# PCE-WAM 60

# Laboratory Water Activity Meter

# Operation Manual

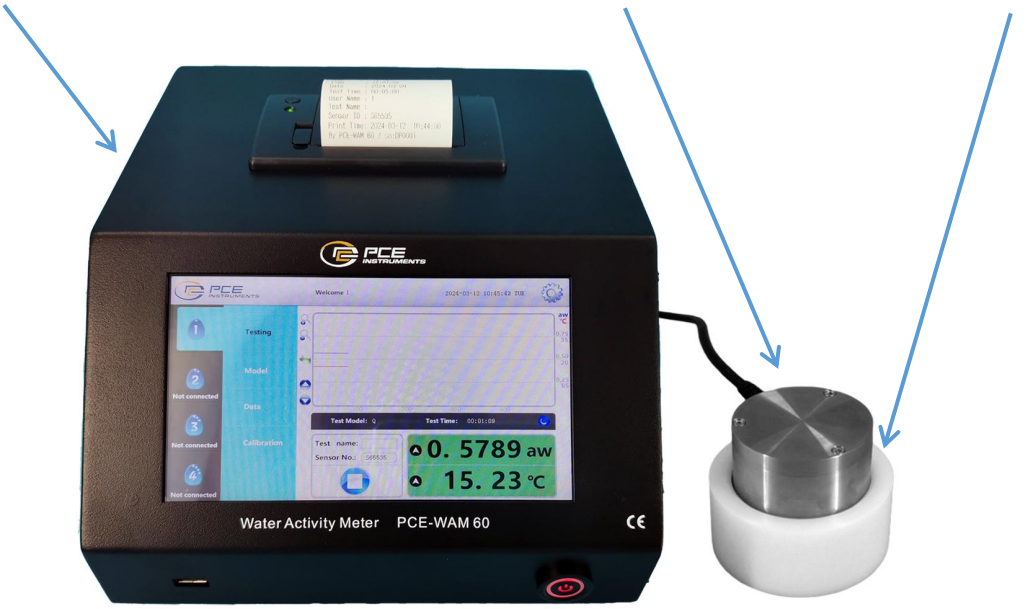



PCE Deutschland GmbH

## 1. Description

PCE-WAM 60 includes:
1 x water activity meter PCE-WAM 60, 1 x aw sensor, 1 x sample holder, 20 x sample cups, 1 x USB cable B-type to A-type, 1 x mains adaptor 12 V, 5 A, 1 x PC software (Windows 10 or higher), 1 x user manual
The software can be found in the download area.
Compatible with Windows 10 and higher.

PCE-WAM 60 host probe base

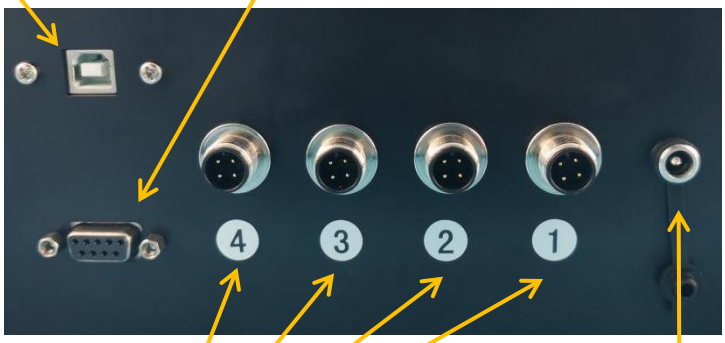





measuring cups

PC connect USB

RS232 interface

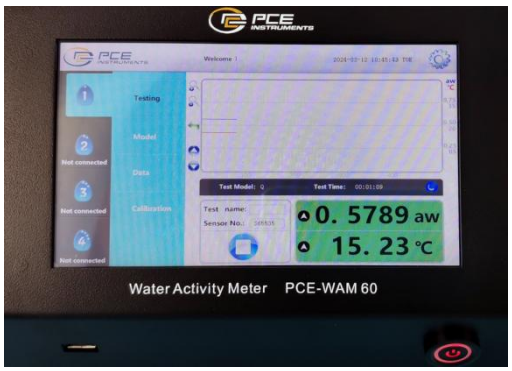



4 probe host interface

power jack

## 2. Front introduction

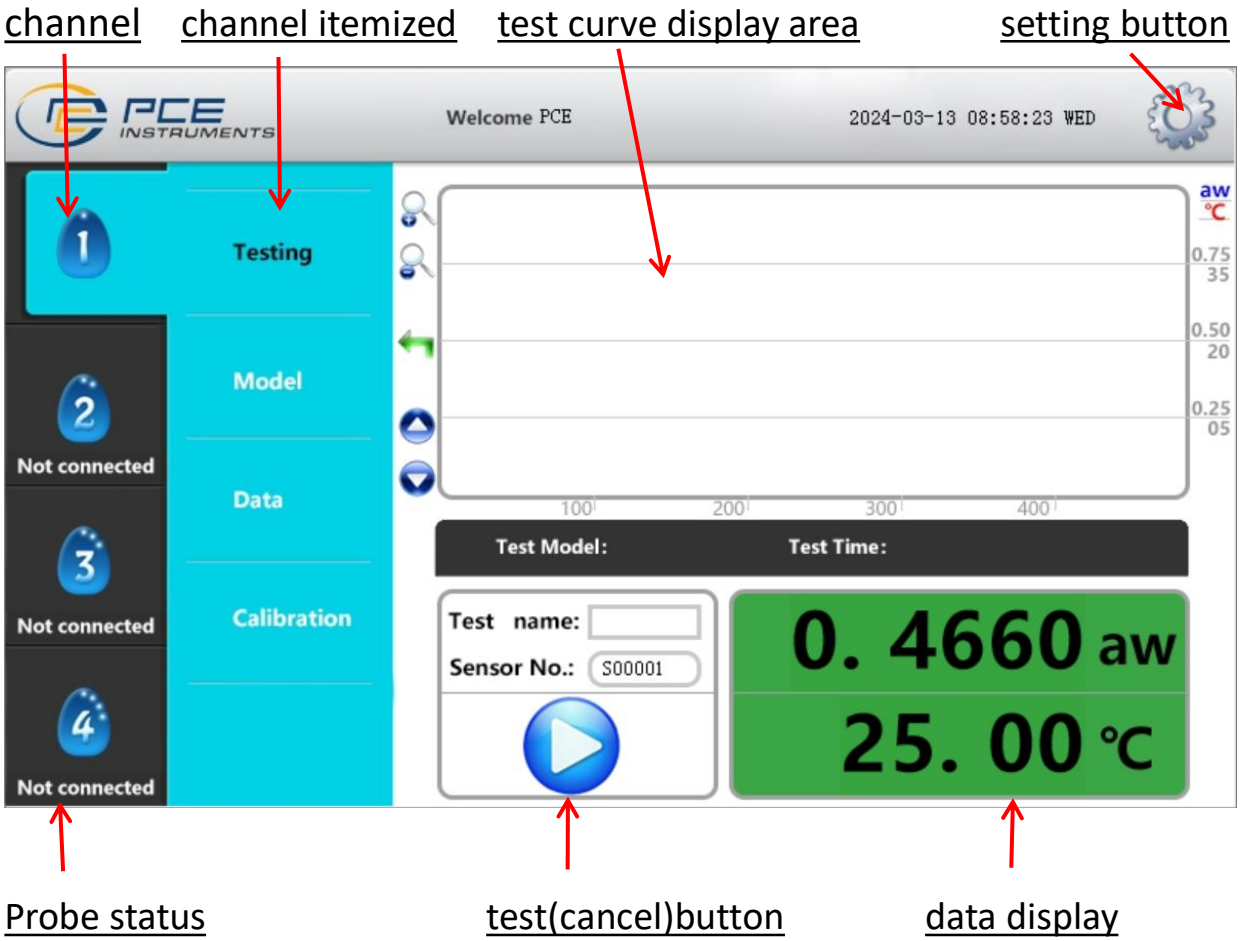
7 Inch Touch Screen




USB Port

Power button

## 3. Main interface introduction:



# 4. Quick operation

4.1. Connect the instrument; Prepare samples;

4.2. The instrument and the sample shall be kept at the same ambient temperature for more than 1 hour to ensure that the temperature of the sample and the instrument before the test is the same;

4.3. Tap the power button to turn on the power and the power indicator is red;

4.4. Operator login; Default login details as supplied by the manufacturer:

Username: admin

Password: admin

4.5. The main interface displays the water activity and temperature values of the connecting channel and the current channel 1 (if connected);

4.6. Select the channel connecting the probe, put the sample into the measuring cup, not more than 3 / 4, and put it into the measuring base;

4.7. Place the sensor probe to ensure that the probe is placed correctly and that there is no leakage in the seal;

4.8. Press the easurement key  to start the measurement. If you press the measurement key again, the test will be canceled;

4.9. If there are multiple channels, repeat steps 5-8;

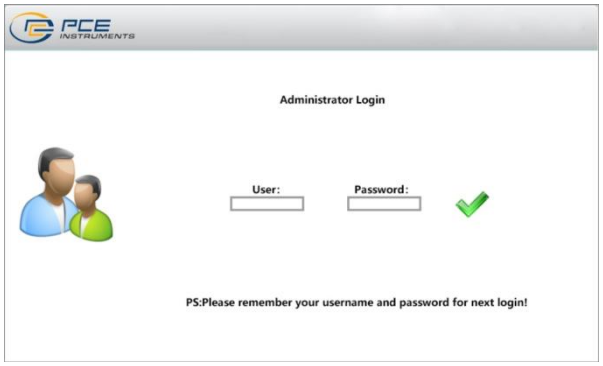
4.10. After the measurement is completed, there will be a prompt tone automatically. If the main interface is not the channel, the corresponding channel number +  will be displayed on the left side to indicate the end of the channel test, and the test results of the channel will be displayed below. No need to switch the main interface;

4.11. Select different main channels to view and process;

4.12. After the measurement is completed, please shut down, clean and store in a cool place;

4.13. If it is not used for a long time, please cut off the power adapter.

# 5. Initial boot login settings




For the first time, you need to set the super administrator account to log in and manage users later. When you log in to the PCE-WAM 60 for the first time, please enter this combination:

Username: admin

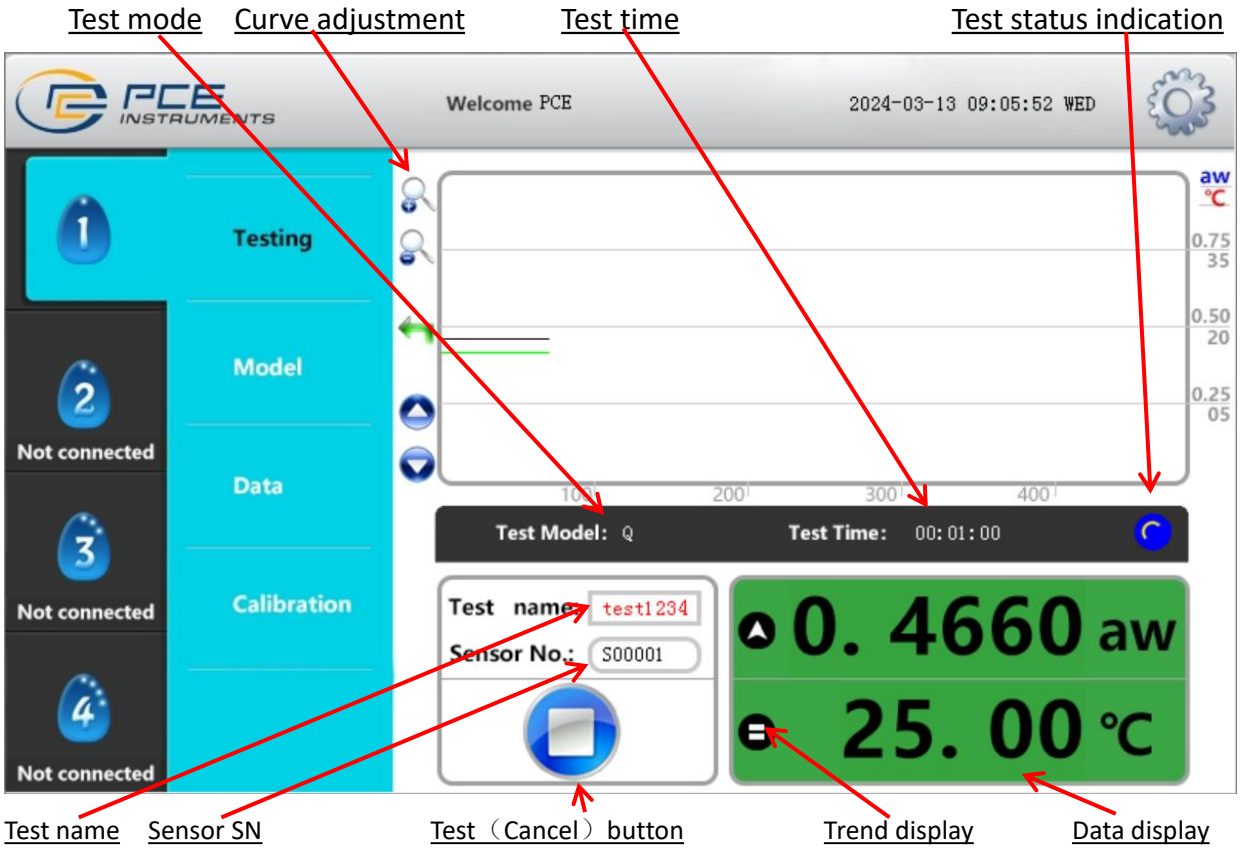
Password: admin

# 6. Main interface introduction and operation

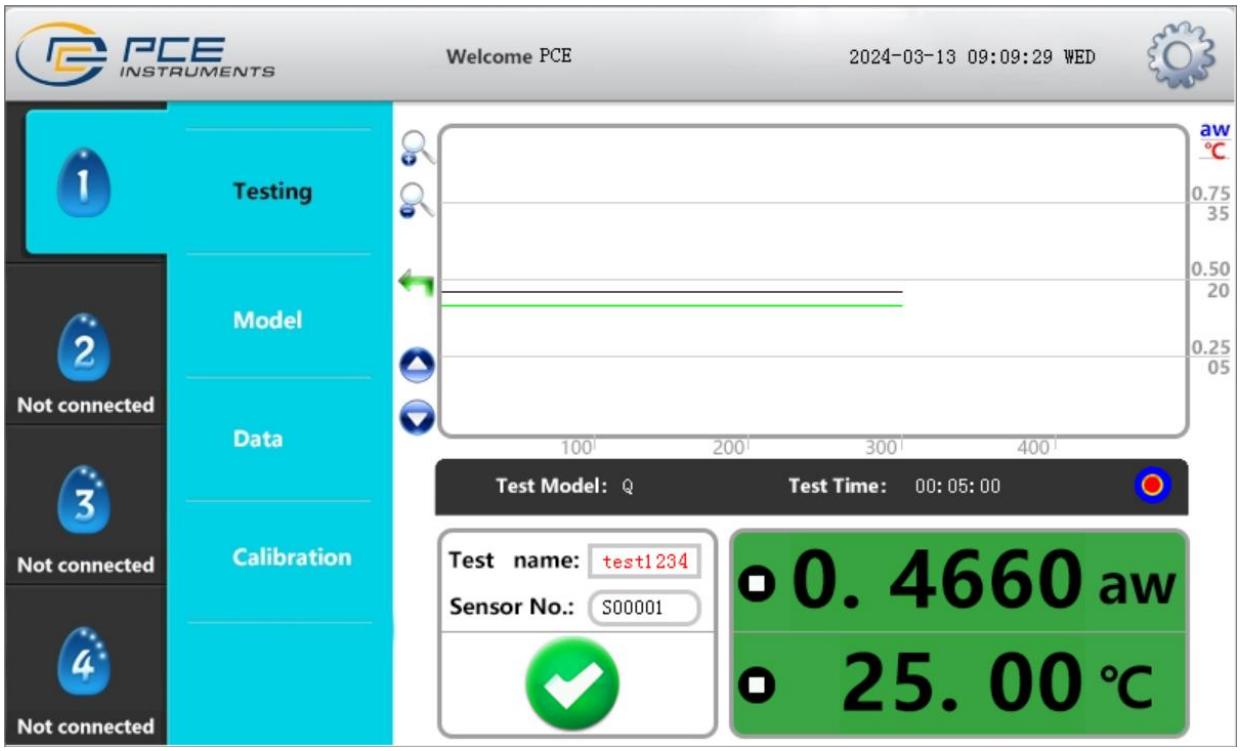
## 6.1. Testing interface：

### 6.1.1. Testing introduction:

#### 6.1.1.1. Testing start interface:



6.1.1.2. Testing end interface：




6.1.1.3. Click the test button to start measurement, and click again to cancel the test;

6.1.1.4. Test Name: enter the name of the current test item;

6.1.1.5. During the measurement process, there are two data change trends, which is convenient to judge the data change of the current product;

6.1.1.6. When the test is finished, there will be an end prompt sound, and the results will be automatically stored and printed. There will be an end prompt icon on the interface.

6.1.2. Curve display interface adjustment button:



Enlarge data curve

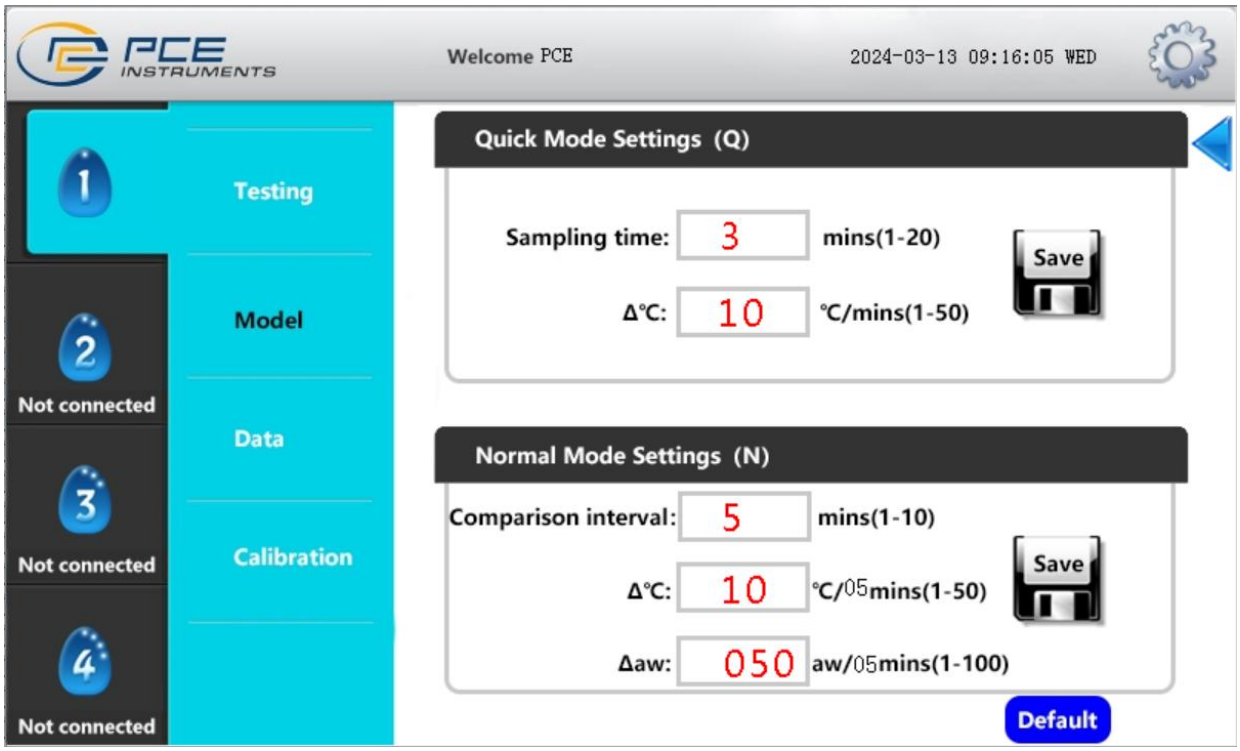
Reduce data curve

Return to original data curve

Move data curve up

Move data curve down

6.2. Mode setting: (only administrators and operators can enter)




6.2.1. two modes: fast and normal. (the continuous mode is the continuous display mode when the measurement key is not pressed)

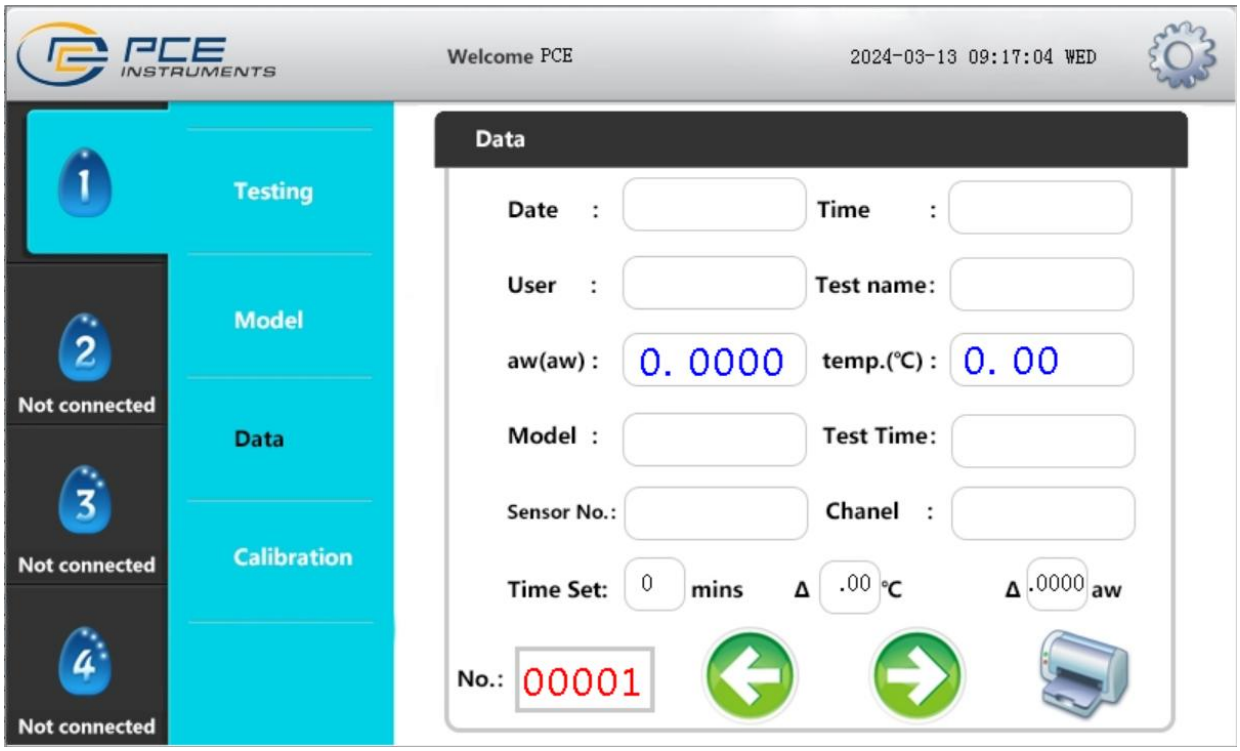
6.2.2. Default model: fast mode

6.2.3. when you need to modify parameters, click the data box, enter with the numeric keypad, and click save after completion

6.2.4. the symbol shows that the current mode is valid. When switching is required, click the corresponding save button to switch

6.2.5. to return to the factory default setting, click the "default" button.

6.3. data record:



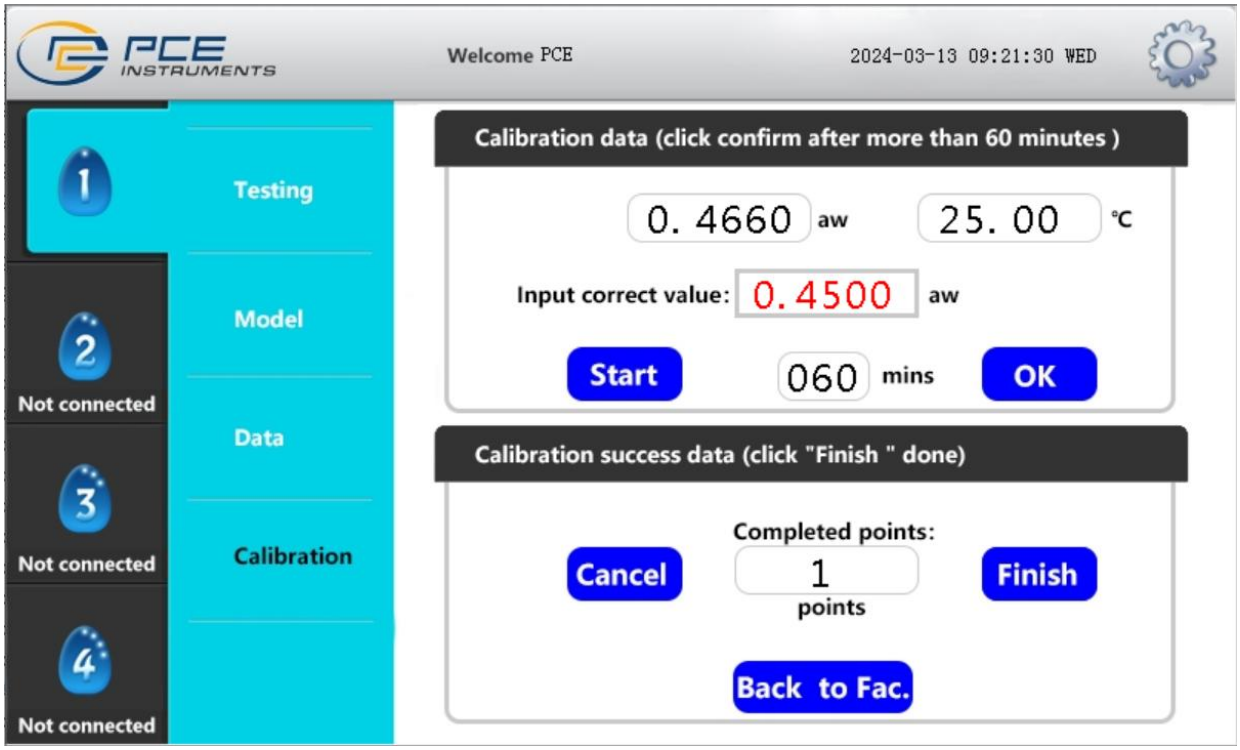

6.3.1. Data records: 65535 at most for each channel

6.3.2. The bottom is the setting parameters of the data: time setting (fast mode is the sampling time, normal mode is the comparison interval), temperature Δ Temperature difference set for mode, activity Δ Activity difference set for mode

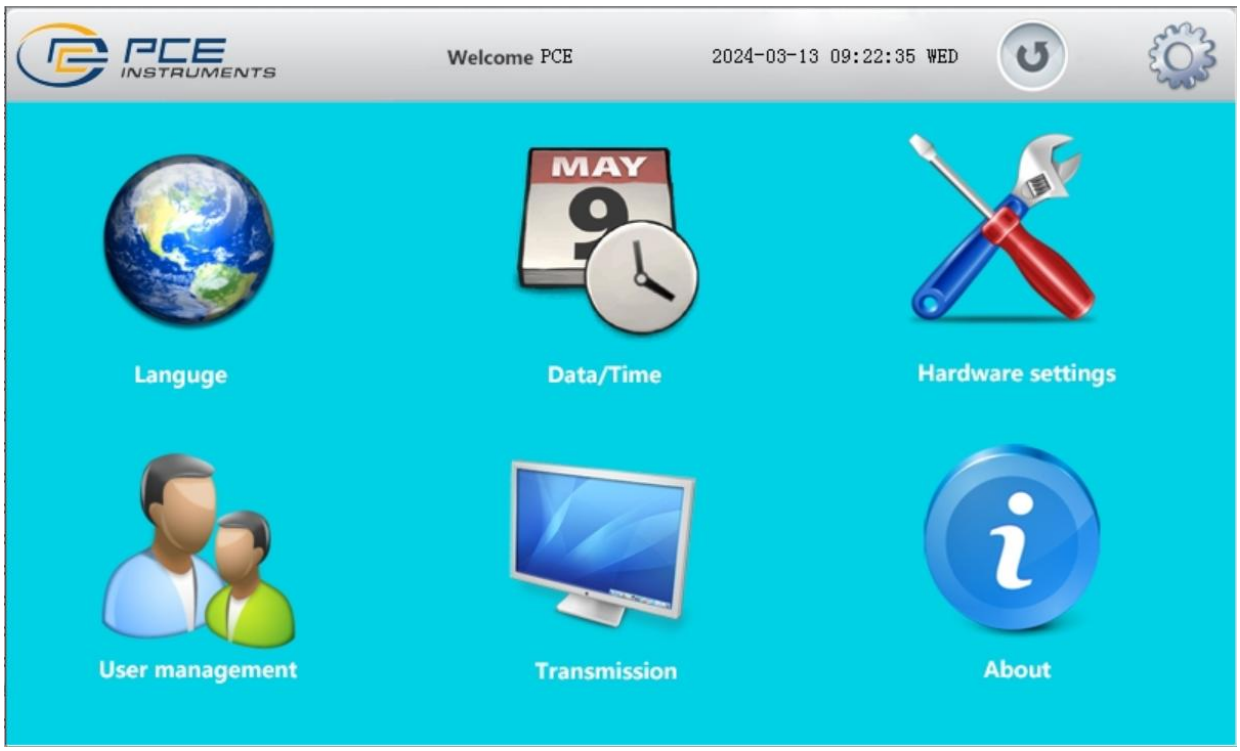
6.3.3. The left and right buttons (arrows) adjust the number or directly enter the data number in the number box

6.3.4. The printer button can print the current recorded data

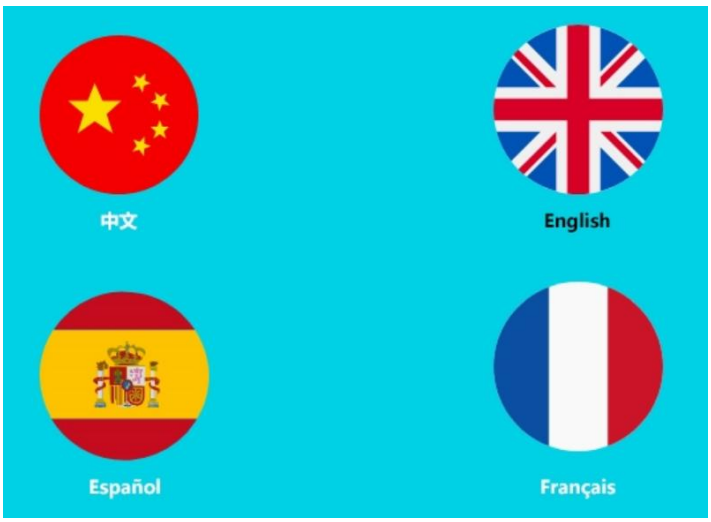
6.4. Calibration: (only for internal use by PCE Instruments, see chapter 8)



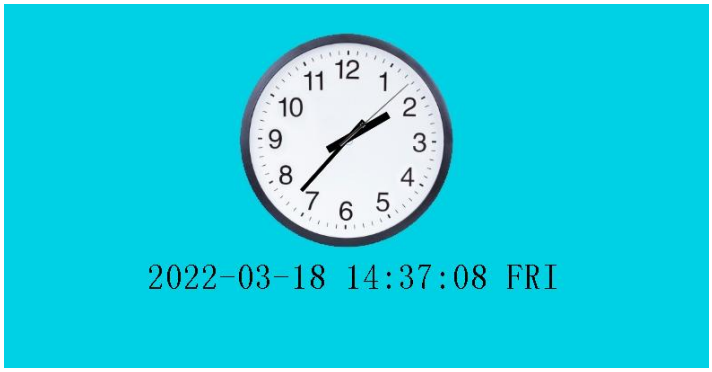
# 7. Settings




7.1. Language selection: Chinese, English, French, Spanish



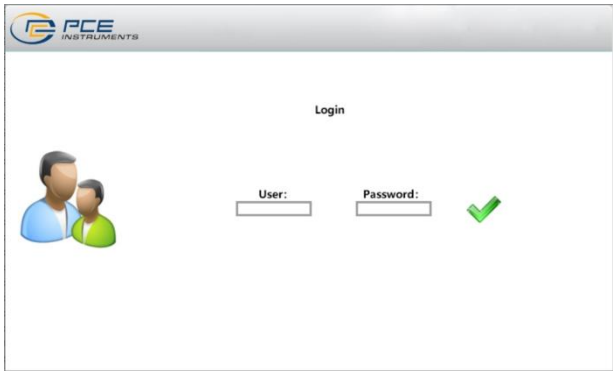
7.2. Date and time setting: set the correct date and time




7.3. Hardware setting: buzzer switch and brightness setting




7.4. User management: non administrators and administrators can quit switching users, or modify their own names and passwords; Administrators can delete and add users and level permission settings



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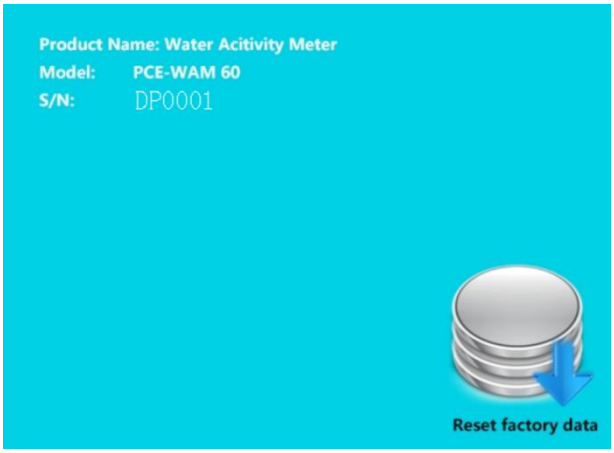


# 8. Calibration

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# 9. Connect the computer

9.1. Connect the USB cable to the computer and install the driver (download from the website);

9.2. Install the software (download from the website),

directly unzip it to the root directory of the hard disk, click awsoft.exe in the directory to start the software, and automatically add desktop shortcut after startup to facilitate the next use;

9.3. Turn on data transmission in settings;

9.4. Exit to the main interface;

9.5. Interface display: computer transmission

9.6. Open the software; For the first time, you need to register a super administrator, the top administrator.

9.7. After entering the software, you can select "user management" in the menu to add and manage users. There are three levels:

9.8. If there is only one serial port connected, the software will automatically connect. If multiple serial ports are in use, you can select "next interface" in the connection sequence in the menu until there is data on the interface;

9.9. Set the measurement mode, temperature difference / min, sampling time (q), comparison interval (n), activity difference / min. you can select the default setting in the menu, and the setting will be automatically recorded next time;

9.10. After filling in the test items (optional), the measurement can be started;

9.11. Excel can be printed and output after the test; At the record entry, select a data record that can be output by double clicking. The top toolbar can be zoomed in and out to switch themes and output pictures. You can choose to use graphic tools;

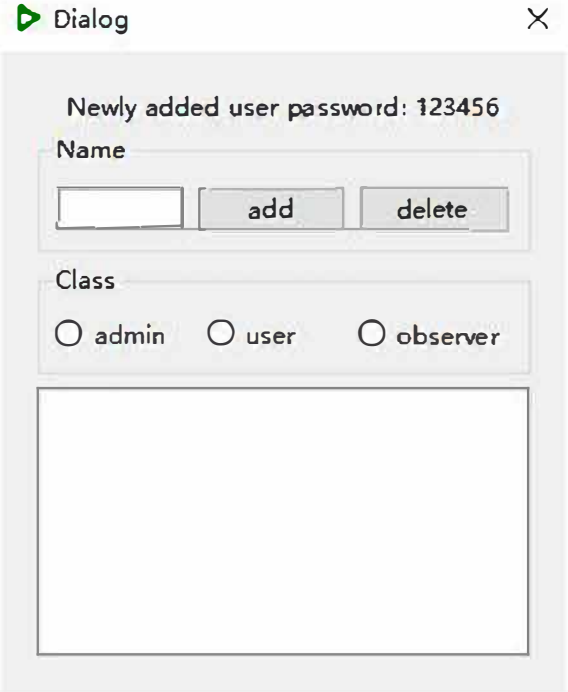
9.12. Data processing card selection: when the host is in the computer transmission mode and the host is in the operation mode, you can click to open "data switching", and the user can export the machine memory data or print and store the internal data;

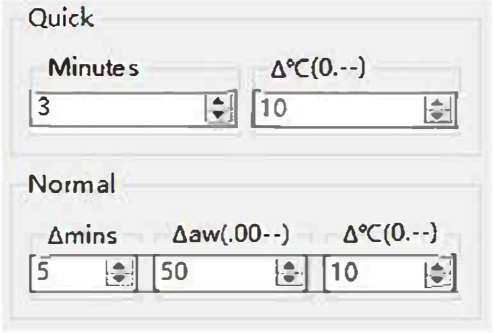
9.13. After the stored data is opened, click the data in the data list below to view the curve processing here;

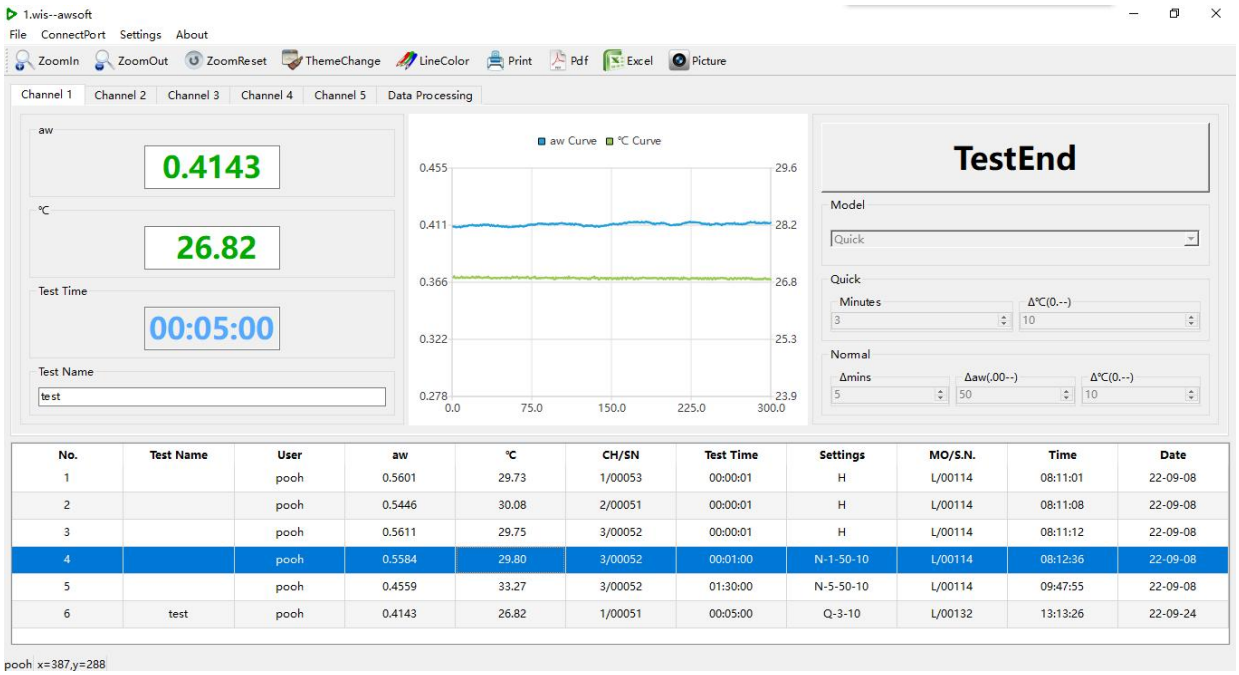
9.14. After the host data processing is completed, click this button to turn it off and switch to the measurement mode;

9.15. If you want to turn off the computer data transmission: turn off the data transmission in the setting.


Dialog
Super administrator registration
User Name:
Password :
Confirm Pwd:
register


Dialog
Newly added user password: 123456
Name
add
delete
Class
admin
user
observer


Quick
Minutes
Δ℃(0.--)
3
10
Normal
Δmins
Δaw(.00--)
Δ℃(0.--)
5
50
10




| No. | Test Name | User | aw | ℃ | CH/SN | Test Time | Settings | MO/S.N. | Time | Date |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | pooh | 0.5601 | 29.73 | 1/00053 | 00:00:01 | H | L/00114 | 08:11:01 | 22-09-08 |
| 2 | | pooh | 0.5446 | 30.08 | 2/00051 | 00:00:01 | H | L/00114 | 08:11:08 | 22-09-08 |
| 3 | | pooh | 0.5611 | 29.75 | 3/00052 | 00:00:01 | H | L/00114 | 08:11:12 | 22-09-08 |
| 4 | | pooh | 0.5584 | 29.80 | 3/00052 | 00:01:00 | N-1-50-10 | L/00114 | 08:12:36 | 22-09-08 |
| 5 | | pooh | 0.4559 | 33.27 | 3/00052 | 01:30:00 | N-5-50-10 | L/00114 | 09:47:55 | 22-09-08 |
| 6 | test | pooh | 0.4143 | 26.82 | 1/00051 | 00:05:00 | Q-3-10 | L/00132 | 13:13:26 | 22-09-24 |

pooh x=387,y=288




| No. | Test Name | User | aw | ℃ | CH/SN | Test Time | Settings | MO/S.N. | Time | Date |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | pooh | 0.5601 | 29.73 | 1/00053 | 00:00:01 | H | L/00114 | 08:11:01 | 22-09-08 |
| 2 | | pooh | 0.5446 | 30.08 | 2/00051 | 00:00:01 | H | L/00114 | 08:11:08 | 22-09-08 |
| 3 | | pooh | 0.5611 | 29.75 | 3/00052 | 00:00:01 | H | L/00114 | 08:11:12 | 22-09-08 |
| 4 | | pooh | 0.5584 | 29.80 | 3/00052 | 00:01:00 | N-1-50-10 | L/00114 | 08:12:36 | 22-09-08 |
| 5 | | pooh | 0.4559 | 33.27 | 3/00052 | 01:30:00 | N-5-50-10 | L/00114 | 09:47:55 | 22-09-08 |

# 10. Maintenance and precautions

10.1. Do not place and measure organic solvent products: alcohol and alcoholic products, volatile chemicals, such as chemical solvents or organic compounds, especially high concentration and long-term contact will be more dangerous (b) ketene, acetone, isopropanol, ethanol, toluene, etc. have been shown to cause humidity readings to shift – in most cases irreversible Such chemicals are the main components of epoxy materials, glues, adhesives, etc., which are easy to appear in the drying and curing process. Such chemicals are also added to many plastics, used as packaging materials, and sometimes released from plastics.

10.2. Both acid and alkali may cause irreversible accuracy drift of the sensor, so contact with the following chemicals should be avoided: hydrochloric acid, sulfuric acid, nitric acid and ammonia. High concentrations of ozone or hydrogen peroxide may also lead to the same results. The above substances are only examples and are not complete lists.

10.3. The sensor shall not be in contact with cleaning agent (such as plate washing water) and shall not be blown by strong wind containing oil and gas Contact with detergent may cause the sensor output to be offset or completely damaged. In order to avoid contact with high concentration of volatile chemicals (solvents, such as ethanol, isopropanol, methanol, acetone, detergent, etc.), good ventilation (fresh air circulation) shall be ensured.

10.4. Storage conditions: temperature: 10 ° C – 50 ° C, humidity: 20% – 60% RH; You can put silica gel desiccant into the measuring base and cover the sensor probe for storage.

10.5. Don't expose to the sun

10.6. Do not stay in high humidity for a long time, which will lead to high data. It needs to be placed in a dry environment for a period of time to automatically restore the accuracy.

10.7. Do not contaminate the sensor when measuring the sample

10.8. Prevent liquid and irritating gas from entering the sensor

10.9. Please use the power adapter provided by the manufacturer to connect the power supply

10.10. If it is not used for a long time, please disconnect the power adapter

10.11. Please store the instrument in a cool and dry place

# 11. Accessories

11.1. Spare measuring cups PCE-WAM 60-CUP;

11.2. Additional sensor PCE-WAM 60-SENS;

11.3. Additional sensor connection base PCE-WAM 60-BASE;

11.4. Replacement printer paper rolls PCE-WAM 60-PP

## 12. Comparison table of the latest saturated salt solution relative humidity

Water activity = relative humidity /100;

Simple configuration method: ensure that there is salting out or surplus

| ℃\# | 1# CsF | 2# LiBr | 4# LiF | 7# CH3COOK | 8# LiCl | 9# MgCl2 | 11# K2CO3 | 12# Mg(NO3)2 |
|---|---|---|---|---|---|---|---|---|
| 0 | | 7.75±0.83 | 11.23±0.54 | | | 33.66±0.33 | 43.13±0.66 | |
| 5 | 5.52±1.9 | 7.43±0.76 | 11.26±0.47 | | | 33.60±0.28 | 43.13±0.50 | 60.35±0.55 |
| 10 | 4.89±1.6 | 7.14±0.69 | 11.29±0.41 | 23.38±0.53 | | 33.47±0.24 | 43.14±0.39 | 58.86±0.43 |
| 15 | 4.33±1.4 | 6.86±0.63 | 11.30±0.35 | 23.40±0.32 | | 33.30±0.21 | 43.15±0.33 | 57.36±0.33 |
| 20 | 3.83±1.1 | 6.61±0.58 | 11.31±0.31 | 23.11±0.25 | | 33.07±0.18 | 43.16±0.33 | 55.87±0.27 |
| 25 | 3.39±0.94 | 6.37±0.52 | 11.30±0.27 | 22.51±0.32 | 30.85±1.3 | 32.78±0.16 | 43.16±0.39 | 54.38±0.23 |
| 30 | 3.01±0.77 | 6.16±0.47 | 11.28±0.24 | 21.61±0.52 | 27.27±1.1 | 32.44±0.14 | 43.17±0.50 | 52.89±0.22 |
| 35 | 2.69±0.63 | 5.97±0.43 | 11.25±0.22 | | 24.59±0.64 | 32.05±0.13 | | 51.40±0.24 |
| 40 | 2.44±0.52 | 5.80±0.39 | 11.21±0.21 | | 22.68±0.81 | 31.60±0.13 | | 49.91±0.29 |
| 45 | 2.24±0.44 | 5.65±0.35 | 11.16±0.21 | | 21.46±0.70 | 31.10±0.13 | | 48.42±0.37 |
| 50 | 2.11±0.40 | 5.53±0.31 | 11.10±0.22 | | 20.80±0.62 | 30.54±0.14 | | 46.93±0.47 |
| 55 | 2.04±0.38 | 5.42±0.28 | 11.03±0.23 | | 20.60 ±0.56 | 29.93±0.16 | | 45.44±0.60 |
| 60 | 2.03±0.40 | 5.33±0.25 | 10.95±0.26 | | 20.77±0.53 | 29.26±0.18 | | |
| 65 | 2.08±0.44 | 5.27±0.23 | 10.86±0.29 | | 21.18±0.53 | 28.54±0.21 | | |
| 70 | 2.20±0.52 | 5.23±0.21 | 10.75±0.33 | | 21.74±0.61 | 27.77±0.25 | | |
| ℃\# | 13# NaBr | 14# KI | 16# NaNO3 | 17# NaCl | 19# KBr | 21# KCl | 23# KNO3 | 24# Mg(NO3)2 |
| 0 | | | | 75.51±0.34 | | 88.61±0.53 | 96.33±2.9 | |
| 5 | 63.51±0.70 | 73.30±0.34 | 78.57±0.52 | 75.65±0.27 | 85.09±0.26 | 87.67±0.45 | 96.27±2.1 | |
| 10 | 62.15±0.60 | 72.11±0.31 | 77.53±0.45 | 75.67±0.22 | 83.75±0.24 | 86.77±0.39 | 95.96±1.4 | |
| 15 | 60.68±0.51 | 70.98±0.28 | 76.46±0.39 | 75.61±0.18 | 82.62±0.22 | 85.92±0.33 | 95.41±0.96 | |
| 20 | 59.14±0.44 | 69.90±0.26 | 75.36±0.35 | 75.47±0.14 | 81.67±0.21 | 85.11±0.29 | 94.62±0.66 | |
| 25 | 57.57±0.40 | 68.86±0.24 | 74.25±0.32 | 75.29±0.13 | 80.89±0.21 | 84.34±0.26 | 93.58±0.55 | ?97.88±0.49 |
| 30 | 56.03±0.38 | 67.89±0.23 | 73.14±0.31 | 75.09±0.11 | 80.27±0.21 | 83.62±0.25 | 92.31±0.60 | 97.08±0.41 |
| 35 | 54.55±0.38 | 66.96±0.23 | 72.06±0.32 | 74.87±0.12 | 79.78±0.22 | 82.95±0.25 | 90.79±0.83 | 96.42±0.37 |
| 40 | 53.17±0.37 | 66.09±0.23 | 71.00±0.34 | 74.68±0.13 | 79.43±0.24 | 82.32±0.25 | 89.03±1.2 | 95.89±0.37 |
| 45 | 51.95±0.36 | 65.26±0.24 | 69.99±0.37 | 74.52±0.16 | 79.18±0.25 | 81.74±0.28 | 87.03±1.8 | 95.5±0.40 |
| 50 | 50.93±0.35 | 64.49±0.26 | 69.04±0.42 | 74.43±0.19 | 79.02±0.28 | 81.20±0.31 | 84.78±2.5 | 95.25±0.48 |
| 55 | 50.15±0.28 | 63.78±0.28 | 68.15±0.49 | 74.41±0.24 | 78.95±0.32 | 80.70±0.35 | | |
| 60 | 49.66±0.26 | 63.11±0.31 | 67.35±0.57 | 74.50±0.30 | 78.94±0.35 | 80.25±0.41 | | |
| 65 | 49.49±0.20 | 62.50±0.34 | 66.64±0.67 | 74.71±0.37 | 78.99±0.40 | 79.85±0.48 | | |
| 70 | 49.70±0.30 | 61.93±0.38 | 66.04±0.78 | 75.06±0.45 | 79.07±0.45 | 79.49±0.57 | | |

# Contact information

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