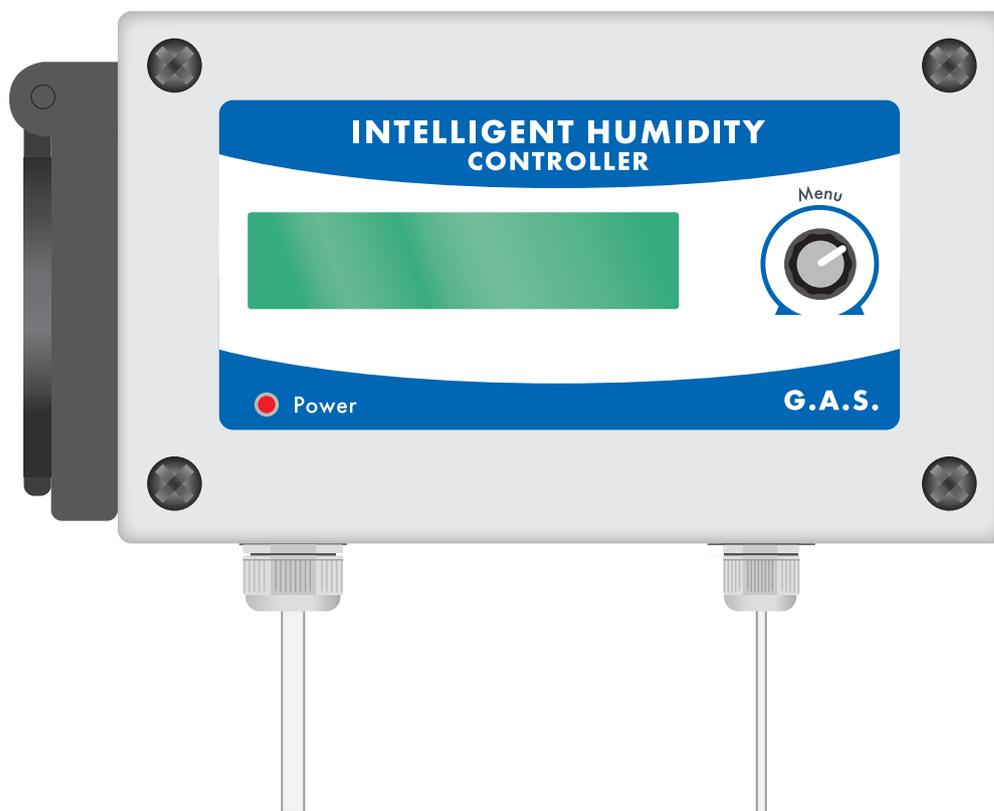


GLOBAL AIR SUPPLIES UK
**INTELLIGENT
HUMIDITY
CONTROLLER**



USER GUIDE

SENSOR POSITIONING

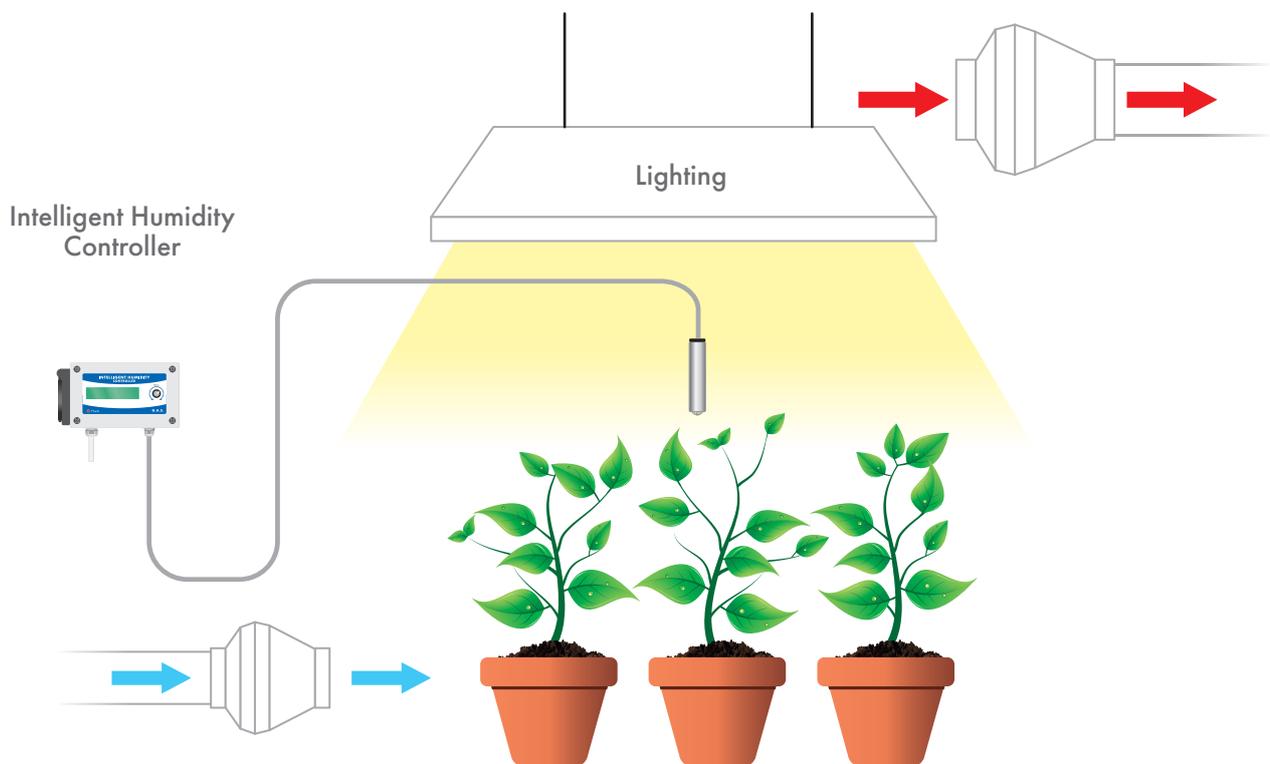
The best position for the sensor is the middle of the grow room just above the canopy. Make sure that the sensor can measure the light in the room.

PLEASE NOTE: We advise you have good air circulation in your grow room, this will prevent hot spots or high humidity zones. The sensor will be more accurate if the air is moving inside the grow room, therefore, making the controller more accurate.



CAUTION

DO NOT drop or hit the sensor.
KEEP AWAY from water and aerosols



CONNECTING THE CONTROLLER

Plug the controller into the mains.

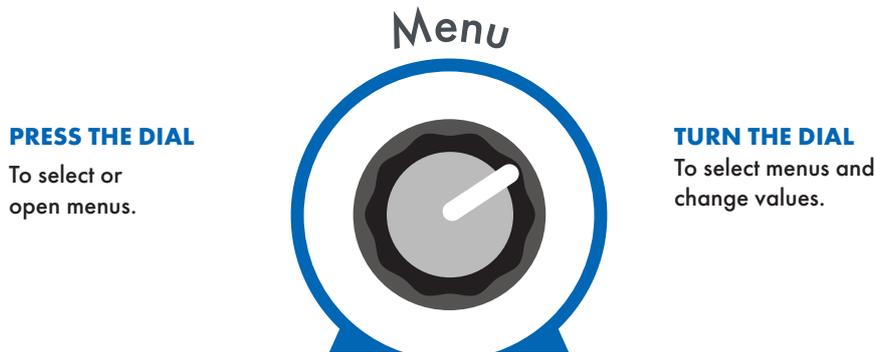
Plug your humidifier into the UK plug socket on the controller. Make sure that the humidifier is turned on.

The controller will determine if it is day or night and turn the humidifier on and off to control the humidity according to the set point.

Max load is 500W

CONTROL

The controller is operated by the selection dial.



MAIN MENU – HOME SCREEN

When the controller is turned on, the main menu – home screen is displayed. This shows your room temperature °C/°F, relative humidity %RH and control type.

There are four control types. The home screen will change depending on the control type selected.

1. 24 hours relative humidity
2. Relative humidity day / relative humidity night
3. 24 hour VPD
4. VPD day / relative humidity night

When the controller is first turned on the control type will be 24 hour relative humidity.

HOME SCREEN

```
%RH | 1 °C | 24HR  
60.0 | 120.21 | %RH
```



TURN THE DIAL
To show control type setting.

From the home screen turn the selection dial

Turning the selection dial you can see the current control type and current set point.

CONTROL TYPE SCREEN

```
24 HOUR HUMIDITY  
60%
```



PRESS THE DIAL
To open menu.

From the home screen press the selection dial

This will open the main menu.

The first item on the menu will always be the control type preselected.

By turning the selection dial to the right you move down the menu items by turning the selection dial to the left you move up the items.

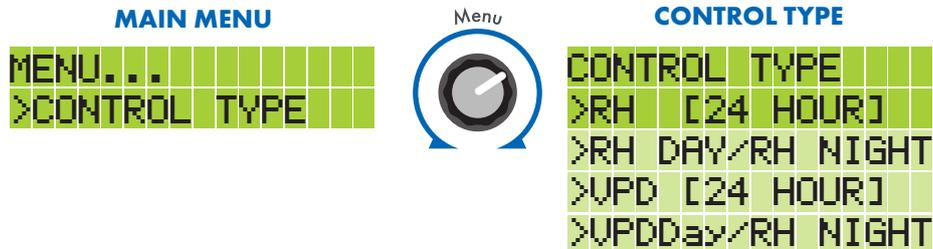
MAIN MENU

```
MENU...  
>RH 24HR TARGET  
>CONTROL TYPE  
>PROBE CALIBRATE  
>TEMP UNITS  
>EXIT
```

CONTROL TYPES

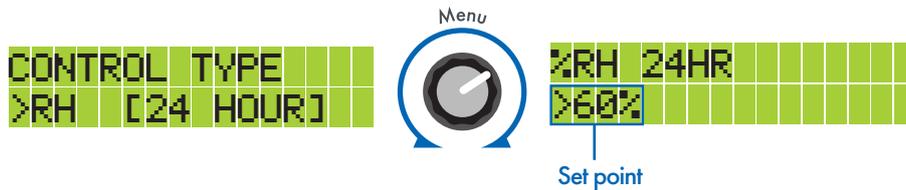
There are four ways you can set the controller to regulate the humidity. When you select a control type the home screen and top menu change to show the way the controller is working.

To change control type press the selection dial to enter the main menu, scroll down to CONTROL TYPE and press the selection dial.



RELATIVE HUMIDITY 24 HOURS

Will maintain your set relative humidity 24 hours a day.



Press the selection dial to select 24 hour relative humidity.

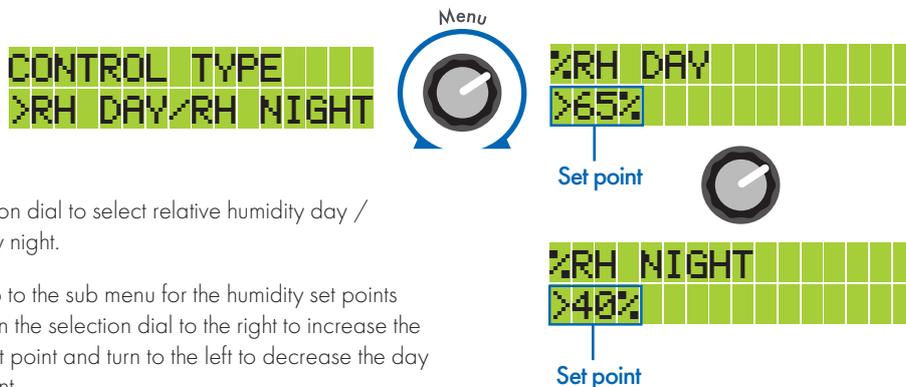
Press the selection dial to save and exit the menu.

You will then go to the sub menu. Turn the selection dial to the right to increase the humidity set point and turn to the left to decrease the humidity set point.

The controller will now maintain your desired humidity 24 hours a day.

RELATIVE HUMIDITY DAY / RELATIVE HUMIDITY NIGHT

Will allow you to set relative humidity for day (lights on) and a different humidity setting for night (lights off).



Press the selection dial to select relative humidity day / relative humidity night.

You will then go to the sub menu for the humidity set points you require. Turn the selection dial to the right to increase the day humidity set point and turn to the left to decrease the day humidity set point.

Press to save day humidity set point.

You can then change the night humidity set point.

Press the selection dial to save night humidity set point and exit.

The controller will now maintain your desired humidity settings for day and night.

UNDERSTANDING VPD

The Vapour Pressure Deficit or “VPD” can be thought of as the drying power of the air.

High VPD means the air is dry, and wants to suck the water out of plants leaves. Low VPD means the air has plenty of moisture and won't encourage water uptake through plants. VPD is a measurement of the difference of the water vapour pressure of the plant's leaves compared with the air. The smaller the difference, or the lower the VPD, the less your plant will transpire. Transpiration is a very important aspect of plant health, the rate the plant transpires has a direct effect on the amount of water your plant draws up through its roots. Young plants don't have many leaves or roots, so perform better in a low transpiration environment (low VPD). As the plant grows larger, with more roots and leaves, it can cope with higher transpiration rates. You can set the controller to a VPD range suitable for your plant's growth stage, we have categorised three ranges for different stages:-

As the plant grows it needs less humidity, you can set your humidity within a range and we have indicated three ranges for the different stages:-

Early Veg – VPD 0.4-0.8 Kpa

This is for late propagation when your plants are young. They have few leaves and a small root system, so will perform best in this setting range when transpiration is limited.

Early Flower- VPD 0.8-1.2 Kpa

When your plants are entering vigorous growth in late veg and early flower, they have more leaves and roots, so can and take up more water and nutrients with this higher transpiration setting range.

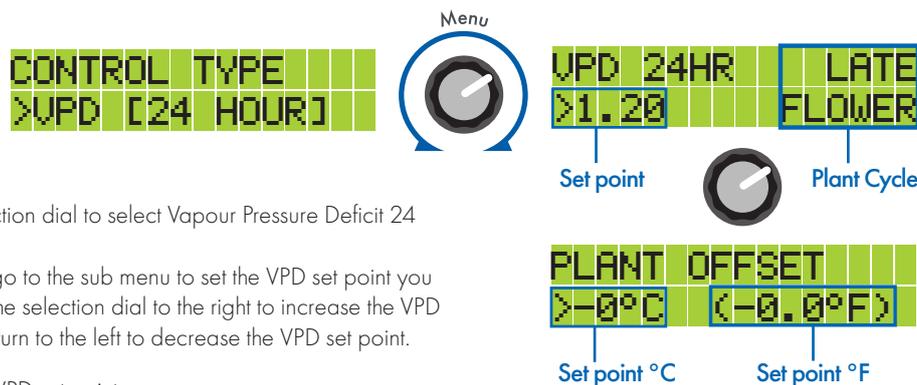
Late Flower – VPD 1.2-1.6 Kpa

When your plants have stopped vegetative growth and are maturing in the flowering stage, they have a well-established root system and leafy canopy to cope with a higher rate of transpiration. The increased water uptake is helpful at this setting range and the drier environment helps prevent pathogens.

When you have chosen a value the controller will change the humidity as the temperature changes to maintain the perfect humidity of your plants.

VPD 24 HOURS

This is an intelligent function that takes into account the air temperature, relative humidity and plant temperature to maintain the Vapour Pressure Deficit according to the plants growth stage. Set the controller at your plants growth stage and it will calculate and maintain the ideal relative humidity.



Press the selection dial to select Vapour Pressure Deficit 24 hours.

You will then go to the sub menu to set the VPD set point you require. Turn the selection dial to the right to increase the VPD set point and turn to the left to decrease the VPD set point.

Press to save VPD set point.

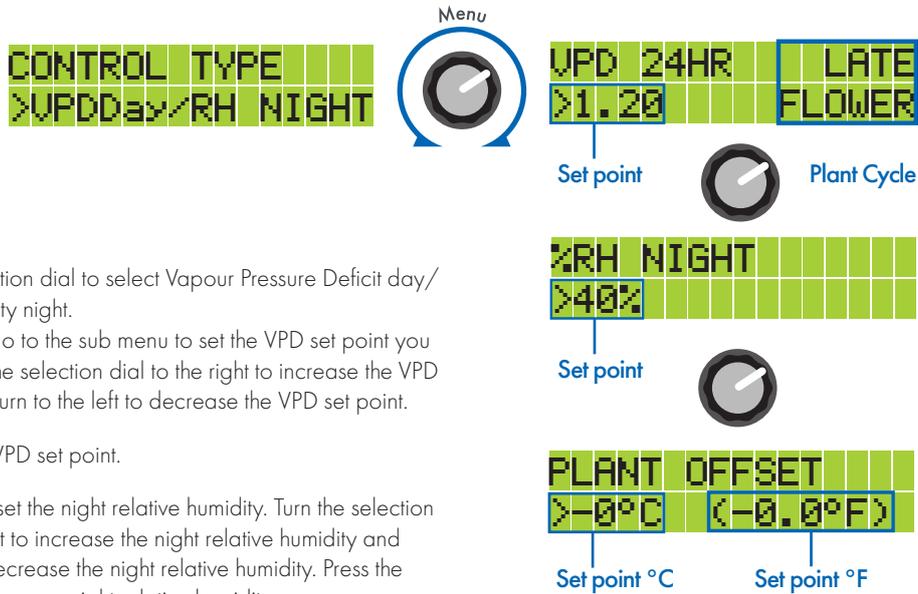
You can now set the plant offset temperature. Using an infrared thermometer measure your plants leaf temperature at the canopy and note how many degrees cooler they are compared to the air temperature. This is your plant offset value. Typically, in a good grow room environment your plants leaves in direct light will be 1-3°C cooler than the air. In a grow room running too hot or too dry, the leaf temperature will be the same temperature as the air, or warmer, and in these conditions they are in serious trouble.

Turn the selection dial to the right to increase the plant offset temperature and to the left to decrease the plant offset temperature.

Press the selection dial to save and exit the menu.

VPD DAY / RELATIVE HUMIDITY NIGHT

This control type is an intelligent function that takes into account the air temperature, relative humidity and plant temperature to maintain the Vapour Pressure Deficit according to the plants growth stage. Set the controller at your plants growth stage and it will calculate and maintain the ideal relative humidity. You can also set a static night time relative humidity.



Press the selection dial to select Vapour Pressure Deficit day/relative humidity night. You will then go to the sub menu to set the VPD set point you require. Turn the selection dial to the right to increase the VPD set point and turn to the left to decrease the VPD set point.

Press to save VPD set point.

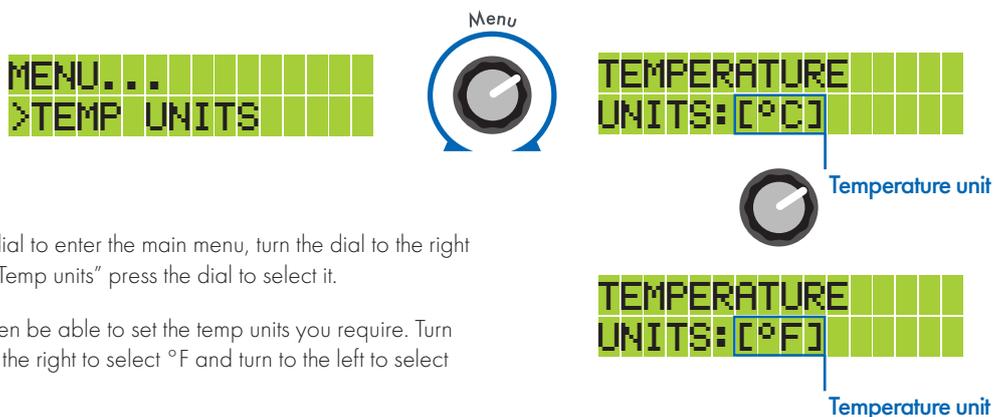
You can now set the night relative humidity. Turn the selection dial to the right to increase the night relative humidity and to the left to decrease the night relative humidity. Press the selection dial to save night relative humidity.

You can now set the plant offset temperature. Using an infrared thermometer measure your plants leaf temperature at the canopy and note how many degrees cooler they are compared to the air temperature. This is your plant offset value. Typically, in a good grow room environment your plants leaves in direct light will be 1-3°C cooler than the air. In a grow room running too hot or too dry, the leaf temperature will be the same temperature as the air, or warmer, and in these conditions they are in serious trouble.

Turn the selection dial to the right to increase the plant offset temperature and to the left to decrease the plant offset temperature. Press the selection dial to save and exit the menu.

TEMPERATURE UNITS

You can set the humidifier to work in degrees Celsius or degrees Fahrenheit.



Press the dial to enter the main menu, turn the dial to the right to select "Temp units" press the dial to select it.

You will then be able to set the temp units you require. Turn the dial to the right to select °F and turn to the left to select °C.

Press to save temperature units. You will return to the main menu.

CHANGE THE SET POINTS

Once you have selected a control type, you can change the set points at anytime using the top menu item.

The main menu is dynamic and changes depending on the control type you have selected. The top menu item is the setting for your control type.

From the home screen press the selection dial to open the menu, press the selection dial again to enter the setting for your control type.

MAIN MENU



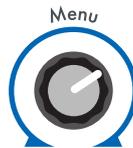
Dynamic menu control type settings

PROBE CALIBRATION

The probe monitors your grow room. It has a light sensor, thermometer and a humidity sensor.

The probe is calibrated in the factory and is accurate. However, if you have other equipment and you want the measurements to match you can change the temperature and humidity readings by calibrating the probe.

MAIN MENU



Press the selection dial to enter the main menu, turn the selection dial to the right to select "Probe calibrate" press the selection dial to select it.

You will then be able to set the temperature calibration you require. Turn the selection dial to the right to increase the temperature offset and turn to the left to decrease the temperature offset.

Press to save temperature offset.

You can now set the relative humidity offset. Turn the selection dial to the right to increase the relative humidity offset and to the left to decrease the relative humidity offset. Press the selection dial to save relative humidity offset, you will return to the home screen.



Calibration



Calibration

FACTORY RESET

The controller has a built-in memory that will store all of your settings. If you unplug the controller and plug it back in again it will resume to whichever settings you have entered.

To factory reset the unit unplug from the mains, press the selection dial and plug the unit back in. Keep the selection dial pressed until you see "Factory Reset Complete!"

VPD Chart with 2 °C plant offset

VPD Kpa	Low Transpiration / Propagation / Early Veg	0.4-0.8
	Healthy Transpiration / Late Veg / Early Flower	0.8-1.2
	High Transpiration / Late Flower	1.2-1.6
	Danger Zone	<0.4 / >1.6

Relative Humidity %RH

Temperature °C	84%	82%	80%	78%	76%	74%	72%	70%	68%	66%	64%	62%	60%	58%	56%	54%	52%	50%	48%	46%	44%	42%	40%	38%	36%	34%	32%	30%	28%	26%	24%
11°C	0.05	0.07	0.10	0.12	0.15	0.18	0.20	0.23	0.26	0.28	0.31	0.33	0.36	0.39	0.41	0.44	0.47	0.49	0.52	0.54	0.57	0.60	0.62	0.65	0.68	0.70	0.73	0.75	0.78	0.81	0.83
12°C	0.05	0.08	0.11	0.13	0.16	0.19	0.22	0.25	0.27	0.30	0.33	0.36	0.39	0.41	0.44	0.47	0.50	0.53	0.55	0.58	0.61	0.64	0.67	0.69	0.72	0.75	0.78	0.81	0.84	0.86	0.89
13°C	0.05	0.08	0.11	0.14	0.17	0.20	0.23	0.26	0.29	0.32	0.35	0.38	0.41	0.44	0.47	0.50	0.53	0.56	0.59	0.62	0.65	0.68	0.71	0.74	0.77	0.80	0.83	0.86	0.89	0.92	0.95
14°C	0.06	0.09	0.12	0.16	0.19	0.22	0.25	0.28	0.32	0.35	0.38	0.41	0.44	0.48	0.51	0.54	0.57	0.60	0.64	0.67	0.70	0.73	0.76	0.80	0.83	0.86	0.89	0.92	0.95	0.99	1.02
15°C	0.07	0.10	0.13	0.17	0.20	0.24	0.27	0.30	0.34	0.37	0.41	0.44	0.47	0.51	0.54	0.58	0.61	0.64	0.68	0.71	0.75	0.78	0.82	0.85	0.88	0.92	0.95	0.99	1.02	1.05	1.09
16°C	0.07	0.11	0.14	0.18	0.22	0.25	0.29	0.33	0.36	0.40	0.43	0.47	0.51	0.54	0.58	0.62	0.65	0.69	0.73	0.76	0.80	0.83	0.87	0.91	0.94	0.98	1.02	1.05	1.09	1.13	1.16
17°C	0.08	0.12	0.16	0.19	0.23	0.27	0.31	0.35	0.39	0.43	0.47	0.50	0.54	0.58	0.62	0.66	0.70	0.74	0.78	0.81	0.85	0.89	0.93	0.97	1.01	1.05	1.09	1.12	1.16	1.20	1.24
18°C	0.08	0.13	0.17	0.21	0.25	0.29	0.33	0.37	0.41	0.46	0.50	0.54	0.58	0.62	0.66	0.70	0.74	0.79	0.83	0.87	0.91	0.95	0.99	1.03	1.07	1.12	1.16	1.20	1.24	1.28	1.32
19°C	0.09	0.14	0.18	0.22	0.27	0.31	0.36	0.40	0.44	0.49	0.53	0.58	0.62	0.66	0.71	0.75	0.79	0.84	0.88	0.93	0.97	1.01	1.06	1.10	1.15	1.19	1.23	1.28	1.32	1.37	1.41
20°C	0.10	0.15	0.19	0.24	0.29	0.33	0.38	0.43	0.47	0.52	0.57	0.61	0.66	0.71	0.75	0.80	0.85	0.89	0.94	0.99	1.03	1.08	1.13	1.18	1.22	1.27	1.32	1.36	1.41	1.46	1.50
21°C	0.11	0.16	0.21	0.26	0.31	0.36	0.41	0.46	0.51	0.56	0.61	0.66	0.71	0.76	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60
22°C	0.12	0.17	0.22	0.28	0.33	0.38	0.43	0.49	0.54	0.59	0.65	0.70	0.75	0.80	0.86	0.91	0.96	1.02	1.07	1.12	1.17	1.23	1.28	1.33	1.39	1.44	1.49	1.54	1.60	1.65	1.70
23°C	0.13	0.18	0.24	0.30	0.35	0.41	0.46	0.52	0.58	0.63	0.69	0.74	0.80	0.86	0.91	0.97	1.03	1.08	1.14	1.19	1.25	1.31	1.36	1.42	1.48	1.53	1.59	1.64	1.70	1.76	1.81
24°C	0.14	0.20	0.26	0.32	0.38	0.44	0.50	0.56	0.61	0.67	0.73	0.79	0.85	0.91	0.97	1.03	1.09	1.15	1.21	1.27	1.33	1.39	1.45	1.51	1.57	1.63	1.69	1.75	1.81	1.87	1.93
25°C	0.15	0.21	0.28	0.34	0.40	0.47	0.53	0.59	0.66	0.72	0.78	0.85	0.91	0.97	1.04	1.10	1.16	1.23	1.29	1.35	1.42	1.48	1.54	1.61	1.67	1.73	1.80	1.86	1.92	1.99	2.05
26°C	0.16	0.23	0.29	0.36	0.43	0.50	0.56	0.63	0.70	0.77	0.83	0.90	0.97	1.03	1.10	1.17	1.24	1.30	1.37	1.44	1.50	1.57	1.64	1.71	1.77	1.84	1.91	1.97	2.04	2.11	2.18
27°C	0.17	0.24	0.32	0.39	0.46	0.53	0.60	0.67	0.74	0.81	0.89	0.96	1.03	1.10	1.17	1.24	1.31	1.38	1.46	1.53	1.60	1.67	1.74	1.81	1.88	1.95	2.03	2.10	2.17	2.24	2.31
28°C	0.19	0.26	0.34	0.41	0.49	0.56	0.64	0.72	0.79	0.87	0.94	1.02	1.09	1.17	1.24	1.32	1.40	1.47	1.55	1.62	1.70	1.77	1.85	1.92	2.00	2.08	2.15	2.23	2.30	2.38	2.45
29°C	0.20	0.28	0.36	0.44	0.52	0.60	0.68	0.76	0.84	0.92	1.00	1.08	1.16	1.24	1.32	1.40	1.48	1.56	1.64	1.72	1.80	1.88	1.96	2.04	2.12	2.20	2.28	2.36	2.44	2.52	2.60
30°C	0.22	0.30	0.39	0.47	0.56	0.64	0.72	0.81	0.89	0.98	1.06	1.15	1.23	1.32	1.40	1.49	1.57	1.66	1.74	1.83	1.91	2.00	2.08	2.17	2.25	2.34	2.42	2.51	2.59	2.68	2.76
31°C	0.23	0.32	0.41	0.50	0.59	0.68	0.77	0.86	0.95	1.04	1.13	1.22	1.31	1.40	1.49	1.58	1.67	1.76	1.85	1.94	2.03	2.12	2.21	2.30	2.39	2.48	2.57	2.66	2.75	2.84	2.93
32°C	0.25	0.34	0.44	0.53	0.63	0.72	0.82	0.91	1.01	1.10	1.20	1.29	1.39	1.48	1.58	1.67	1.77	1.87	1.96	2.06	2.15	2.25	2.34	2.44	2.53	2.63	2.72	2.82	2.91	3.01	3.10
33°C	0.27	0.37	0.47	0.57	0.67	0.77	0.87	0.97	1.07	1.17	1.27	1.37	1.47	1.57	1.68	1.78	1.88	1.98	2.08	2.18	2.28	2.38	2.48	2.58	2.68	2.78	2.88	2.98	3.08	3.18	3.28
34°C	0.29	0.39	0.50	0.61	0.71	0.82	0.92	1.03	1.14	1.24	1.35	1.46	1.56	1.67	1.78	1.88	1.99	2.09	2.20	2.31	2.41	2.52	2.63	2.73	2.84	2.95	3.05	3.16	3.26	3.37	3.48
35°C	0.31	0.42	0.53	0.64	0.76	0.87	0.98	1.09	1.21	1.32	1.43	1.54	1.66	1.77	1.88	1.99	2.11	2.22	2.33	2.44	2.56	2.67	2.78	2.89	3.01	3.12	3.23	3.34	3.46	3.57	3.68
36°C	0.33	0.45	0.57	0.68	0.80	0.92	1.04	1.16	1.28	1.40	1.52	1.64	1.75	1.87	1.99	2.11	2.23	2.35	2.47	2.59	2.70	2.82	2.94	3.06	3.18	3.30	3.42	3.54	3.65	3.77	3.89