

**FORMAX**<sup>®</sup>

HERE BEGINS YOUR ULTIMATE VALUE

**HCD** Series  
Honeycomb Dehumidifier

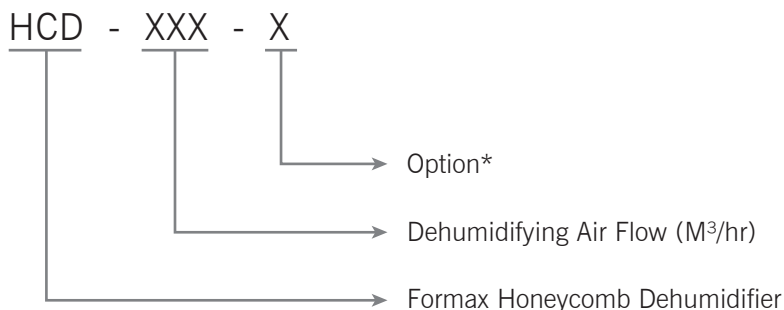
HCD-200



Please read the brochure carefully before operation.

# HCD Series Honeycomb Dehumidifier

## ■ Coding Principle



## ■ Features

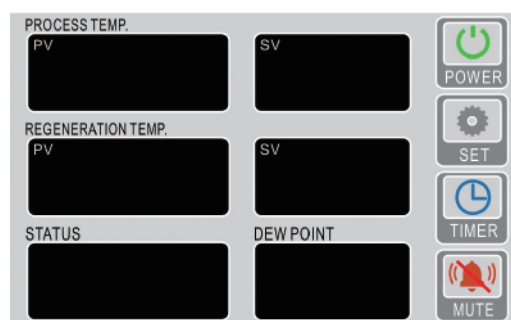
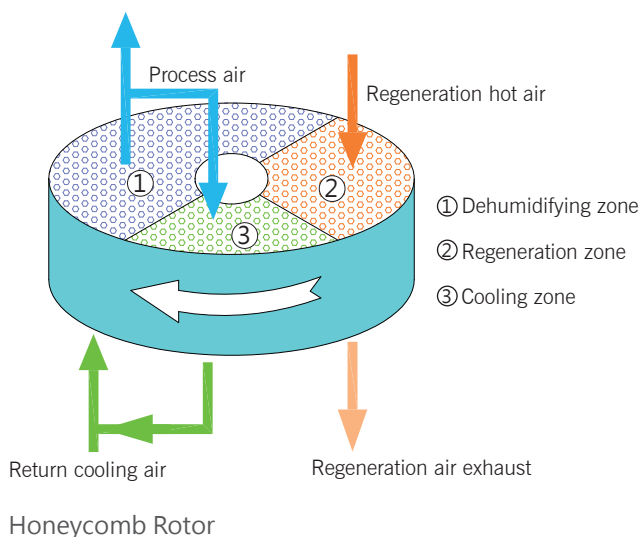
### Standard Configuration

- Microprocessor control board with LCD touch screen are easier to operate and control whole machine.
- The dehumidifying system of the HCD series features coolers to ensure a low return air temperature and low dew-point.
- Equipped with main power switch ensures safe operation and maintenance.
- Adopts the pump overload and reversal alarm function Cto ensure the life of pump.

- Inbuilt return air filter ensures no contamination to the honeycomb.
- It's better to adopt molecular sieve structure honeycomb tan silica gel adsorption one in dehumidifying.

### Options

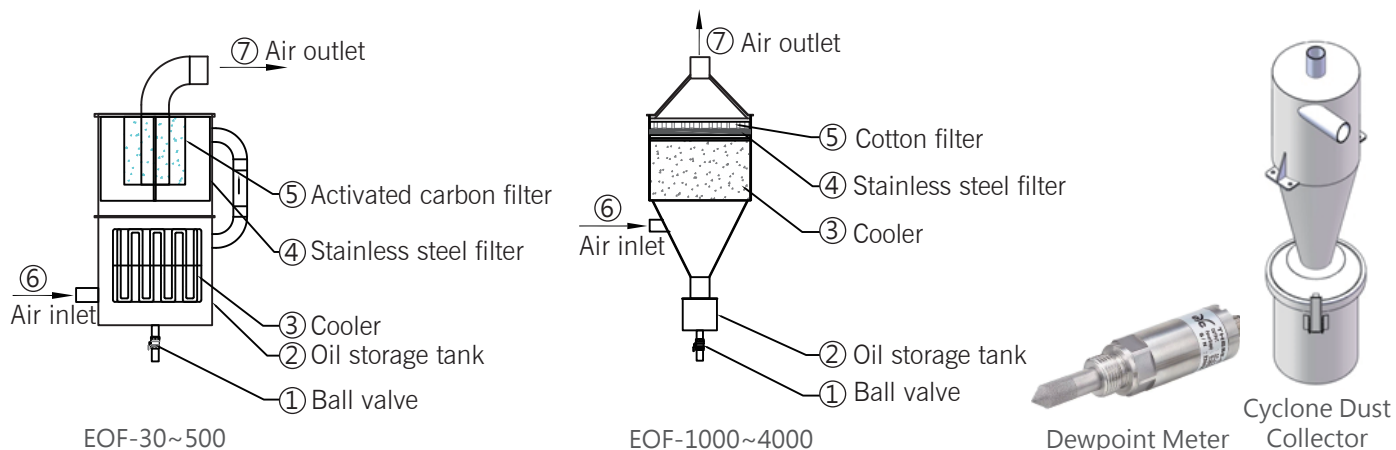
- The dewpoint meter is optional.
- Blower with High pressure and high air flow is optional for more effective dehumidifying situation.
- Processing heater is optional for using with hopper dryer.



Control Panel

## Options

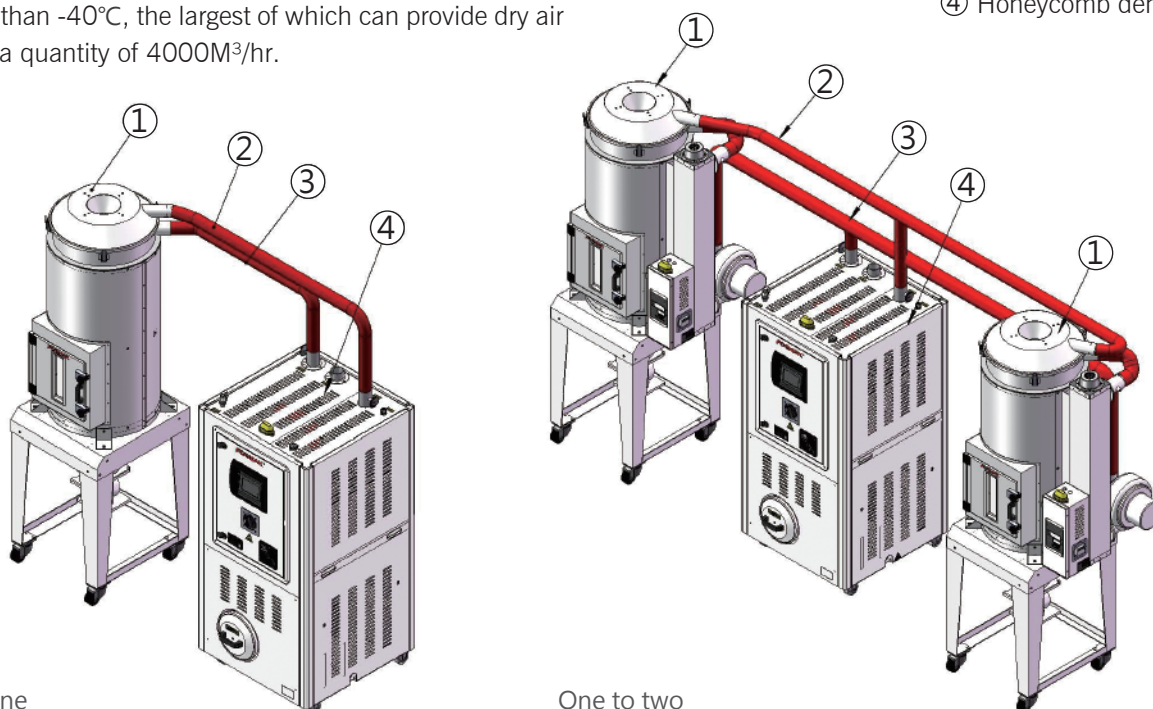
Equipped with explosion-proof as protection and it can withstand moisture erosion or contaminated by particles, most chemicals, oil, or gas. Also, it's insensitive to air flow rate characteristics. It's better to ensure the accuracy of the dewpoint.



## Application

HCD series honeycomb dehumidifiers are mainly used to dry hygroscopic engineering plastics. A honeycomb rotor is used to offer effective drying, which under ideal conditions, can supply dehumidified dry air with dew point lower than  $-40^{\circ}\text{C}$ , the largest of which can provide dry air up to a quantity of  $4000\text{M}^3/\text{hr}$ .

- ① Double insulation hopper
- ② Return pipe
- ③ Outlet pipe
- ④ Honeycomb dehumidifier



One to one

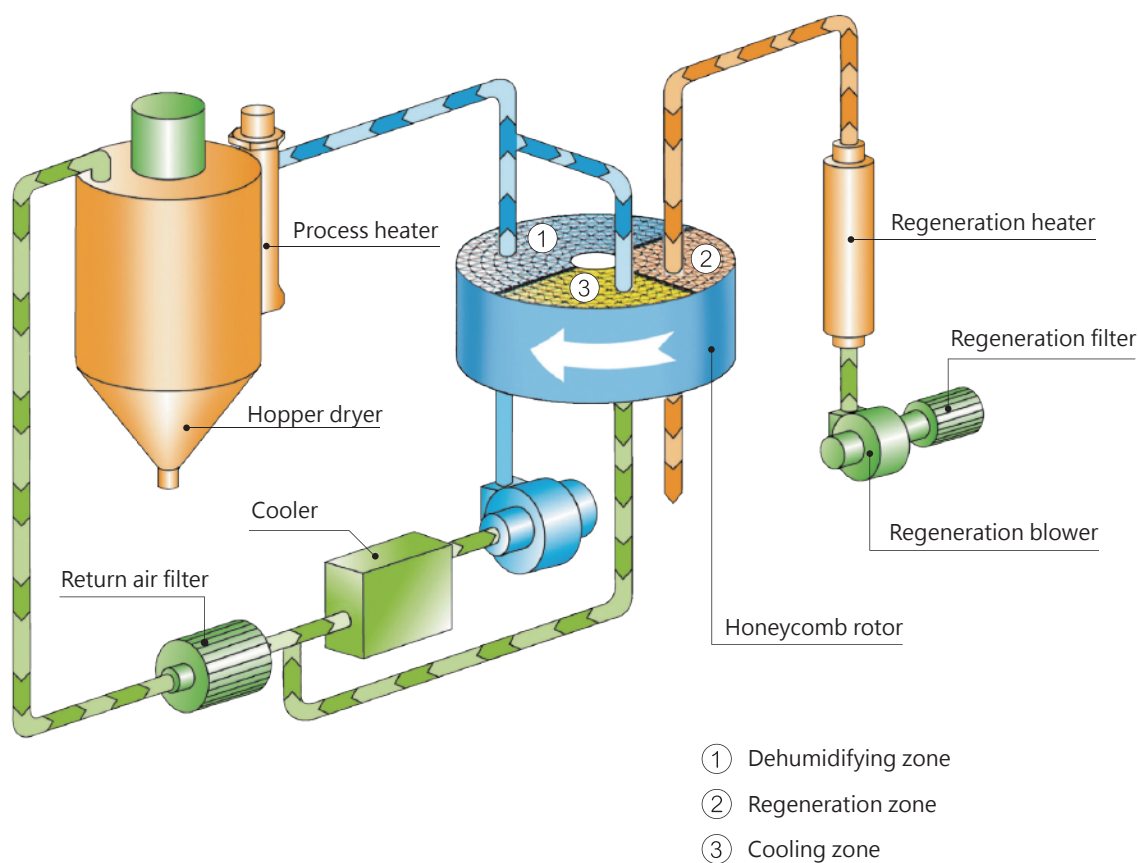
One to two

## ■ Working Principle

The main part of honeycomb rotor is made by ceramic fiber and organic additives, sintered under high temperature with molecular sieve or silica gel as basic material to bond together with inside of honeycomb to form the honeycomb like structure. Unlike common desiccant or rotary molecular sieve, then, when aging, will produce dust, followed by process air to drying hopper, to pollute plastic material. Honeycomb rotor offers unlimited long service life and can be cleaned and not like usual molec-

ular sieve which is easy to get saturated or requiring regular replacement. The moisture of return air is quickly absorbed by molecular sieves when passing through numerous holes within honeycomb rotor. So when coming out of rotor, can form low dew point dry air. Regenerating and dehumidifying have similar principle and rung simultaneously. The only difference is that the two process winds are in opposite direction.

## System Flow Chart



## ■ Drying Capacity (kg/hr)

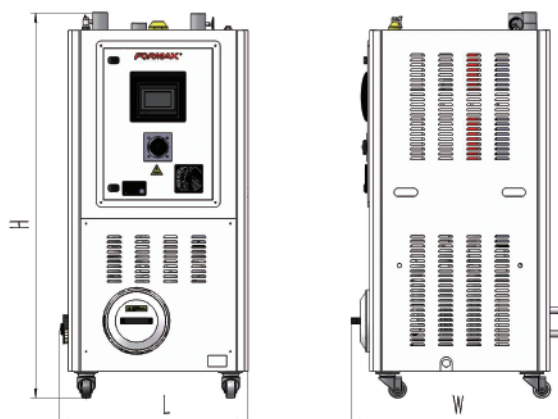
| Material     | Drying Temp. (°C) | Drying Time(hr) | Specific Heat (kcal/kg.°C) | Bulk Density (kg/L) | Moisture Content before Drying (%) | Moisture Content after Drying (%) | Drying Capacity(kg/hr) / Model: HCD- |    |     |     |     |     |     |      |      |
|--------------|-------------------|-----------------|----------------------------|---------------------|------------------------------------|-----------------------------------|--------------------------------------|----|-----|-----|-----|-----|-----|------|------|
|              |                   |                 |                            |                     |                                    |                                   | 50                                   | 80 | 120 | 200 | 300 | 400 | 600 | 800  | 1000 |
| ABS          | 80                | 2-3             | 0.34                       | 0.6                 | 0.3                                | 0.02                              | 16                                   | 27 | 35  | 105 | 165 | 210 | 305 | 405  | 425  |
| CA           | 75                | 2-3             | 0.5                        | 0.5                 | 1                                  | 0.02                              | 12                                   | 22 | 30  | 90  | 135 | 180 | 255 | 340  | 355  |
| CAB          | 75                | 2-3             | 0.5                        | 0.5                 | 0.8                                | 0.02                              | 12                                   | 22 | 30  | 90  | 135 | 180 | 255 | 340  | 355  |
| CP           | 75                | 2-3             | 0.6                        | 0.6                 | 1                                  | 0.02                              | 16                                   | 27 | 35  | 106 | 165 | 210 | 305 | 405  | 425  |
| LCP          | 150               | 4               | 0.6                        | 0.6                 | 0.04                               | 0.02                              | 11                                   | 20 | 27  | 80  | 90  | 160 | 230 | 305  | 320  |
| POM          | 100               | 2               | 0.35                       | 0.6                 | 0.2                                | 0.02                              | 24                                   | 40 | 53  | 160 | 180 | 320 | 455 | 605  | 640  |
| PMMA         | 80                | 3               | 0.35                       | 0.65                | 0.5                                | 0.02                              | 17                                   | 29 | 38  | 115 | 175 | 230 | 330 | 438  | 460  |
| LONOMER      | 90                | 3-4             | 0.55                       | 0.5                 | 0.1                                | 0.04                              | 10                                   | 17 | 22  | 66  | 120 | 133 | 190 | 252  | 265  |
| PA6/6.6/6.10 | 75                | 4-6             | 0.4                        | 0.65                | 1                                  | 0.05                              | 9                                    | 14 | 19  | 58  | 87  | 115 | 165 | 220  | 230  |
| PA11         | 75                | 4-5             | 0.58                       | 0.65                | 1                                  | 0.05                              | 10                                   | 17 | 23  | 69  | 104 | 138 | 200 | 263  | 275  |
| PA12         | 75                | 4-5             | 0.28                       | 0.65                | 1                                  | 0.05                              | 10                                   | 17 | 23  | 69  | 104 | 138 | 200 | 263  | 275  |
| PC           | 120               | 2-3             | 0.28                       | 0.7                 | 0.3                                | 0.01                              | 19                                   | 31 | 41  | 124 | 130 | 250 | 354 | 472  | 495  |
| PU           | 90                | 2-3             | 0.45                       | 0.65                | 0.3                                | 0.02                              | 17                                   | 29 | 38  | 115 | 130 | 230 | 330 | 438  | 460  |
| PBT          | 130               | 3-4             | 0.3-0.5                    | 0.7                 | 0.2                                | 0.02                              | 13                                   | 23 | 31  | 93  | 100 | 186 | 265 | 355  | 372  |
| PE           | 90                | 1               | 0.55                       | 0.6                 | 0.01                               | <0.01                             | 47                                   | 80 | 106 | 318 | 477 | 637 | 546 | 728  | 1275 |
| PEI          | 150               | 3-4             | 0.6                        | 0.6                 | 0.25                               | 0.02                              | 11                                   | 20 | 27  | 80  | 120 | 160 | 230 | 305  | 320  |
| PET          | 160               | 4-6             | 0.3-0.5                    | 0.85                | 0.2                                | 0.05                              | 11                                   | 19 | 25  | 75  | 100 | 150 | 215 | 285  | 300  |
| PETG         | 70                | 3-4             | 0.6                        | 0.6                 | 0.5                                | 0.02                              | 11                                   | 20 | 27  | 80  | 135 | 160 | 230 | 305  | 320  |
| PEN          | 170               | 5               | 0.85                       | 0.85                | 0.1                                | 0.05                              | 13                                   | 23 | 30  | 90  | 135 | 180 | 260 | 343  | 360  |
| PES          | 150               | 4               | 0.7                        | 0.7                 | 0.8                                | 0.02                              | 13                                   | 23 | 30  | 90  | 135 | 180 | 260 | 343  | 360  |
| PMMA         | 80                | 3               | 0.65                       | 0.65                | 0.5                                | 0.02                              | 17                                   | 29 | 38  | 115 | 173 | 230 | 330 | 438  | 460  |
| PPO          | 110               | 1-2             | 0.4                        | 0.5                 | 0.1                                | 0.04                              | 19                                   | 33 | 44  | 133 | 200 | 265 | 378 | 505  | 530  |
| PPS          | 150               | 3-4             | 0.6                        | 0.6                 | 0.1                                | 0.02                              | 11                                   | 20 | 27  | 80  | 120 | 160 | 230 | 305  | 320  |
| PI           | 120               | 2               | 0.27                       | 0.6                 | 0.4                                | 0.02                              | 24                                   | 40 | 53  | 160 | 240 | 320 | 455 | 605  | 640  |
| PP           | 90                | 1               | 0.46                       | 0.5                 | 0.1                                | 0.02                              | 39                                   | 66 | 88  | 265 | 400 | 530 | 760 | 1010 | 1060 |
| PS(GP)       | 80                | 1               | 0.28                       | 0.5                 | 0.1                                | 0.02                              | 39                                   | 66 | 88  | 265 | 400 | 531 | 760 | 1011 | 1062 |
| PSU          | 120               | 3-4             | 0.31                       | 0.65                | 0.3                                | 0.02                              | 12                                   | 22 | 29  | 85  | 135 | 173 | 250 | 332  | 345  |
| PVC          | 70                | 1-2             | 0.2                        | 0.5                 | 0.1                                | 0.02                              | 19                                   | 33 | 44  | 135 | 225 | 265 | 380 | 505  | 530  |
| SAN(AS)      | 80                | 1-2             | 0.32                       | 0.5                 | 0.1                                | 0.05                              | 19                                   | 33 | 44  | 135 | 180 | 265 | 380 | 505  | 530  |
| TPE          | 110               | 3               | 0.7                        | 0.1                 | 0.1                                | 0.02                              | 18                                   | 30 | 40  | 125 | 190 | 250 | 354 | 472  | 495  |

Note: 1) In an independent drying hopper.

2) Based on relative humidity 65% with ambient temperature of 20°C, moisture content after drying can be 0.01% or less.

Specifications are subject to change without prior notice.

## ■ Outline Drawings



HCD-50 ~ 1000

## ■ Specifications

| Model                     | HCD-    | 50                        | 80    | 120   | 200   | 300   | 400   | 600   | 800   | 1000  |
|---------------------------|---------|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Air Flow                  | CMH     | 50                        | 80    | 120   | 200   | 300   | 400   | 600   | 800   | 1000  |
| Dew Point                 | °C      | -40                       |       |       |       |       |       |       |       |       |
| Process Blower            | kW      | 0.55                      | 0.75  | 0.75  | 1.5   | 2.6   | 3.75  | 7.5   | 7.5*  | 11.3* |
| Process Heater (optional) | kW      | 4                         | 6     | 6     | 12    | 12    | 18    | 18    | 24    | 32    |
| Regeneration. Blower      | kW      | 0.25                      | 0.4   | 0.4   | 0.4   | 0.75  | 0.75  | 1.5   | 1.5   | 3.75  |
| Regeneration. Heater      | KW      | 2.5                       | 4     | 4     | 4     | 7.5   | 7.5   | 9     | 12    | 15    |
| Rotor Motor               | kW      | 0.015                     | 0.015 | 0.015 | 0.015 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 |
| Processing Outlet/Inlet   | inch    | 2                         |       | 2.5   |       | 3     |       | 4     |       | 5     |
| Cooling Water Flow        | Ltr/min | 5                         | 10    | 15    | 30    | 40    | 50    | 65    | 80    | 120   |
| Water Pipe                | inch    | 3/4                       |       |       | 1     |       |       |       |       |       |
| Voltage                   |         | 3Ø · 220~460VAC · 50/60Hz |       |       |       |       |       |       |       |       |
| Total Power               | kW      | 3.32                      | 5.17  | 5.17  | 5.92  | 10.88 | 12.03 | 18.03 | 21.03 | 30.08 |
| Total Power (optional)    | kW      | 7.32                      | 11.17 | 11.17 | 17.92 | 22.88 | 30.03 | 36.03 | 45.03 | 62.08 |
| Dimensions                |         |                           |       |       |       |       |       |       |       |       |
| L                         | mm      | 745                       |       | 910   |       | 1045  |       | 1400  |       | 1550  |
| W                         |         | 650                       |       | 765   |       | 900   |       | 1250  |       | 1250  |
| H                         |         | 1280                      |       | 1630  |       | 1930  |       | 2085  |       | 2085  |
| Net Weight                | kG      | 150                       | 180   | 200   | 250   | 300   | 320   | 380   | 400   | 420   |

Note: 1) Plastic materials can be fully dried by drying air with dewpoint temperature  $\leq 20^{\circ}\text{C}$ .

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2) (\*) high pressure and High air flow blower

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