance: Minimum 120 mm(approx.) clear gap between tabletop and bottom of rack.
- 10 Rack frame: MS square pipe 20 × 20 × 2 mm.
- 11 Rack front panel: 1 mm thick MS sheet, cut/opened accurately to accommodate instruments.

12 Rack front layout

- 1) Monitor space with stand approximately at centre (approx. 540(W) x 420 (H) mm).
 - 2) 3 sockets with individual switches on each side of monitor along with MCB and indicator for 1-phase power sources etc. (approx. 225 (W) x 50(H) mm).
 - 3) LAN socket.
 - 4) DSO : 301mm x 152mm x 70mm (approx. dimensions).
 - 5) Function generator 292mm x 92 mm X 145 mm (approx. dimensions).
 - 6) Multiple output DC power supply 300mm x 330mm x 140mm (approx. dimensions).
 - 7) Two Ammeters (70 x 70 mm) (one for 0-20 mA and other for 0-2 A).
 - 8) Two Voltmeters (one for 0-200 mV and other for 0-20 V).
11. Side enclosures and ventilation: Remaining three vertical sides and bottom side of rack covered with perforated MS sheet for ventilation, perforation using 5 mm diameter holes with 10 mm pitch and 10 mm row spacing, Top side of rack is closed with MS sheet without perforations, Adequate perforations provided on side/back panels for heat dissipation.
12. Sheet reinforcement: All MS sheet panels suitably reinforced to avoid local bending, vibration, and deformation.
13. Sheet flange and fitting: All sheet panels had flange to stiffen it, atleast front side and backside panels are fitted by allen bolts for installation and maintenance of electronic equipments.
14. Powder coating: All MS pipes and MS sheets are properly cleaned, pre-treated, and powder coated, MS Sheet is powder coated on both sides.
15. Workmanship: Cutting, welding, grinding, finishing, and alignment is neat, burr-free, and suitable for laboratory use.
16. Electrical supply cable: Mains supply cable length of 2 meters.
17. Electrical safety: All sockets and switches are securely mounted; proper insulation, earthing, and wire dressing is ensured.
18. Layout requirement: Equipment arrangement is compact and ergonomic, with sufficient clearance for operation, wiring, and maintenance.
19. General requirement: Complete workbench is sturdy, stable, corrosion-resistant, movable, and suitable for electronics laboratory use.

100 MHz Digital Storage Oscilloscope (Model No. - OWON SDS210)

- Bandwidth (-3 dB): ≥ 100 MHz on all channels simultaneously
- Number of Channels: 2
- Real-Time Sample Rate: 1GSa/s
- Vertical Sensitivity: 2mV/div $\sim$ 10V/div.
- Record Length (Memory Depth) : 20Mpts
- Vertical Resolution: 8 bits
- Display Size: 7-inch color LCD display
- Display Resolution: 800 x 480 pixels
- USB Interfaces: USB Host, USB Device

Arbitrary Waveform Generator-1 Channel, 30MHz (Model No.-OWON DGE3031)

- Number of Channel: 1
- Sampling Rate : 125 MSa/Sec
- **Maximum Output Bandwidth:**
 - Frequency Range
 - Sine: 1 μ Hz $\sim$ 30MHz
 - Square: 1 μ Hz $\sim$ 15MHz
 - Pulse wave: 1 μ Hz $\sim$ 15MHz
 - Ramp wave: 1 μ Hz $\sim$ 1MHz
 - Noise wave (-3 dB): 20 MHz BW(AWGN)
 - Arbitrary wave: 1 μ Hz - 10 MHz
- Minimum Output Frequency: 1 μ Hz
- Standard Waveforms : Sine, Square, Triangle, Ramp, Pulse, Noise, DC
- Arbitrary waveforms Length : 2 to 100K points
- Modulation mode: AM, DSB-AM, FM, PM, ASK, FSK, PSK, BPSK, QPSK, 3FSK, 4FSK, OSK, PWM, SUM
- Output Amplitude Range: 1mVpp $\sim$ 10Vpp(≤ 10 MHz)50 Ω
- Output Impedance: 50 Ω
- Output Accuracy : Around 1mVpp
- DC Offset : $\pm(5$ Vpk – Amplitude Vpp/2) 50 Ω (≤ 10 MHz)
- Accuracy: $\pm(1\%$ of |setting| + 1 mV + amplitude Vpp * 0.5%)

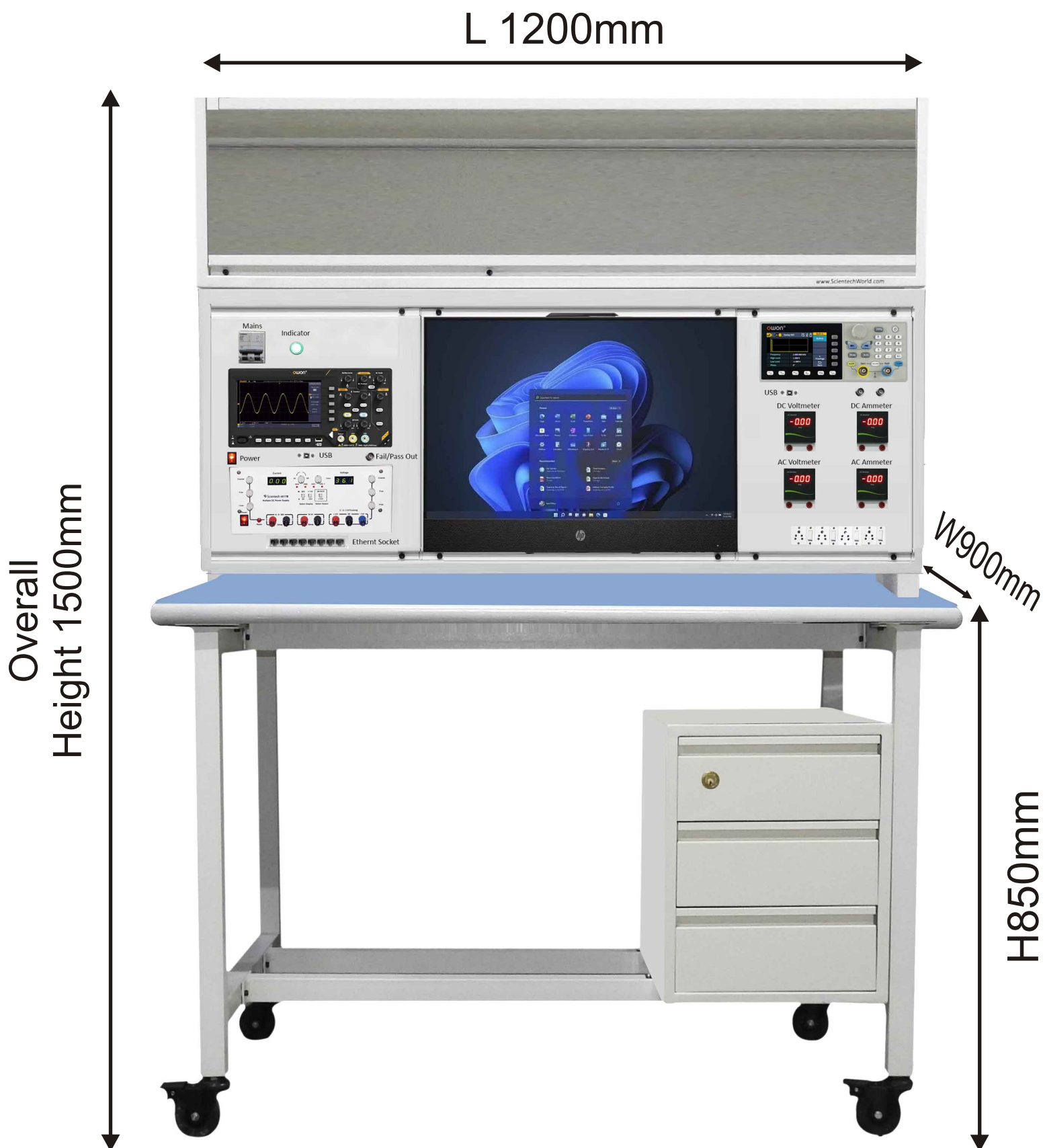
Multiple DC output Power Supply (Model No. - Sciencetech 4077B)

- Type: Three independent linear regulated DC supply voltages
- DC Output Ranges:
 - A : 0-36 V, 2A, continuously variable by means of coarse and fine controls.
 - B : 5V, 5A adjustable from (4 V - 6 V).
 - C: 0 - ± 15 V, 1 A Dual Tracking adjustable.
- Load Regulation: $\leq \pm 0.05\%$
- Line Regulation : $\leq \pm 0.05\%$
- Ripple and Noise : ≤ 1 mVrms
- CV/CC Mode Indication: Separate Constant Voltage and Constant Current mode LED indicator
- Protection: Built-in overheat, over voltage & short circuit protections.

Panel Meters

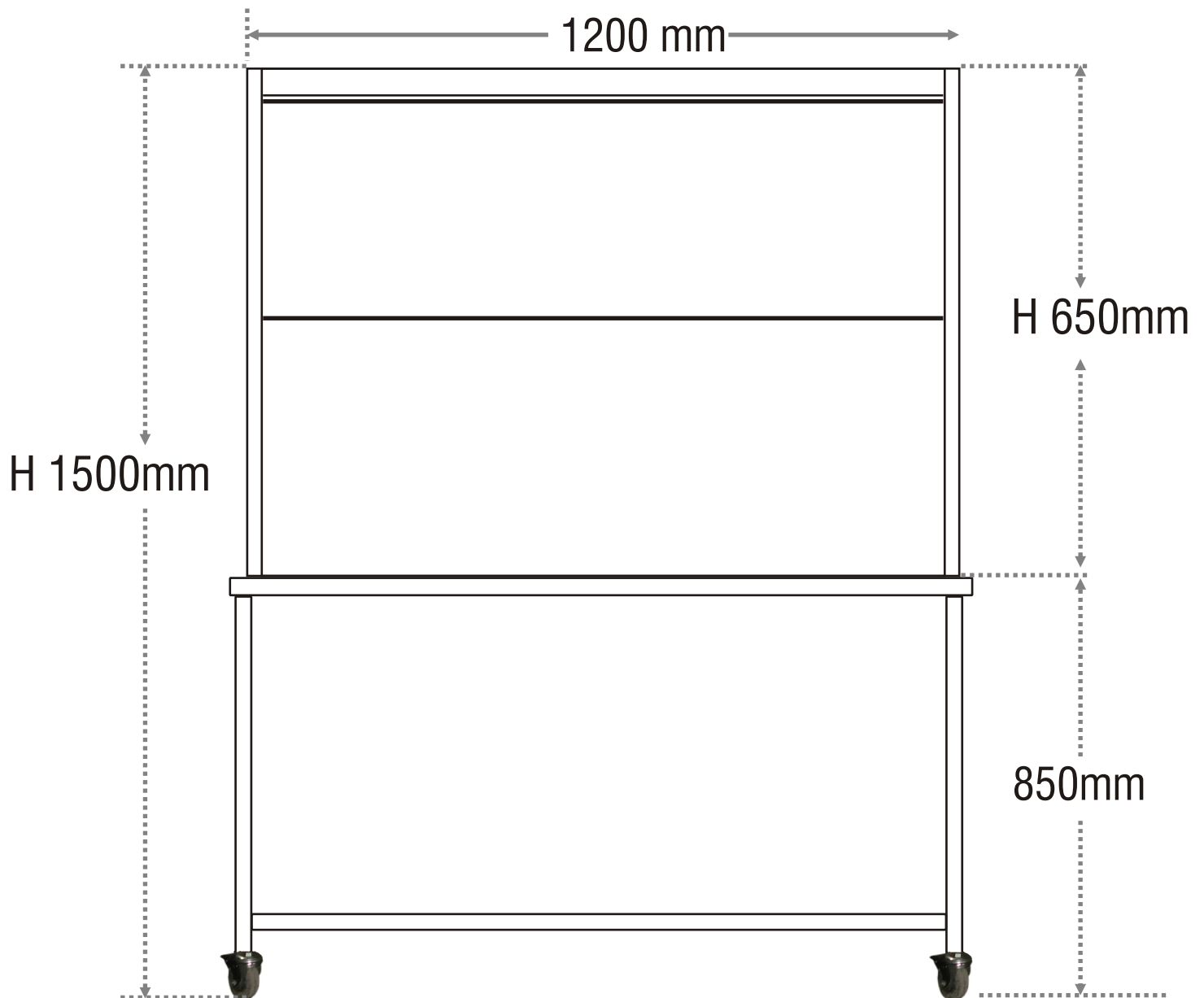
- Plugin Panel DC Digital: Voltmeter: 0 to 200mV
- Plug in Panel DC: Digital Voltmeter: 0 to 20V
- Plug in Panel DC: Digital Ammeter: 0 to 20mA
- Plug in Panel DC: Digital Ammeter: 0 to 2A

MCB: 10-20 A



WorkBench frame structure

Front View



Side view

