

## General Information

Manufacturer	Osworld Scientific Equipments Pvt. Ltd, Mumbai, India
Product	<b>BOD INCUBATOR</b>
Brand	Osworld
HSN code	84198960
Models	OBOD - Regular-LCD-PID (description refer to Annexure I). OBOD-Advanced-Touch Screen-PLC(description refer to Annexure II).
Type	Vertical, front opening, complete assembled unit, plug to start.
Application	Stability study meets ICH guidelines and USFDA requirements .
Certification / Registration	ISO 9001 : 2015 audited by BVQI GST: 27AABCO0610N1ZK SME: 27221200666 IEC : 0308048806 Calibration: ERTL Certificate

## Product Highlights

Parts	Brand, COO	Salient Features
Stainless steel	Jindal, India.	<a href="#">LAN Connectivity.</a>
Touch screen display (HMI)	Beiger, Sweden.	<a href="#">Ethernet communication.</a>
Program logic control (PLC)	Mitsubishi, Japan.	<a href="#">SQL Database.</a>
Temperature sensor	IST, Switzerland.	<a href="#">Licensed Software.</a>
Door gasket	GCF- Secure,UK.	
Door handle / hinges	Heyritz, Germany.	

## Key Specifications

Temperature range / resolution	: 5.0°C to 60.0°C / 0.1°C
Temperature accuracy / uniformity	: $\pm 0.2^\circ\text{C}$ / $\pm 1^\circ\text{C}$

## Technical Specifications

Construction	Double wall with Polyurethane (PUF) insulation. Working chamber made of Stainless steel 304 grade mirror finish. Outer cabinet made of stainless steel 304 grade matt finish.
Temperature Data storage logging device with option of PID or PLC control. (for description refer to Annexure I & II)	7" HMI colour touch screen display. Data storage of 1000 / 1500 readings in FIFO mode. Password protected user management entries. Tamper proof non-editable audit trail. Set value programmable with date and time. When PC is connected data can be downloaded defining exact period.
Cooling	CFC Free Copeland Make compressor with R 134A eco friendly refrigerant, with condenser, motor, relay complete unit.
Heating	U' Shaped Nichrome wire heater in SS sheathing
Temperature sensor	PT100 RTD Class 'A'.
Air circulation	Flange motor with impeller.
Insulation	Poly Urethane Foam (PUF)
Chamber illumination	Fluorescent light with door switch.
Feet	Castor wheels.
Trays	SS wire mesh heavy duty.
Electrical	230V / 15A / 50 Hz.

## Safety Features

Temperature	High temperature safety cut off.
Compressor	Electrical overload cutoff relay for compressor.
Electrical	Short circuit protection

## Calibration & Validation Documents

Calibration	Temperature sensor probe calibrated with traceability to ERTL
	Temperature controller calibrated with traceability to ERTL
Validation Documents	Installation Qualification (IQ), Operational Qualification (OQ) and Performance Qualification (PQ) documentation and protocols shall be provided with the equipment.

## Utilities / Preinstallation Requirement

Power supply	3 pin socket, 15Amps, 230 Volts AC 50 Hz.
Drain	Water drain line with ½” nozzle to be provided at floor level.
Room Temperature	Room temperature around machine preferably at 25°C with air conditioning or a well ventilated room with exhaust fan. However surrounding temperature should not exceed 30°C.
Computer requirements (if software ordered)	Windows-compatible computer with a standard keyboard, a pointer input (i.e., a mouse, trackpad, or touchscreen). Microsoft "SQL 2012 free version to be provided by customer. Windows 7 or above. RAM 8 GB, Hard disk – 500 GB. Microsoft office 7 or higher (Professional is recommended) Processor: Intel I3 or higher. Com port for communication. Acrobat reader (to view PDF files). Ethernet / LAN Connectivity.
Internet connectivity	For remote access through Team Viewer / Any Desk.

## Ordering Information With Price

Model	Internal size	External size	Door open size cm (DO)	Capacity		Shelves	Weight	Shp Wt	Power		
	W X D X H cm	W X D X H cm		Cu. ft.	Liters	SS	Kg	Kg	VAC,Hz	Amps	KW
OBOD 4	45X45X60	62X93X123	67	4	120	2	100	170	220,50	5	1.25
OBOD 8	60X60X60	77X108X123	82	8	200	2	100	170	220,50	5	1.25
OBOD 12	60X60X90	77X108X153	82	12	324	3	130	195	220,50	7	1.75
OBOD 16	60X60X125	77X108X192	82	16	450	4	200	285	220,50	7	1.75
OBOD 21	60X80X125	77X128X192	82	21	600	5	200	285	220,50	9	2.25
OBOD 28	80X80X125	97X151X193	102	28	800	5	250	345	220,50	10	2.5
OBOD 34	80X100X125	97X151X193	102	34	1000	5	250	345	220,50	10	2.5

## Optional Accessories Applicable for Regular Model.

Sr. No.	Descriptions
1	i) OS / SOFTLOG / V20.1 / Regular software with 21 CFR Part 11 features. For details refer to Annexure I
2	ii) Standby Refrigeration system with PLC for autochangeover.
3	iii) Temperature mapping on site consisting of 24 hours cycle, of loaded and unloaded chamber, at any one condition. Data is collected from eight different points within the chamber. <b>Note:</b> After validation is completed, validation report / certificate along with validation sticker shall be provided.

## Optional Accessories Applicable For Advanced Model

Sr. No.	Descriptions
1	OS / SOFTLOG / V10.1 / Advanced software with 21 CFR Part 11 features For details refer to Annexure II
2	Multipoint Data scanner cum logger: With 4 temperature sensors placed at specific points in chamber.
3	GSM Module: Mobile alert through SMS, deviation alarms to 5 mobile nos
4	Standby Refrigeration system with PLC for autochangeover.
5	Door access security system – PIN type + Finger Printing
6	Temperature mapping on site consisting of 24 hours cycle, of loaded and unloaded chamber, at any one condition. Data is collected from eight different points within the chamber. <b>Note:</b> After validation is completed, validation report / certificate along with validation sticker shall be provided.

### Description - Model Configuration

### Annexure I

#### Model - OBOD- Regular LCD

Temperature control	PID control. LED display. Data-logging: (OSLOG- DSD- LCD). LCD 16 x 2 cm yellow display. Password protected with memory for data storage. Printer connectivity through RS 485 communication. PC connectivity through MODBUS protocol. RTC / date / month settable. Log interval selectable. Print period to and from selectable.
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### Description - Model Configuration

### Annexure II

#### Model - OBOD Advanced

HMI Touch screen	Make Beiger – Sweden. Beiger electronics is a fast growing Swedish company with extensive experience of industrial automation and data communication. Since its start up in 1981, Beiger Electronics has evolved in to a multinational group present in 22 countries and sales of 1,376 MSEK 2013. The company is listed on the NASDAQ OMX Nordic Stockholm Small Cap list.
PLC (Program Logic Control)	Make: Mitsubishi – Japan. Mitsubishi is a well known brand and global leader in Electric & Electronic equipment for Industrial use. It has operations in 40 countries, more than 1,20,000 employees and consolidated net sales of more than US\$ 38 billion.
Temperature control	Touch screen 7” HMI display cum logger, make Beijer, Sweden. PLC make Mitsubishi, Japan.
HMI features	HMI is 21 CFR compliant. User management functionalities. Password protected user account. Multiple user level as per user rights Audit Trail + Alarm log. (reflects in the SCADA as well). Tamperproof and non-editable audit trail data format. Time stamped records of parameter changes with user name. Audit trail records user creation, login / logout attempts, old and new value of parameter change. Electronic record and storage. Review of the reports on the HMI screen for Process data, Alarms and Audit Trail.