

# **T1 type Steel Fume Hood**

## **Production description**

## **Product Function**

The fume hood is one of the most important safety devices in the laboratory. It is an effective local ventilation method, and the proper selection, installation, operation and maintenance is able to keep its operators and other personnel in the laboratory away from the injury caused by chemical reagents and toxic substances. At the same time, it can provide you with appropriate protection in case of fire or explosion. It is widely applicable to various industrial sectors such as electronics, defense, precision instruments, instruments, pharmaceuticals, chemical agriculture, biology etc. and various scientific laboratories, and the performance on improving process conditions is good.

## **Application**

Temperature:  $-10^{\circ}\text{C}$  -  $+40^{\circ}\text{C}$

Relative humidity: no more than 85%

Atmospheric pressure: 70Kpa-106 Kpa

Power: AC110V 60HZ

## Material Description

### Main Part

- ✧ **Left and right side panels\front steel plate\back plate\top plate\lower hood:** 1.0mm thick first level high quality galvanized steel plate is used. 2000W automatic CNC laser cutting machine imported from Germany is used for blanking of steel plate and automatic CNC bending machine is used for folding edge of the steel for bending and forming integrally at one time. All metal surfaces are subjected to automatically spray of epoxy resin powder electrostatic line and high temperature curing.
- ✧ **Lining board\guide plate:** 5mm thick solid core phenolic compact laminate (HPL) plate is applied with good performance of anti-corrosion and chemical resistance. The fixings of guide plate are made of PP high-quality materials integrally.
- ✧ **Mobile view window:** PP batten is used to wrap on both sides of the door glass. PP integral handle is embedded with 5mm thick high-quality tempered glass. The opening height of the door is 760mm and the door is free to be lifted and lowered. The vertical lifting pulley wire rope structure is used for the sliding device of the door, which can be stopped steplessly at any place. And the guiding device of the sliding door is made of corrosion-resistant polyvinyl chloride material.
- ✧ **Fixed view window:** The frame is made of steel 1.0mm thick level 1 high-quality galvanized steel sheet, which subject to blanking of laser cutting, CNC folding, epoxy resin powder electrostatic spraying and high temperature curing, and 5mm thick tempered glass is embedded in the frame.
- ✧ **Table top:** 12.7mm thick solid physicochemical board from China is used for the table top, which is resistant to acid, alkali, impact and corrosion, and it complies with E1 level for formaldehyde.
- ✧ **Exhaust vent:** the fume hood integrally formed with the top plate is used, and the diameter of the round air outlet hole is 250mm, and the casing is used for connected to reduce gas turbulence.
- ✧ **Connection:** All internal connections are concealed and corrosion resistant without any exposed screw, and they are made of chemical resistant stainless steel and non-metallic materials.

### Accessories

- ✧ **Water channel:** It is equipped with imported disposable PP small channel, which is resistant to acid, alkali and corrosion. It is installed on the internal table top of the fume hood.
- ✧ **Water tap:** The 7-type single-outlet water tap is made of brass and installed on the internal table top of the fume hood (water is optional, and the default setting is the single-outlet tap on the table, which can be changed to other water as the demand).
- ✧ **Control panel:** LED panel (the speed can be set for free adjustment, it adapts to most similar products on the market, and supports fast startup of 6s of electric damper) is used. There are 8 buttons, which include power, setting, confirm, lighting, standby, fan and+\-key button of damper.

- ✧ **Lighting:** Oppl LED white light quick start type is used for lighting, and it shall be installed on the top of the fume hood, and its service life is long.
- ✧ **Socket:** Four 10A 220V five-hole multi-function sockets are configured. The power of 2200W is available for most instruments.
- ✧ **Wire line:** Chint 2.5 square copper core wire is used for the internal wiring of the fume.
- ✧ **Hinge of lower hood door:** DTC brand hinge is used with 110 degree straight bending, high service life and easy for assembly and disassembly.
- ✧ **Maintenance port:** The moveable maintenance window is equipped for the back panel of lower hood for easy troubleshooting.
- ✧ **Other devices:** Four round holes with the diameter of 42mm are reserved for each side panel of the upper hood to facilitate installation of facilities such as cock etc.

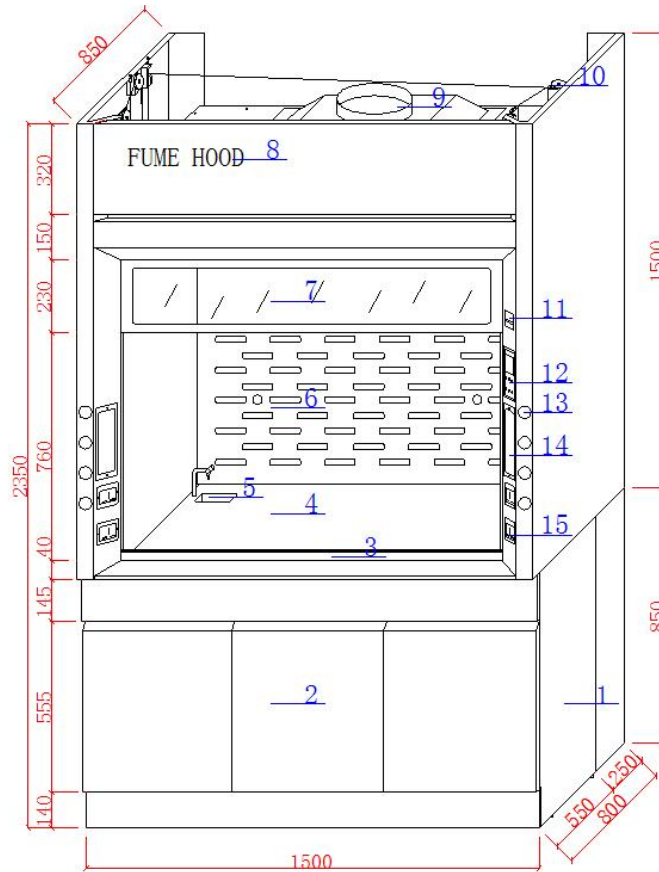
### Technical parameter

Product model: T1-TFG

Structure of main part: all steel structure

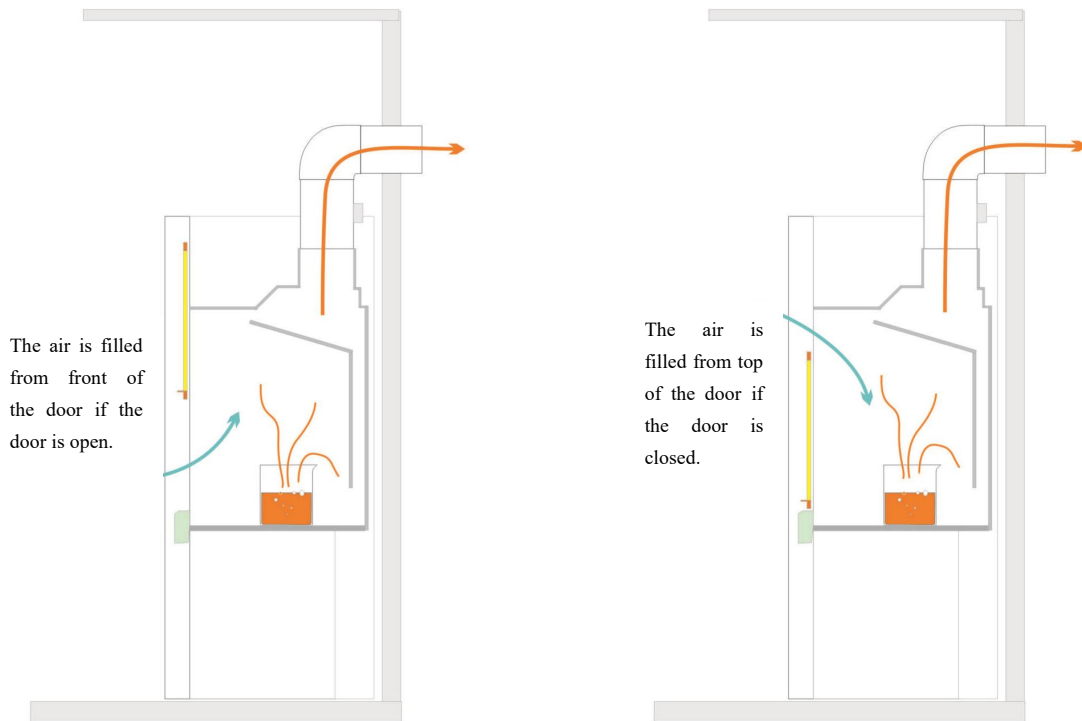
Sn.	Description	Specification		
1	External dimension (mm)	1200*850*2350	1500*850*2350	1800*850*2350
2	Internal dimension (mm)	960*660*1180	1260*660*1180	1560*660*1180
3	Opening height of the window (mm)	760		
4	Air quantity (m <sup>3</sup> /h)	1300	1700	2100
5	Exhaust diameter (mm)	φ250		
6	Face velocity (m/s)	0.3~0.5		
7	Noise (dB)	Less than 65		
8	Power input voltage (V)	one phase 110V 60Hz		
9	Current and power of power socket	10A 2200W		
10	Net weight (kg)	182	218	249

## Detailed description



1. Lower hood
2. Door panel of lower hood
3. Glass door and PP handle (5mm thick tempered glass embedded)
4. Table top (optional)
5. PP small cup and single-outlet water tap (optional)
6. Guide plate (with exhaust guiding hole)
7. Fixed small view window (5mm thick tempered glass embedded)
8. Front steel plate (LOGO is customized)
9. Exhaust port of fume hood (diameter of 250mm)
10. The vertically lifting/lowering tempered rope and pulley assembly of glass door.
11. Circuit breaker shall be additionally provided (PP plastic protective casing)
12. LCD control panel (power, fan, lighting, damper +, damper -, standby, confirm, set)
13. Functional device reserved hole (round hole with diameter of 42mm)
14. Maintenance plate (plastic)
15. (10A) Socket (5-hole 10A)

## Exhaust air direction



Fume hood air flow diagram

## Precautions

### 1) General precautions

- This product is for indoor application. Please do not use it outdoor or place it in high-speed dust source and source of vibration.
- Please do not wipe the hood with volatile oil, thinner, corrosive agent, etc. to avoid the damage to the surface layer of the hood or cause deterioration.
- It is forbidden to use the product in the following places: Low temperature, high temperature, high humidity, condensation, dusty and places with oily smoke and fog.

### 2) Electrical precautions

- Arrange the product in place firstly and then connect the wires and the power outlet for operation to avoid personal injury.
- Please confirm the rated voltage and frequency of this product must be consistent with the parameters of the input power supply to prevent the damage to the electrical components and fire.

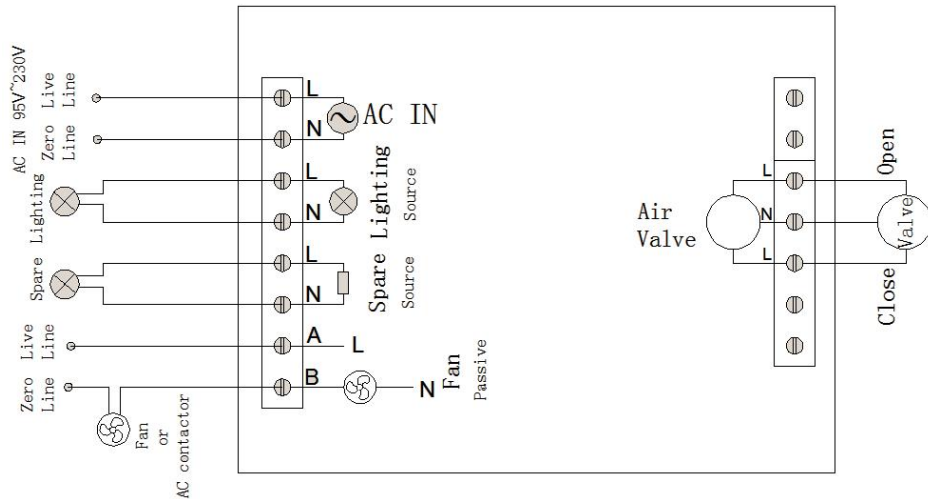
### 3) Safety precautions during operation

- Under normal atmospheric condition, the insulation resistance between the power output terminal and the casing or the exposed conductive part of the product shall be greater than 20M, which shall be greater than 2M after the appropriate test.
- If abnormal work is found, the power shall be cut off in time and the relevant personnel shall be notified for maintenance.
- The power shall be cut off during maintenance to avoid inadvertent start-up and personal injury.

# Operation Manual for BM-220


## Specification:

Rated Voltage: 95~240V AC, 50/60Hz  
 Working Temperature: 0~40℃  
 Storing Temperature: -10~50℃  
 Humidity: 5%~90%RH coagulation free  
 Boring Size: 15cm (L) × 6.5cm (W)  
 Dimension: 17.2cm (L) × 8.6cm (W) × 5.4cm (H)  
 Control Content: Fan, Valve, Light, Spare  
 Valve Angle: 0-90 degree  
 Valve Operating Time: 5-60 Sec, Adjustable by customers.  
 Power Limit: Fan<500W; Others <250W; Contactor needs to be applied if power exceed limit.  
 Connection: The internal common zero line, More connection cables available upon customer's requirement. See Fig 1.



## Operation Manual

### 1、 Factory Mode

On “Off” condition, press both “” and “Fan” buttons for 1 sec, then you are required to enter PIN



(See Delivery Notice). Reference for buttons and related digital numbers, see right Fig.

When PIN is correct, you are within Factory Mode. Press “Config” button, you can switch to the function needed for adjustment. You can use “UP” and “Down” buttons to adjust value.

The number show in "CUR DEG" window is function code. the value of this function is showed in "SET DEG" window.

Function Code	Content	Range
1	Total time of valve, Unit: Sec	5-60s
2	Manual test mode	
3	The minimum angle of the fan valve to open fan	5-60Deg
4	Delay of Fan off, Unit: Sec	5-60s


(1)Valve Actuator Time Setting (travel range from 0 to 90 degree for maximum: Allowable time: 5-60 sec. Press Up (1) or Down (2) button for adjustment.

(2)**Manual Test:** Each function can be tested individually. Botton Light , Spare , Fan are equal to the function parts. When switch between these buttons, you will enter a new mode. Press Up button to open the valve; press Down button to close the valve; losing the button to stop the valve. Never press Up/Down buttons at the same time to avoid breakdown of the valve.

Note: In test condition, each function is controlled individually. When valve is in close condition, Turning on fan will cause damage.

(3)**Star-up Angle:** Setting valve opening angle within 5-60 degree minimum by pressing UP /Down buttons. Fan will start operation when valve travels to this designated position.

(4)**Fan-off Delay:** Press Fan button to turn off fan. Fan-off delay can be obtained between 0-240 sec by pressing Up/Down buttons to allow gas discharge from the pipeline. No Fan-off delay when timer shows “0” sec.

When setting are completed, Press ENTER button to save the settings and it will resume shutdown state. Press “” button to resume shutdown state but without saving the settings.



### 2、 Starting controller

When Controller is power on, if valve isn't closed, valve starts operation to



close the valve, avoiding air comes in. Then screen disappears, shutdown state is resumed.

### 3、 Power ON/OFF

Press “” button for 1 sec, with a prolonged sound, LCD is lighted. Then controller is in working mode. From here, press “”for 1 sec. power will turn off, Valve travel limit switch will automatically closed.

### 5、 Light

In main screen, press "Lighting" button to turn on or turn off the light.

### 6、 Spare

In main screen, Press "Spare" button to turn on or turn off spare.


### 7、 Valve Angle

In main screen, valve angle can be adjusted by pressing "Up"/"Down" buttons. If fan is turned on, any adjustment on valve angle will cause function of the operator. Allowable valve angle can be adjusted within 5~90 degree.

### 8、 Fan

In main screen, press "Fan" button to turn on or turn off the fan. When fan is turned on, the valve will be opened automatically, till it travels to 20 degree and above, then fan starts operation. Fan is effectively protected in this way. When fan is turned off, the valve will be closed automatically. Fan will continue its operation when valve is 20 degree and above to discharge the hazardous gas in the pipe line. When valve travels to 20 degree and bellow, fan will turned off ( 20 degree is default setting, can be adjusted by customers). Close valve next to effectively avoid hazardous gas filling back.

### 9、 ON/OFF Timer

In main screen ,Press "Config" button, entering setting mode. Press "Config" botton, you can switch between setting items, using UP/Down buttons for adjustment. When setting is completed, press Enter button to save the items. Press “” button to quit setting mode, but the items will not be saved. When the setting item is beaming, it means the setting is effective.

ON Timer: When ON Timer is reached, the facility starts operation by the system. Press Lighting(3), Spare(4) buttons, you may pre-set starting time for these two functions, whereas, Fan button remains invalid.

OFF Timer: After opening the fan, OFF Timer can be set for Lighting or Spare by pressing the related buttons ( Fan is the compulsory option). Lighting or Spare

will be automatically turned off at this designated time. Press Fan button, shutoff item will be selected. After the time, controller will shutoff, so will be turn off Lighting and Spare, regardless what their settings are.

Note: If you open the fan manually before ON Timer, the ON Timer will be cancel. Similarly, if you turn off the fan before OFF Timer, the OFF Timer will be cancel.

