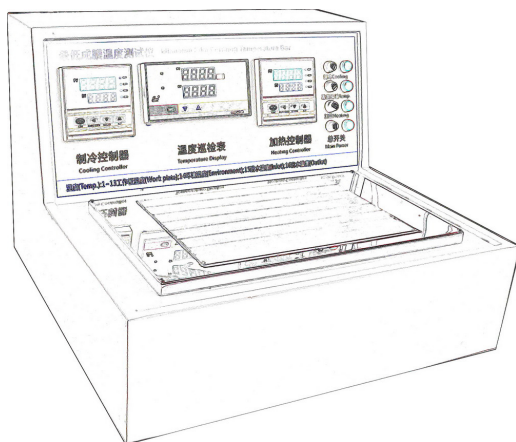




# Minimum Film Forming Temperature Bar



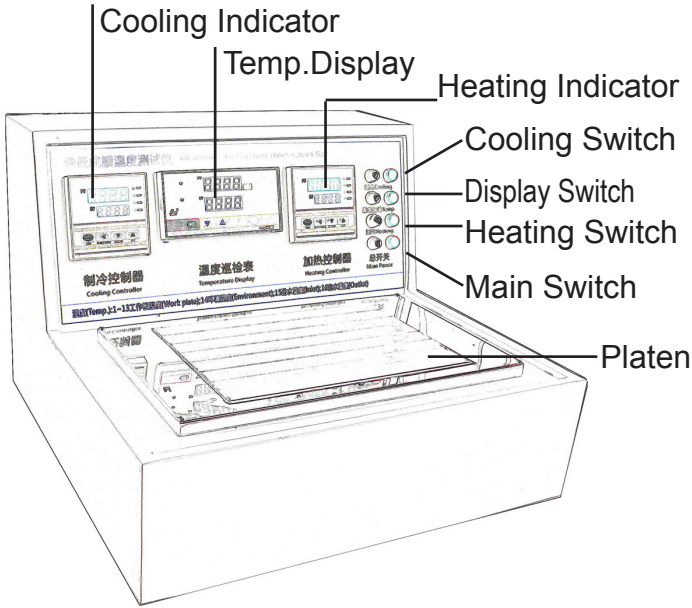
**User Manual**



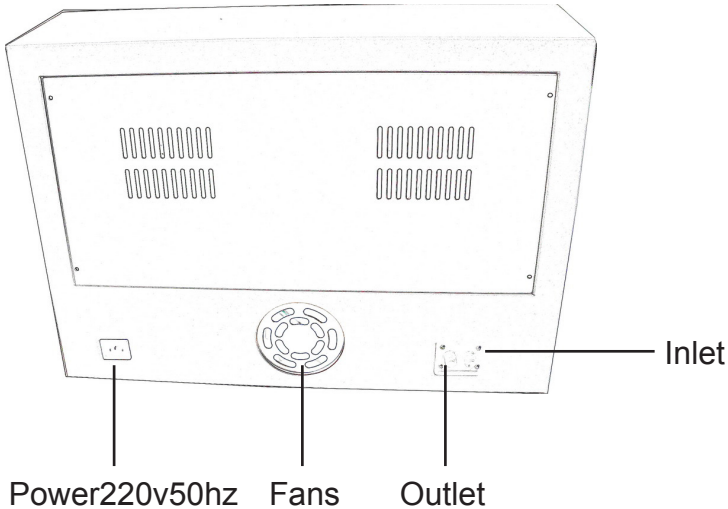
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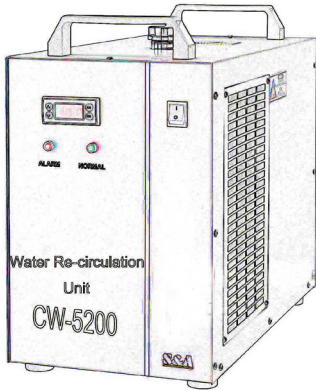
## 1 Structure: FRONT



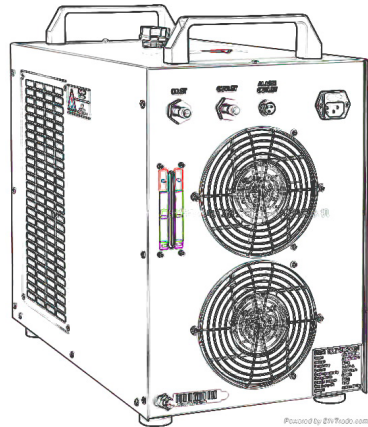
## BACK



## MFFT Water Re-circulation Unit:(Optional fittings)



FRONT



BACK

The MFFT re-circulating unit from allows the operation of the Minimum Film Forming Temperature Instrument in laboratories that do not have access to a suitable water supply.

For laboratories that do have a suitable water supply this is an environmentally friendly option of recirculating the cooling water from the instrument. Placed on a desk top or in cupboard underneath the instrument, the recirculation unit is quiet enough to be operated in a working laboratory.

## 2 Parameters:

1. Platen:Stainless steel
1. Temperature Range:Minimum-7°C Maximum70°C
2. Platen Temperature Check Point:Maximum 13
3. Interval:20mm
4. Parallel Tracks:6 tracks 240mmx22mmx0.25mm
5. Temperature Display:16 point (1)1 ~ 13: Platen(2)14:Enviroment(3)15:Inlet(4)16:Outlet
6. Power:220v AC 50Hz
7. Water:Normal mains supply
8. Dimentions:520mm(L)x520mm(W)x370mm(H)
9. Weight:35Kg

## 3 Feature:

- Desktop style and advanced platen designed for space-saving.
- Accurate calibration for surface tempera-ture.
- Automatic protection system for water-break.
- Super wide platen for 6 sample measurement at the same time.

## 4 Operation:

### Ready:

Open the packing box,(The box can repeatedly reusable property)please safekeeping for trans-portation or maintenance).Put the unit nearer to the water in laboratory. Link the water pipe carefully,connecting the unit to power outlet.

### Power On:

Be sure the electrical supply are properly grounded and verify the voltage of the power source before connecting the unit to any power outlet.Turn on water supply,turn on the main,heating,temperature display,cooling switch in turn.

### Debug:

Set temperature depending on paint film condition. (Please see the LU-906M user Manual for detail.)

The temperature display are precisely calibrated at the factory before shipment. You should not modify in the general case.

### Temperature balance:

When the temperature vary greatly little during 120 minutues from 1~13 point.Then you can add sample onto the platen. The balance time depend on lowest temperature you set up. The desiccant will put to the



## MFFT Bar Manual

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case at the same time. It can avoid the steam and freeze at the cool side to the maximum.

### Sample:

Apply emulsion using with a spoon or buret from warm end right to cold end left, or in form starting and finishing right hand side. Apply control strip using emulsion of known MFFT Up to 6 single tracks can be applied. All coatings should be applied within ten minutes. Cover glass cover carefully.

### Film forming:

Check after about 60~90 minutes when the film should be started to form. When films have formed set cursor to read point on track where the film has coalesced over 90% of the track width. Read scale number above cursor corresponding number. If cursor is between two scale numbers read temperatures corresponding to higher and lower scale numbers and interpolate result. Use staff to read exact temperature of platen at MFFT point.

### Power Off:

Turn off all the switches, turn off the water. Immediately after use the platen should be cleaned; the most common method is to use a dilute detergent applied with a nylon scouring pad. Solvents to the particular coating can be used.



## 5 Attention:

1. The laboratory need good lighting and ventilation cheong.
2. Power supply:220v,50Hz,400W,sockets three holes and grounded.
3. Enviroment:Temperature  $23\pm 2$  °C ,Humidity <85%, Direct sun shall be avoided.
4. The water should remain clear and free of impurity and keep open.
5. Set up about cooling and heating:Cooling requirements for the first temperature point.Heating requirements for the thirteenth temperature point.Try to minimize the gap from cool to heat for enhancing the resolution.
6. Please grease when platen is not use for extended periods.
7. We should better know a type of material's MFT for comparison.
8. Emulsion coating should not coverd in tracks.
9. Put the thin aluminum foil(0.02mm) on the platen for clean easily.
- 10.Use  $\text{CaCl}_2$  as desiccant is better effect.

## Temperature Range(for reference only):

| Temperature (°C) |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|
| No.              | Cool | 1    | 2    | 3    | 4    | 5    | 6    |
| 1                | -    | 34.3 | 35.5 | 36.8 | 38.4 | 40.2 | 42.7 |
| 2                | 10.5 | 15   | 17.8 | 20.2 | 22.8 | 25.0 | 27.6 |
| 3                | -7   | -0.3 | 3.3  | 6.6  | 9.9  | 12.2 | 14.6 |
| 4                | -5   | -0.1 | 2.6  | 4.9  | 7.4  | 8.7  | 10.2 |
| 5                | -11  | -5.2 | -1.9 | 2.7  | 3.5  | 5.1  | 6.6  |

| Temperature (°C) |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|
| 7                | 8    | 9    | 10   | 11   | 12   | 13   | Heat |
| 44.7             | 48.1 | 51.8 | 55.2 | 59.8 | 65.3 | 70.0 | 73.5 |
| 29.9             | 32.8 | 35.9 | 38.9 | 42.5 | 45.4 | 50.0 | 52.5 |
| 17.1             | 19.3 | 21.4 | 23.6 | 25.7 | 27.6 | 30.0 | 31   |
| 11.9             | 12.9 | 13.8 | 14.8 | 15.4 | 16.1 | 16.4 | -    |
| 8.7              | 9.7  | 10.7 | 11.7 | 12.5 | 13.5 | 13.7 | -    |

\*Temperature is just for reference only. Temperature has a great deal with water temperature and flow.

\*Lower cooling temperature,the lower water temperature. In general, water temperature should be not higher than 20°C .

## 6 Service:

This instrument or part has a one year limited warranty. Under normal behavior in service Any because the instrument itself quality question causes the breakdown. This company free services or the replacement for you. Following several kind of situations outside free maintenance scope:

- The instrument depreciation, falls bumps, the outer covering has falls the mark obviously.
- The instrument the liquid immersion, the corrosion, as well as the battery flows the damage which the fluid creates.
- The user turns on the instrument arbitrarily, the product namely loses the maintenance.

## 7 Package List:

1. MFFTB Instrument 1
2. Glass cover 1
3. Desiccant case 2
4. Desiccant 1
5. Power cord 1
6. Water Pipe 2 (About 5 meters)
7. Scraper 1
8. Fuse 2 (0.5A 1A 5A 8A)
9. Manual(Instrument/Temperature Indicator/  
Temperature Display) 1
10. Certificate of quality 1
11. Packing box 1(Reusable)

