

# DW259A SWEATING GUARDED HOTPLATE







**Test Unit** 

Laptop



Test unit in the chamber



**MODEL NO.:** 

#### **DW259A**

## **APPLICATION:**

DW259A SWEATING GUARDED HOTPLATE is used to simulate the heat and mass transferring process occurs on the surface of human skin. It accurately test the thermal and water-vapor resistance of fabrics, films, coatings, foams and leather including multilayer assemblies used in clothing, quilts, sleeping bags, upholstery and similar textile or textile-like products under steady-state conditions.

#### **RELATED STANDARDS:**

| STANDARDS | GB/T 11048 | ASTM F1868 | ISO 11092 |
|-----------|------------|------------|-----------|
| STANDARDS | OD/111040  | ASTM D1518 | 150 11072 |

Note: this tester can conform to but not limit to the standards above, for more standards conformance, please contact us.

#### **FEATURE:**

- The chamber equipped with heater, compressor, blast fan, and air flue to ensure constant temperature and humidity;
- The chamber adopts extra-fine glass wool to ensure good thermal insulation;
- Inner chamber wall made of stainless steel, flat and splendid;
- Integrated design of control system and water supply system, automatically keep the water supply steady without any water leakage;
- High-accuracy lifting system of test plate, it can move to specific location with high • accuracy after choose specimen thickness;



| 0.0m | m • OK<br>Zero | -     |      |            |          |
|------|----------------|-------|------|------------|----------|
|      |                | 2     |      | Water Fill |          |
| Up   | Down           | Light | Heat | Water IN   | Water Ou |

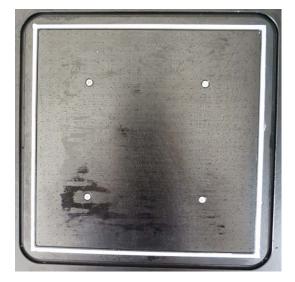
#### **Control interface**

• Air speed is continuously adjustable to meet more test standards;



Air speed sensor

• Porous test plate to simulate human skin, easy to clean;



Test plate



- LED soft light illuminating system;
- Connection with computer by WIFI, stable data transmission and quick response;
- Stainless steel shell of whole machine ensures long service life;
- User-friendly test software

|       |       |            | Śv     | veating         | Guarde        | ed Hotp | olate      |         | prture and Air —<br>st Plate |                 | 50-<br>45-   |              |                       |                     |
|-------|-------|------------|--------|-----------------|---------------|---------|------------|---------|------------------------------|-----------------|--------------|--------------|-----------------------|---------------------|
|       | 1     | Project    | Therma | I and Evaporati | ive Resistanc | e Test  |            | -   3   | 35.00                        | Chart           |              | _            |                       |                     |
| Ope   | en -  | Test ORG   |        |                 |               |         |            | - 6     | and Ring                     | C               | 40-          |              |                       | 7.                  |
| Sm    | na –  | Instrument |        |                 |               |         |            | _       | 35.01                        |                 | 35-          | 35.0         | 35.00°C               |                     |
| San   | xis - | Operator   |        |                 |               |         |            | - Lo    | wer Guard                    |                 | 30-          | 35.01 ℃      |                       |                     |
| Prev  | ew.   | Client     |        |                 |               |         |            |         | 35.01                        |                 |              |              |                       |                     |
|       |       | Sample     |        |                 |               |         |            |         |                              |                 | 25           |              |                       |                     |
| Pri   | ot    | Remark     |        |                 |               |         |            |         | 1.02                         |                 | 20-          |              |                       |                     |
|       | rate  | Test Date  |        |                 |               |         |            |         | 1.02                         |                 |              |              |                       |                     |
| 💥 Exi |       | New Yest   |        | Stand           | rard Name     |         | Test Pla   | te Temp | Amb Temp                     | Amb Humid       | Air Velocity | Vapor        | Rct0                  | Test Tim            |
|       |       | Thew Febr  |        | ISO 1           | 1092 Rct      |         | 35         | iC .    | 20°C                         | 65%             | 1.0m/s       | NIO          | 0.0732                | 15 Minut            |
|       |       | 1          |        |                 |               |         |            |         | STO                          | DP              |              | Ri           | ght Data              | All Data            |
| -     |       | Test Data  | NO.    | Time            | Voltage       | Current | Heat Ratio | Power   | Aver                         | age Temperature | (°C)         | Air Velocity | Ret                   | Ret-Ret0            |
|       |       |            | nO.    | inte            | Volt(V)       | Amps(A) | Percent(%) | Walt(W) | Test Plate                   | Guard Ring      | Lower Guard  | Average(m/s) | 111 <sup>2</sup> .K/W | π <sup>2</sup> .K/W |
|       |       |            | 1      | 16:35:00        | 23.10         | 2.57    | 9.064%     | 5.381   | 35.14                        | 35.04           | 35.00        | 1.02         | 0.1815                | 0.1083              |
|       | 1     |            | 2      | 16:49:58        | 23.07         | 2.54    | 8.342%     | 4.888   | 34.99                        | 34.98           | 35.01        | 1.00         | 0.1979                | 0.1247              |
|       | trol  | Connect    | 3      | 17:04:58        | 23.07         | 2.55    | 8.409%     | 4.947   | 34.99                        | 35.00           | 35.01        | 1.00         | 0.1955                | 0.1223              |
| Cont  |       |            | 4      | 17:19:58        | 23,11         | 2.57    | 8.407%     | 4.993   | 34.99                        | 35.00           | 35.01        | 0.99         | 0.1937                | 0.1205              |

#### Main interface

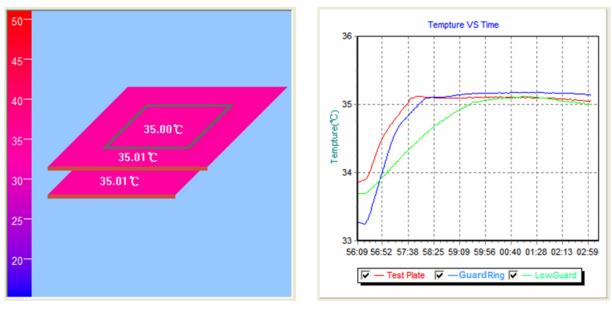
• It supports various test standards, i.e. common standards & customized standards, very convenient to operate.

| elect Standard  | ×                    |
|---|----------------------|
| Standrard Name  | Parameter            |
| GB/T 11048 Rct<br>GB/T 11048 Ret  | Test Plate Temp 35°C |
| ISO 11092 Rct<br>ISO 11092 Rct  | Ambient Temp         |
| ASTM F 1868-09 Part A<br>ASTM F 1868-09 Part B<br>ASTM F 1868-09 Part C RCT | Ambient Humidity 65% |
| ASTM F 1868-09 Part C RET<br>ASTM D 1518-85                                 | Air Velocity 1.0m/s  |
| JIS L1096-2010<br>ASTM F 1868-02 Part A<br>ASTM F 1868-02 Part B            | Vapor No             |
|   | Rct0 0.0848 m².K/W   |
| Add Standard Delete Standard  |                      |
|   | Test Time 15 Minut - |
| - Stand Describe  |                      |
| ISO 11092 thermal resistance, Rc  | t                    |
| ОК  | Cancel               |

**Standard Selection** 



• Two modes to display the temperature of test plate, guard ring and lower guard; one is diagram, the other is the temperature-time curve.



#### **Temperature Display**

• Test data can be saved as Excel format; Simple and practical design makes it convenient to analyze and print the data.

| 4  | A               | В        | С                                | D       | E          | F        | G           | Н               | I            | J            | K                     |  |
|----|-----------------|----------|----------------------------------|---------|------------|----------|-------------|-----------------|--------------|--------------|-----------------------|--|
| 1  |                 |          |                                  | SWEA    | TING GU/   |          | HOT-PI      | ATE             | Thermal R    | esistance T  | est (RCT)             |  |
| 2  |                 |          |                                  | OTTEN   |            | merman   | colorance r | 001 (1101)      |              |              |                       |  |
| 3  |                 | Project  | ect Thermal Resistance Test-Rct0 |         |            |          |             |                 |              |              |                       |  |
| 4  | Test ORG        |          |                                  |         |            |          |             |                 |              |              |                       |  |
| 5  | Instrument      |          |                                  |         |            |          |             |                 |              |              |                       |  |
| 6  | Operator Ediwin |          |                                  |         |            |          |             |                 |              |              |                       |  |
| 7  | Client Intertek |          |                                  |         |            |          |             |                 |              |              |                       |  |
| 8  | Sample          |          |                                  |         |            |          |             |                 |              |              |                       |  |
| 9  | F               | Remark   | Therm                            | al Resi | stance Te  | st ,Rct0 | test        |                 |              |              |                       |  |
| 10 | Te              | st Date  | 2012-                            | 12-21   |            |          |             |                 |              |              |                       |  |
| 11 |                 |          |                                  |         |            |          |             |                 |              |              |                       |  |
| 12 |                 | Standra  | rd Name                          | •       | Test Plate | e Temp   | Amb<br>Temp | Amb<br>Humidity | Air Velocity | Vapor        | Rct0                  |  |
| 13 |                 | GB/T 11  | 1048 Rct                         | :       | 35"        | C        | 20°C        | 65%             | 1.0m/s       | No           | 0                     |  |
| 14 |                 |          |                                  |         |            |          |             |                 |              |              |                       |  |
| 15 | NO.             | Time     | Voltage                          | Current | Heat Ratio | Power    | Avera       | ige Temper      | ature(°C)    | Air Velocity | Rct                   |  |
| 16 | NO. Time        |          | Volt(V)                          | Amps(A) | Percent(%) | Walt(W)  | Test Plate  | Guard Ring      | Lower Guard  | Average(m/s) | (m <sup>2</sup> .K/W) |  |
| 17 | 1               | 16:12:33 | 23.02                            | 2.40    | 15.72%     | 8.683    | 35.00       | 35.00           | 35.00        | 0.99         | 0.1115                |  |
| 18 | 2               | 16:17:33 |                                  | 2.40    | 15.72%     | 8.681    | 34.99       | 35.00           | 35.00        | 1.00         | 0.1114                |  |
| 19 | 3               | 16:22:33 | 23.01                            | 2.40    | 15.83%     | 8.744    | 34.98       | 35.00           | 35.00        | 1.01         | 0.1105                |  |

**Test Report** 



| <u>N</u> | AT SPECIFICATION:                    |                                     |
|----------|--------------------------------------|-------------------------------------|
| •        | Test item                            | Thermal resistance, R <sub>ct</sub> |
|          |                                      | Water-vapor resistance, Ret         |
| •        | R <sub>ct</sub> measuring range      | 0.000-2.0 m <sup>2</sup> .K/W       |
| •        | R <sub>ct</sub> resolution           | 0.0001 m <sup>2</sup> .K/W          |
| •        | Ret measuring range                  | 2-1000 m <sup>2</sup> .Pa/W         |
| •        | R <sub>et</sub> resolution           | 0.001 m <sup>2</sup> ·Pa/W          |
| •        | Test plate temperature               | 20-50℃, adjustable                  |
| •        | Temperature accuracy                 | ±0.03°C                             |
| •        | Temperature resolution               | ±0.01°C                             |
| •        | Air speed                            | 0-1.2m/s, adjustable                |
| •        | Air speed accuracy                   | $\pm 1\%$                           |
| •        | Test time                            | 3-30min, adjustable                 |
| •        | Test plate lifting range             | 0-60mm                              |
| •        | Test plate size                      | 254mm*254mm                         |
| •        | Thermal guard ring width             | 127mm                               |
| •        | Specimen size                        | 500mm*500mm                         |
| •        | Specimen thickness                   | 0-60mm                              |
| •        | Chamber temperature range & accuracy | 20-80°C±0.5°C                       |
| •        | Chamber temperature uniformity       | $\pm 2$ °C                          |
| •        | Chamber humidity range & accuracy    | 30%RH~80%RH±2%RH                    |
| •        | Inner dimensions of chamber          | 1000*1000*1000mm (L*W*H)            |
| •        | Power supply of chamber              | AC380V, 50Hz, 3 phase               |
| •        | Power supply of test unit            | AC220V, 50Hz, 1 phase               |
| •        | Dimensions                           | 1800×1370×1660mm                    |
| •        | Weight                               | 540kg                               |
|          |                                      |                                     |

## **STANDARD CONFIGURATION:**

| No. | Item    | Quantity |
|-----|---------|----------|
| 1.  | Chamber | 1 set    |



#### FANYUAN INSTRUMENT (HF) CO., LTD. DOWELL SCIENCE & TECHNOLOGY (HK) CO., LTD. ADD: TIANYUAN ROAD 9#, HIGH-TECH ZONE, HEFEI CITY, CHINA POSTAL CODE: 230088 TEL: +86-551-68105003 FAX: +86-551-65232507 EMAIL: SALES@HKDOWELL.COM

| 2. | Test unit | 1 set           |
|----|-----------|-----------------|
| 3. | Laptop    | 1 set           |
| 4. | Membrane  | 1 pack (250pcs) |
| 5. | Software  | 1CD             |