



**Product selection guide**  
KUE OEM humidifier kits

**CAREL**

urhumidification



Integrated Control Solutions & Energy Savings





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# Isothermal Humidification

The isothermal humidification process involves introducing steam into the environment that is generated by boiling water.

This procedure requires an external source of energy to change the state of the water.

As the mass of the steam is much lower than the mass of the air it is absorbed into, the temperature of the air increases slightly, and for this reason it is improperly called isothermal humidification.

Steam humidifiers ensure maximum hygienic safety, as the temperature of the steam ensures the absence of any potentially harmful microorganisms.



Integrated Control Solutions & Energy Savings





## KUE OEM kits

A KUE OEM kit is the core of an immersed-electrode steam humidifier simply made up of a support system (with hoses, valves, etc.), a steam cylinder, some auxiliary components and controlled by the dedicated CPY controller and/or an external controller. No contactor, transformer, fuses are included.

### Advantages of the CAREL solution

CAREL offers its knowledge of humidification systems to manufacturers of CCUs which include humidity control in their products. The range of immersed-electrode KUE kits has been designed to be a universal, flexible and simple solution for such applications.

KUE kits are ideal for installation inside precision AHUs, thanks to their compactness and adaptability. The full range features 4 models, rated from 1.5 to 45 kg/h (3.3 to 100 lbs/hr), each capable of modulating the steam flow from 20% of the rated flow to 100%, according to the external demand. The cylinders are designed so as to enhance both energy efficiency and durability; cleanable cylinders are available as an option. For the control of the KUE kits, the CPY control boards are available.

These modulate the steam flow according to one of the following ways:

- proportionally to an external 0 to 10 V or 4 to 20 mA signal;
- ON/OFF according to an external voltage-free contact (e.g. humidistat);
- according to the demand sent through the RS485 serial port.

### What CAREL offers

- KUE kits are smaller than most competitors. A special compact unit is available when space is a real concern (max 3 kg/h / 6.6 lbs/hr, 208 or 230 Vac 1-phase).
- KUE kits are also available with metallic housings (up to 15 kg/h / 33 lbs/hr). See page 7.
- CAREL can supply the plastic support for the KUE kits with or without the cylinder.
- Both single- or multi-package boxes for KUE kits and cylinders can be ordered (more on pages 8-9).
- Standard cylinders are suitable for most types of supply water; cylinders for low and high conductivity water are also available. Cleanable cylinders can be ordered. See pages 10-11 for more information.
- CPY control boards come with the advanced CAREL software for immersed-

electrode humidifiers. These can be controlled via the network. Read more on page 6.

- Comprehensive set of accessories: steam distributors and hoses, dual-check fill valve, drain connections and hoses, PCOUMI2\* interface for controlling KUE kits from CAREL pCO controllers, amperometric transformer.



(only KUE\*R\*, KUE\*1\*, KUE\*2\*, KUE\*3\* with 24 Vac fill valve and 24 Vac drain valve or 24 Vac 60 Hz drain pump or 230 Vac 60 Hz drain pump)

**PCOUMI2\*:**

The PCOUMI2000 module is the pCO controller interface for the KUE kits: it converts the signals from the high-water-level sensor, the supply water conductivity meter and the TAM current sensor into a format compatible with the pCOB/pCO2/pCO1/pCOC controllers. It must be used along with a controller from the pCO family. More information can be found on data sheet +050003210.

**TAM 09C565A042:**

TAM is the current transformer used to measure the current that flows through the water in the cylinder. Based on the measured current, the steam flow is estimated.

**KUE\* kit:**

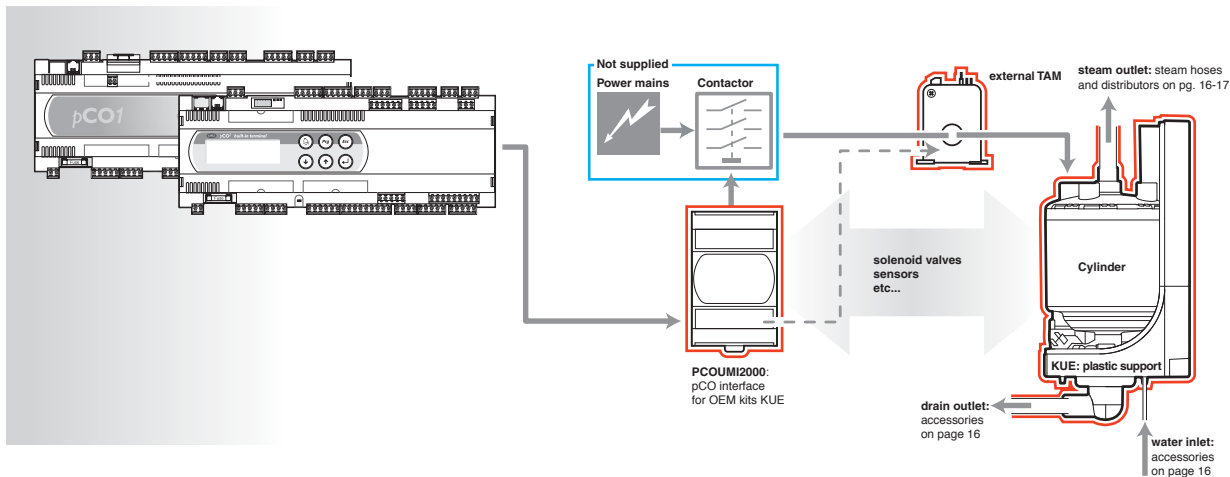
KUE is an immersed-electrode steam humidifier made up of a plastic support (with hoses, valves, etc.), a steam cylinder and some auxiliary components, and is controlled by the dedicated CPY controller and/or an external controller as shown in the images. For more information see page 6 and following.

**CPY boards:**

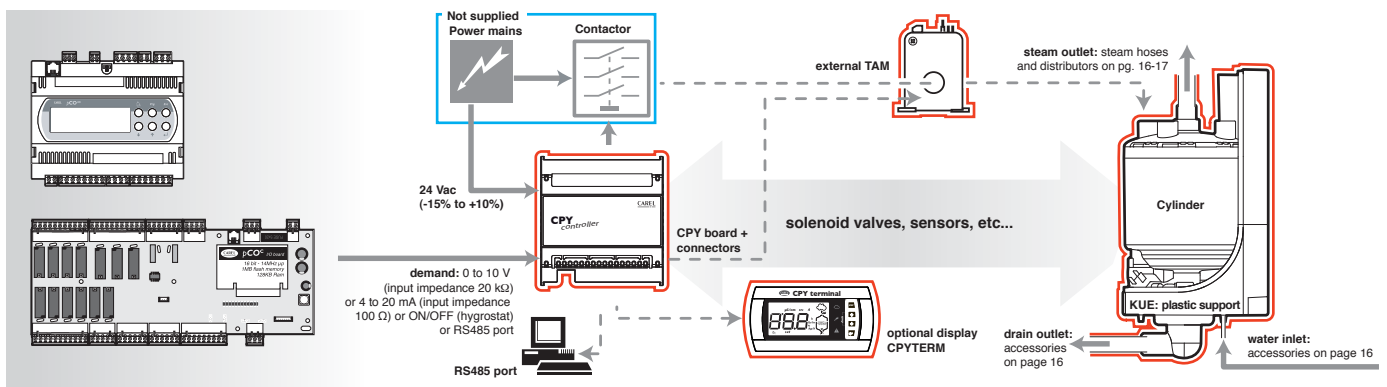
The boards are controllers designed for the KUE kits to best suit the customer's needs. The software has all the advanced features of CAREL algorithms for immersed-electrodes humidifiers. For more information, see page 6.



**Overview of KUE kit with pCO**



**Overview of KUE kit with CPY board**





## Control boards CPY

The CPY card is the latest controller for the OEM kits KUE. Only 1 model is suitable for all KUEs (read page 13 for the codes).

CPY has the following features:

- wide modulation range (20 to 100%) upon a 0 to 10 V, 2 to 10 V, 0 to 20 mA, 4 to 20 mA or ON/OFF demand the maximum production can be set by the optional terminal or via network;
- all user parameters can be modified by the optional terminal or via network (no dip switches);
- self-adaptive to the supply water quality;
- self-adaptive to the type of cylinder;
- smart dilution drains for effective energy saving behaviour;
- Anti-Foaming System (AFS) always on-board;
- quick on demand drop (drain when demand decreases more than 25%);
- full drain in case of lack of demand for a time longer than a user-definable time-out in order to avoid stagnant water in the cylinder;
- 24 Vac output to control the fill valve;
- parallel 24 Vac and relay outputs to control the drain valve/pump;
- 3 LEDs on board for basic diagnostic (24 Vac presence, steam flow rate, alarms);
- can be controlled through the RS485 serial port either by the proprietary CAREL protocol or as a Modbus® node (NO external gateway is required);
- CPY boards can be set-up for the available voltage and capacity by humiSet, the CAREL kit for configuring the controllers, by CPYTERM, their dedicated LCD terminal with keyboard, or via network;

- CPY board fits DIN rails;
- More information can be found on CPY's manual +040000030 and +040000031.

Other accessories CPY:

- external TAM for CPY: 09C565A042
- external terminal with display and keyboard: CPYTERM, which can be connected to CPY by a standard phone cable S90CONN (plug&play);
- external 3-LEDs display: UMKDP00000;
- connectors kit: CPYCONN000;
- configuration software for CP's: HUMISET000 (230 Vac single-phase).





## KUE kits with metallic housing KUE\*\*\*C0\*\*/0X\*\*/0Z\*\*/0J\*\*

KUE kits with metallic housing have been designed for users who need a humidification kit that is easy to integrate into the final product:

- the CPY controller is on-board and already partially wired and ready for the network;
- the on/off and drain switches are fitted;
- the customer has to supply:
  - 24 Vac for the controller and the fill valve/pump (\*C0\* for 50-60Hz valve, \*0X\* for 50Hz pump, \*0Z\* for 60Hz pump), 230 Vac for the drain pump (\*0J\* for 50-60 Hz);
  - power supply for the cylinder along with the power contactor.

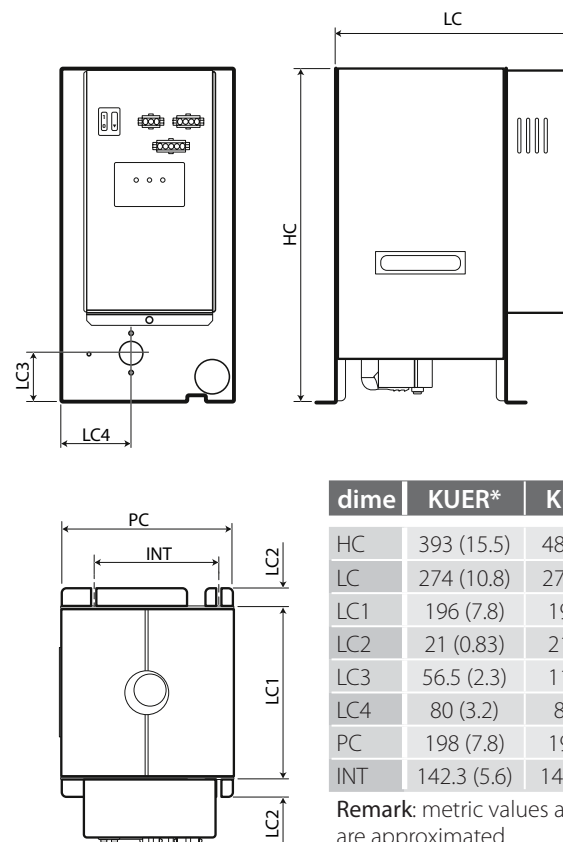
General characteristics:

- only the KUE\*R\*C0\*\*/0X\*\*/0Z\*\*/0J\*\* (max. 3 kg/h / 6.6 lbs/hr) and KUE\*1\*C0\*\*/0X\*\*/0Z\*\*/0J\*\* (max. 3 kg/h / 6.6 lbs/hr), KUE\*2\*C0\*\*/0X\*\*/0Z\*\*/0J\*\* (max. 8 kg/h / 17 lbs/hr) and KUE\*3\*C0\*\*/0X\*\*/0Z\*\*/0J\*\* (max. 15 kg/h / 33 lbs/hr) kits are available with metallic housing; the KUE\*4\* kit (max. 45 kg/h/100 lbs/hr) is not available with metallic housing;
- the metallic housing is hot galvanized;
- CPY is fixed onto a DIN rail;
- all the advanced features of the CPY boards are resident;
- Network communication is possible as CPY is ready both for CAREL proprietary protocol and Modbus®;
- CPY has 1 cumulative alarm relay rated at 250 Vac 5 A (2 A);
- 1x connector is reserved for the control of the external contactor (not supplied) and for the 24 Vac power supply to CPY;
- 1x connector is reserved for the external demand signal (0 to 10 V, 2 to 10 V, 0 to 20 mA,

- 4 to 20 mA or ON/OFF);
- 1x digital input is reserved for an external start enabling signal (a.k.a. remote ON/OFF);
- 1x optional terminal is available for displaying statuses, alarms and editing the internal parameters;
- the default drain connection is 90 deg O.D. 32 mm (1.26 in);

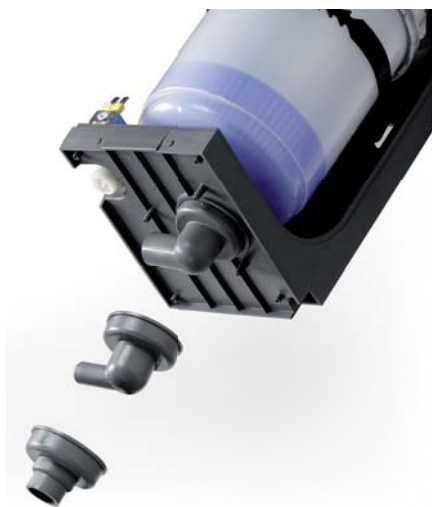
- additionally, the following drain connections are supplied as standard: straight O.D. 32 mm (1.26 in), 90 deg O.D. 23 mm (0.91 in);
- the optional drain connection straight O.D. 23 mm (0.91 in) can be ordered separately;
- single package only.

### Dimensions of the metallic housings - mm (in)



dime	KUER*	KUE*1*	KUE*2*	KUE*3*
HC	393 (15.5)	481 (18.9)	490 (19.3)	590 (23.3)
LC	274 (10.8)	274 (10.8)	303 (11.9)	350 (13.8)
LC1	196 (7.8)	196 (7.8)	221 (8.7)	273 (10.8)
LC2	21 (0.83)	21 (0.83)	21 (0.83)	21 (0.83)
LC3	56.5 (2.3)	115 (4.6)	115 (4.6)	115 (4.6)
LC4	80 (3.2)	80 (3.2)	80 (3.2)	80 (3.2)
PC	198 (7.8)	198 (7.8)	248 (9.8)	260 (10.3)
INT	142.3 (5.6)	142.3 (5.6)	192.3 (7.6)	204.2 (8.1)

**Remark:** metric values are exact; values in imperial units are approximated.



## Drain connections for KUE\*R\* to KUE\*3\*

The following drain connections are supplied as default or option depending on the type of KUE:

connections	code	KUE* no MH	KUE* + MH
90 deg O.D. 32 mm (1.26 in)	KUE with drain valve: KITRACC000 (both together)	●	●
straight O.D. 32 mm (1.26 in)	KUE with drain pump: KITRACC003 (both together)	●	●
90 deg O.D. 21 mm (0.83 in)	KUE with drain valve: 18C499A029  KUE with drain pump: KITRACC002 (O.D. 23 mm/0.91 in)	○	●
straight O.D. 21 mm (0.83 in)	KUE with drain valve: not available  KUE with drain pump: KITRACC001 (O.D. 23 mm/0.91 in)	○	○

### Legenda:

MH = metallic housing

● = included

○ = optional

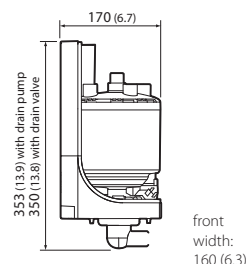
## KUE: plastic support

Each KUE is made up of:

- cylinder: at user's choice, it can be ordered separately;
- plastic support with cylinder fastening strap;
- fill and drain valve/pump;
- conductivity meter;
- hoses.

For more information, see the KUE manuals  
+030221791, +030220590.

**Remark:** metric values are exact; values in imperial units are approximated.



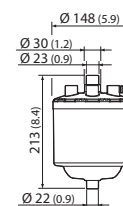
Caratteristiche	KUE*R* (compact)
<b>General</b>	
Multiple package (without metallic housing only)	36 pcs.
Protection index (CEI EN 60529) - Flame-retardant rating (UL 94)	IP00 - HB
<b>Steam flow</b>	
rated steam flow (modulation: 20 to 100%)	1.5 or 3 kg/h (3.3 or 6.6 lbs/hr)
pressure	0 to 500 Pa
<b>Supply water</b>	
inlet flow	0.6 l/min (0.16 gpm)
solenoid valve (connection on the bottom)	24 or 230 Vac 15 VA max. 50/60 Hz - 3/4" G male
temperature	1 to 40 °C (34 to 104 °F)
pressure	1 to 8 bar (14.5 to 116 PSI, 0.1 to 0.8 MPa)
<b>Water drain</b>	
flow and temperature	drain valve: 4 l/min, 100 °C (1.1 gpm, 212 °F) drain pump: 7 l/min, 100 °C (1.9 gpm, 212 °F)
device	drain valve 24 or 230 Vac 15 VA max. 50/60 Hz or drain pump 24 or 230 Vac 18 VA max. 50/60 Hz (*)
connection (bottom; except for KUET4*)	- 90 deg O.D. 21 mm (0.83 in) (supplied with KUESR*CC00) - 90 deg O.D. 23 mm (0.91 in) (supplied with KUESR*0U*/0B*)

(\*): 24 Vac drain pump : CPY can supply the pump directly; pCO drives the pump through an on-board relay.  
230 Vac drain pump: pCO and CPY can drive the pump directly by the on board relay.

## KUE: cylinders

Common characteristics:

- galvanized steel electrodes;
- high-level and foam sensor;
- internal bottom filter to stop lime scale from clogging the drain valve;
- protection caps for electrode power studs included.



Caratteristiche	BLOSR*H2
Multiple package	-
Maximum steam flow	3 kg/h (6.6 lbs/hr)
Maximum volume of water	1.7 l (0.5 gal)
Power connections	OD= 6 mm snap-on

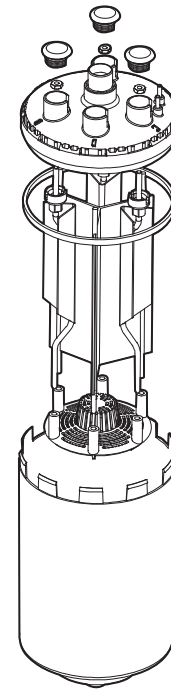
### Models (codes on pages 12, 13)

 444 (17.5) with drain pump 441 (17.4) with drain valve front width: 160 (6.3)	 465 (18.3) with drain pump 462 (18.2) with drain valve front width: 185 (7.3)	 565 (22.3) with drain pump 562 (22.2) with drain valve front width: 225 (8.9)	 630 (24.8) front width: 390 (15.4)
KUE*1*	KUE*2*	KUE*3*	KUE*4*
32 pcs.	18 pcs.	12 pcs.	-
IP00 - HB	IP00 - HB	IP00 - HB	IP00 - HB
1.5 or 3 kg/h (3.3 or 6.6 lbs/hr)	5 or 8 kg/h (11 or 17 lbs/hr)	9/10/15 kg/h (20/22/33 lbs/hr)	25/35/45 kg/h (55/77/100 lbs/hr)
0 to 500 Pa	0 to 500 Pa	KUE*S3*: 0 to 500 Pa KUE*T3*: 0 to 600 Pa	0 to 2300 Pa
0.6 l/min (0.16 gpm)	0.6 l/min (0.16 gpm)	1.2 l/min (0.32 gpm)	4.0 l/min (1.1 gpm)
24 or 230 Vac 15 VA max. 50/60 Hz - 3/4" G male			
1 to 40 °C (34 to 104 °F)			
1 to 8 bar (14.5 to 116 PSI, 0.1 to 0.8 MPa)			
drain valve: 4 l/min, 100 °C (1.1 gpm, 212 °F) drain pump: 7 l/min, 100 °C (1.9 gpm, 212 °F)			22.5 l/min, 100 °C (6 gpm, 212 °F)
drain valve 24 or 230 Vac 15 VA max. 50/60 Hz or drain pump 24 or 230 Vac 85 VA max. 50/60 Hz (*)			pump 230 Vac 75 VA 50/60 Hz (*)
- 90 deg O.D. 21 mm (0.83 in) (supplied with KUE*1*CC00) - 90 deg O.D. 23 mm (0.91 in) (supplied with KU*1*OU*/0B*)	- 90 deg O.D. 21 mm (0.83 in) (supplied with KUE*2*CC00) - 90 deg O.D. 23 mm (0.91 in) (supplied with KU*2*OU*/0B*)	- 90 deg O.D. 21 mm (0.83 in) (supplied with KUE*3*CC00) - 90 deg O.D. 23 mm (0.91 in) (supplied with KU*3*OU*/0B*)	- on left side O.D. 40 mm (1.6 in)

nd relay.

### Models (codes see tables on page 11)

 Ø 148 (5.9) Ø 30 (1.2) Ø 23 (0.9) 303 (12.0) Ø 22 (0.9)	 Ø 200 (7.9) Ø 31 (1.2) 358 (14.1) Ø 22 (0.9)	 Ø 234 (9.3) Ø 31 (1.2) 451 (17.8) Ø 22 (0.9)	 Ø 340 (13.4) Ø 40 (1.6) 526 (20.7) Ø 32 (1.3)
BLO*1*H2 BL0T1*H2	BLO*2*H2 - BLCS2*W2 BL0T2*H2 - BLCT2*W2	BLO*3*H2 - BLCS3*W2 BL0T3*H2 - BLCT3*W2	BL0T4*H2 - BLCT4*W2
BL0*1*MPH2: 48 pcs.	BL0*2*MPH2: 30 pcs.	BL0*3*MPH2: 15 pcs.	-
3 kg/h (6.6 lbs/hr)	5 kg/h (11 lbs/hr) for BL*S2* 8 kg/h (17 lbs/hr) for BL*T2*	9 kg/h (20 lbs/hr) for BL*S3* 15 kg/h (33 lbs/hr) for BL*T3*	45 kg/h (100 lbs/hr)
3.3 l (0.9 gal)	5.5 l (1.5 gal)	9.8 l (2.6 gal)	23.0 l (6.1 gal)
OD= 6 mm snap-on	OD= 6 mm snap-on	OD= 6 mm snap-on	OD= 6 mm snap-on



## The range of humiSteam cylinders

All the CAREL immersed electrode humidifiers feature sophisticated control software that automatically adapts the operating parameters to the characteristics of the water; nonetheless, the optimum balance between cylinder life, variation of steam production and speed of response depending on the type of water and the power supply can only be achieved by changing the shape and the position of the electrodes. For this reason, the CAREL immersed electrode humidifiers today feature the widest choice of cylinders, with specific electrodes for water with conductivity between  $75 \mu\text{S}/\text{cm}$  and  $1250 \mu\text{S}/\text{cm}$ , for capacities between 1.5 and 45 kg/h (3.3 and 100 lbs/hr), and for power supply voltages between 208 V and 575 V.

This extraordinary range of cylinders is the result of years of research and tens of thousands of hours of tests in the CAREL Humidification Laboratory under the widest possible range of uses. This ensures the right solution in every circumstance.

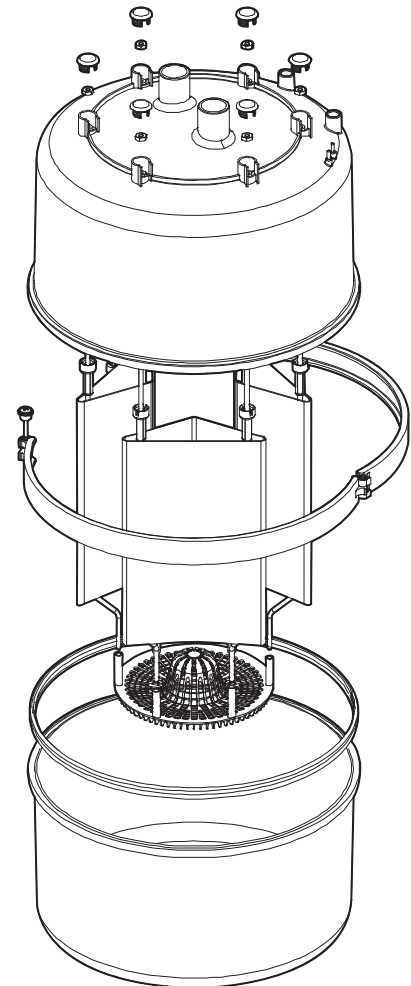
All the humiSteam cylinders feature large galvanized electrodes, positioned inside the cylinder so as to optimise duration and constant performance over the working life of the cylinder.

In addition, significant attention has been paid to operation on water with more critical characteristics, to reduce the phenomenon of arcing.

All cylinders are also fitted with filters to avoid the formation of lime scale in the base, preventing the blockage of the drain.

### Openable cylinders

The new humidifiers can be fitted with "disposable" cylinders made from flame-retardant plastic, class HB according to UL94, or alternatively openable and therefore cleanable cylinders, made from class V0 flame-retardant plastic (UL94 standard). The openable cylinders feature quick click-on closing, with a rubber gasket to ensure perfect water-tight seal between the two parts of the cylinder.



## Disposable cylinders (HB according to UL 94)

KUE three-phase 400 V (from 380 to 415 V)			
	Water conductivity		
	Low	Medium	High
kg/h (lbs/hr)	75/350 $\mu$ S/cm	350/750 $\mu$ S/cm	750/1250 $\mu$ S/cm
3 (6.6)	BL0T1A00H1/2	BL0T1C00H1/2	BL0T1D00H1/2
5, 8 (11, 17)	BL0T2B00H0/2	BL0T2C00H0/2	BL0T2D00H0/2
10, 15, 18 (22, 33, 40)	BL0T3B00H0/2	BL0T3C00H0/2	BL0T3D00H0/2
25, 35 (55, 77)	BL0T4C00H0/2	BL0T4D00H0/2	
45 (100)	BL0T4B00H0/2	BL0T4C00H0/2	

KUE single-phase 230 V (from 220 to 240 V)			
	Water conductivity		
	Low	Medium	High
kg/h (lbs/hr)	75/350 $\mu$ S/cm	350/750 $\mu$ S/cm	750/1250 $\mu$ S/cm
1, 3 (3.3, 6.6) compact	BLOSRE00H1/2	BLOSRF00H1/2	
1, 3 (3.3, 6.6)	BLOS1E00H1/2	BLOS1F00H1/2	
5 (11)	BLOS2E00H0/2	BLOS2E00H2 or BLOS2F00H0	
9 (20)	BLOS3E00H0/2	BLOS3F00H0/2	

KUE three-phase 208 and 230 V			
	Water conductivity		
	Low	Medium	High
kg/h (lbs/hr)	75/350 $\mu$ S/cm	350/750 $\mu$ S/cm	750/1250 $\mu$ S/cm
3 (6.6)	BL0T1A00H1/2	BL0T1B00H1/2	
5, 8 (11, 17)	BL0T2A00H1/2	BL0T2A00H2 or BL0T2B00H0	
10, 15 (22, 33)	BL0T3A00H1/2	BL0T3A00H2 or BL0T3B00H0	
25 (55)	BL0T4B00H0/2	BL0T4C00H0/2	
35 (77)	BL0T4B00H0/2		

KUE single-phase 208 V			
	Water conductivity		
	Low	Medium	High
kg/h (lbs/hr)	75/350 $\mu$ S/cm	350/750 $\mu$ S/cm	750/1250 $\mu$ S/cm
1, 3 (3.3, 6.6) compact	BLOSRE00H1/2	BLOSRF00H1/2	
1, 3 (3.3, 6.6)	BLOS1E00H1/2	BLOS1F00H1/2	
5 (11)	BLOS2E00H0/2	BLOS2E00H2 or BLOS2F00H0	
9 (20)	BLOS3E00H0/2	BLOS3F00H0/2	

KUE three-phase 460 V			
	Water conductivity		
	Low	Medium	High
kg/h (lbs/hr)	75/350 $\mu$ S/cm	350/750 $\mu$ S/cm	750/1250 $\mu$ S/cm
3 (6.6)	BL0T1B00H1/2	BL0T1D00H1/2	
5, 8 (11, 17)	BL0T2C00H0/2	BL0T2D00H0/2	
10, 15, 18 (22, 33, 40)	BL0T3C00H0/2	BL0T3D00H0/2	
25 (55)	BL0T4D00H0/2		
35 (77)	BL0T4C00H0/2	BL0T4D00H0/2	
45 (100)	BL0T4C00H0/2	BL0T4D00H0/2	

KUE three-phase 575 V			
	Water conductivity		
	Low	Medium	High
kg/h (lbs/hr)	75/350 $\mu$ S/cm	350/750 $\mu$ S/cm	750/1250 $\mu$ S/cm
5, 8 (11, 17)	BL0T2C00H0/2	BL0T2D00H0/2	
10, 15, 18 (22, 33, 40)	BL0T3C00H0/2	BL0T3D00H0/2	
25, 35 (55, 77)	BL0T4D00H0/2		
45 (100)	BL0T4D00H0/2		

## Openable cylinders (V0 according to UL 94) (\*)

KUE three-phase 400 V (from 380 to 415 V)			
	Water conductivity		
	Low	Medium	High
kg/h (lbs/hr)	75/350 $\mu$ S/cm	350/750 $\mu$ S/cm	750/1250 $\mu$ S/cm
5, 8 (11, 17)	BLCT2B00W0/2	BLCT2C00W0/2	BLCT2D00W0/2
10, 15, 18 (22, 33, 40)	BLCT3B00W0/2	BLCT3C00W0/2	BLCT3D00W0/2
25, 35 (55, 77)	BLCT4C00W0/2	BLCT4D00W0/2	
45 (100)	BLCT4B00W0/2	BLCT4C00W0/2	

KUE single-phase 230 V (from 220 to 240 V)			
	Water conductivity		
	Low	Medium	High
kg/h (lbs/hr)	75/350 $\mu$ S/cm	350/750 $\mu$ S/cm	750/1250 $\mu$ S/cm
5 (11)	BLCS2E00W0/2	BLCS2E00W2 or BLCS2F00W0	
9 (20)	BLCS3E00W0/2	BLCS3F00W0/2	

REMARK: cylinders BL\*0 and BL\*1 have power connections with nuts; BL\*2 have snap-on connectors.

Note: the codes in bold are factory-fitted as standard.

Important

(\*) As well as the voltages shown here, openable cylinders are available for: 208 Vac 1-phase, 230 Vac 3-phase, 460 Vac 3-phase and 575 Vac 3-phase. Contact CAREL for the codes.



# KUE kit product codes

## Without cylinder, 1-phase and 3-phase

0= with drain valve OR KUE\*4\*0  
 1= with drain pump (KUE\*R\*1, KUE\*1\*1, KUE\*2\*1, KUE\*3\*1)

R 1 2 3 4

K U E 0 \_ 0 \_ \_ 0 \_

R=1.5 or 3 kg/h compact (3.3 or 6.6 lbs/hr)  
 1=1.5 or 3 kg/h (3.3 or 6.6 lbs/hr)  
 2= 5 or 8 kg/h (11 or 17 lbs/hr)  
 3= 9 or 10 or 15 kg/h (20 or 22 or 33 lbs/hr)  
 4= 25 or 35 or 45 kg/h (55 or 77 or 100 lbs/hr)

see table on page 13

## 1-phase 208 and 230 Vac

see table on page 13

0= with drain valve OR KUE\*4\*0  
 1= with drain pump (KUE\*R\*1, KUE\*1\*1, KUE\*2\*1, KUE\*3\*1)

R 1 2 3

K U E S \_ \_ \_ \_ \_

R=1.5 or 3 kg/h compact (3.3 or 6.6 lbs/hr)  
 1=1.5 or 3 kg/h (3.3 or 6.6 lbs/hr)  
 2= 5 kg/h (11 lbs/hr)  
 3= 9 kg/h (20 lbs/hr)

supply water conductivity: \_\_\_\_\_  
 0= no cylinder (with CC option)  
 with cylinder: **bold letter from the table beside**

0= disposable cylinder BLO\*0 or BLO\*1 or none  
 C= cleanable cylinder BLC\*0 or BLC\*1  
 2= disposable cylinder BLO\*2  
 K= cleanable cylinder BLC\*2 5 and 9 kg/h (11 and 20 lbs/hr) - 230 Vac

kg/h (lbs/hr)	75/350 µS/cm	350/750 µS/cm	750/1250 µS/cm
1, 3 (3.3, 6.6) compact	BLOSRE00H1/2	BLOSRE00H1/2	BLOSRE00H1/2
1, 3 (3.3, 6.6)	BLOS1E00H1/2	BLOS1E00H1/2	BLOS1E00H1/2
5 (11)	BLOS2E00H1/2	BLOS2E00H2 or BLOS2F00H0	BLOS2E00H2 or BLOS2F00H0
9 (20)	BLOS3E00H1/2	BLOS3E00H1/2	BLOS3E00H1/2

## 3-phase 208 and 230 Vac

see table on page 13

0= with drain valve OR KUE\*4\*0  
 1= with drain pump (KUE\*R\*1, KUE\*1\*1, KUE\*2\*1, KUE\*3\*1)

1 2 3 4

K U E T \_ \_ \_ \_ \_

1= 3 kg/h (3.3 lbs/hr)  
 2= 5 or 8 kg/h (11 or 17 lbs/hr)  
 3= 10 or 15 kg/h (22 or 33 lbs/hr)  
 4= 25 or 35 kg/h (55 or 77 lbs/hr)

supply water conductivity: \_\_\_\_\_  
 0= no cylinder (with CC option)  
 with cylinder: **bold letter from the table beside**

0= disposable cylinder BLO\*0 or BLO\*1 or none  
 C= cleanable cylinder BLC\*0 or BLC\*1  
 2= disposable cylinder BLO\*2  
 K= cleanable cylinder BLC\*2

kg/h (lbs/hr)	75/350 µS/cm	350/750 µS/cm	750/1250 µS/cm
3 (6.6)	BL0T1A00H1/2	BL0T1A00H1/2	BL0T1B00H1/2
5, 8 (11, 17)	BL0T2A00H1/2	BL0T2A00H2 or BL0T2B00H0	BL0T2A00H2 or BL0T2B00H0
10, 15 (22, 33)	BL0T3A00H1/2	BL0T3A00H2 or BL0T3B00H0	BL0T3A00H2 or BL0T3B00H0
25 (55)	BL0T4B00H0/2	BL0T4B00H0/2	BL0T4C00H0/2
35 (77)	BL0T4B00H0/2	BL0T4B00H0/2	BL0T4B00H0/2

## 3-phase 400 Vac

see table on page 13

0= with drain valve OR KUE\*4\*0  
 1= with drain pump (KUE\*R\*1, KUE\*1\*1, KUE\*2\*1, KUE\*3\*1)

1 2 3 4

K U E T \_ \_ \_ \_ \_

1= 3 kg/h (6.6 lbs/hr)  
 2= 5 or 8 kg/h (11 or 17 lbs/hr)  
 3= 10 or 15 kg/h (22 or 33 lbs/hr)  
 4= 25 or 35 or 45 kg/h (55 or 77 or 100 lbs/hr)

supply water conductivity: \_\_\_\_\_  
 0= no cylinder (with CC option)  
 with cylinder: **bold letter from the table beside**

0= disposable cylinder BLO\*0 or BLO\*1 or none  
 C= cleanable cylinder BLC\*0 or BLC\*1  
 2= disposable cylinder BLO\*2  
 K= cleanable cylinder BLC\*2 from 5 to 45 kg/h (from 11 to 100 lbs/hr)

kg/h (lbs/hr)	75/350 µS/cm	350/750 µS/cm	750/1250 µS/cm
3 (6.6)	BL0T1A00H1/2	BL0T1C00H1/2	BL0T1D00H1/2
5, 8 (11, 17)	BL0T2B00H0/2	BL0T2C00H0/2	BL0T2D00H0/2
10, 15, 18 (22, 33, 40)	BL0T3B00H0/2	BL0T3C00H0/2	BL0T3D00H0/2
25, 35 (55, 77)	BL0T4C00H0/2	BL0T4D00H0/2	BL0T4D00H0/2
45 (100)	BL0T4B00H0/2	BL0T4C00H0/2	BL0T4C00H0/2

### 3-phase 460 Vac

see table on page 13

**K U E T** \_ \_ \_ \_ \_

1= 3 kg/h (6.6 lbs/hr)  
2= 5 or 8 kg/h (11 or 17 lbs/hr)  
3= 10 or 15 kg/h (22 or 33 lbs/hr)  
4= 25 or 35 or 45 kg/h (55 or 77 or 100 lbs/hr)

supply water conductivity: \_\_\_\_\_

0= no cylinder (with CC option)  
with cylinder: **bold letter from the table beside**

0= with drain valve OR KUE\*4\*0  
1= with drain pump (KUE\*R\*1, KUE\*1\*1, KUE\*2\*1, KUE\*3\*1)

0= disposable cylinder BL0\*0 or BL0\*1 or none  
C= cleanable cylinder BLC\*0 or BLC\*1  
2= disposable cylinder BL0\*2  
K= cleanable cylinder BLC\*2

kg/h (lbs/hr)	75/350 µS/cm	350/750 µS/cm	750/1250 µS/cm
3 (6.6)	BL0T1 <b>B</b> 00H1/2	BL0T1 <b>D</b> 00H1/2	
5, 8 (11, 17)	BL0T2 <b>C</b> 00H0/2	BL0T2 <b>D</b> 00H0/2	
10, 15, 18 (22, 33, 40)	BL0T3 <b>C</b> 00H0/2	BL0T3 <b>D</b> 00H0/2	
25 (55)	BL0T4 <b>D</b> 00H0/2		
35, 77	BL0T4 <b>C</b> 00H0/2	BL0T4 <b>D</b> 00H0/2	
45 (100)	BL0T4 <b>C</b> 00H0/2	BL0T4 <b>D</b> 00H0/2	

### 3-phase 575 Vac

see table on page 13

**K U E T** \_ \_ \_ \_ \_

2= 5 or 8 kg/h (11 or 17 lbs/hr)  
3= 10 or 15 kg/h (22 or 33 lbs/hr)  
4= 25 or 35 or 45 kg/h (55 or 77 or 100 lbs/hr)

supply water conductivity: \_\_\_\_\_

0= no cylinder (with CC option)  
with cylinder: **bold letter from the table beside**

0= with drain valve OR KUE\*4\*0  
1= with drain pump (KUE\*R\*1, KUE\*1\*1, KUE\*2\*1, KUE\*3\*1)

0= disposable cylinder BL0\*0 or BL0\*1 or none  
C= cleanable cylinder BLC\*0 or BLC\*1  
2= disposable cylinder BL0\*2  
K= cleanable cylinder BLC\*2

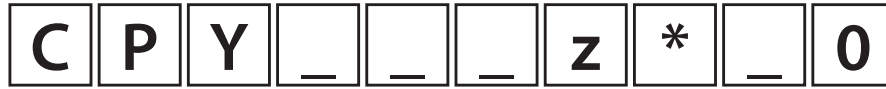
kg/h (lbs/hr)	75/350 µS/cm	350/750 µS/cm	750/1250 µS/cm
3 (6.6)	not available		
5, 8 (11, 17)	BL0T2 <b>C</b> 00H0/2	BL0T2 <b>D</b> 00H0/2	
10, 15, 18 (22, 33, 40)	BL0T3 <b>C</b> 00H0/2	BL0T3 <b>D</b> 00H0/2	
25, 35 (55, 77)	BL0T4 <b>D</b> 00H0/2		
45 (100)	BL0T4 <b>D</b> 00H0/2		

## KUE codes: digits 7 & 8

fill valve	drain	package	metallic casing	KUE*R*	KUE*1*	KUE*2*	KUE*3*	KUE*4*	
24 Vac	valve 24 Vac	single	without	00	00	00	00	N.A.	
			with	C0	C0	C0	C0	N.A.	
	pump 24 Vac	multiple	without	MP	MP	MP	MP	N.A.	
			with						
		single	without	0W (50 Hz) 0A (60 Hz)	0W (50 Hz) 0A (60 Hz)	0W (50 Hz) 0A (60 Hz)	0W (50 Hz) 0A (60 Hz)	0W (50 Hz) 0A (60 Hz)	N.A.
			with	0X (50 Hz) 0Z (60 Hz)	0X (50 Hz) 0Z (60 Hz)	0X (50 Hz) 0Z (60 Hz)	0X (50 Hz) 0Z (60 Hz)	0X (50 Hz) 0Z (60 Hz)	N.A.
multiple	without	MW (50 Hz) MA (60 Hz)	MW (50 Hz) MA (60 Hz)	MW (50 Hz) MA (60 Hz)	MW (50 Hz) MA (60 Hz)	MW (50 Hz) MA (60 Hz)	N.A.		
pump 230 Vac	single	without	0V (50/60 Hz)	0V (50/60 Hz)	0V (50/60 Hz)	0V (50/60 Hz)	0V (50/60 Hz)	00 (50/60 Hz)	
230 Vac	valve 230 Vac	single	without	20	20	20	20	N.A.	
		multiple	without	2M	2M	2M	2M	N.A.	
	pump 230 Vac	single	without	0Y (50/60 Hz)	0Y (50/60 Hz)	0Y (50/60 Hz)	0Y (50/60 Hz)	20 (50/60 Hz)	
			with	0J (50/60 Hz)	0J (50/60 Hz)	0J (50/60 Hz)	0J (50/60 Hz)	N.A.	
multiple	without	MY (50/60 Hz)	MY (50/60 Hz)	MY (50/60 Hz)	MY (50/60 Hz)	N.A.			

N.A. = Not Available

## CPY board product codes



KUE model	steam flow	power supply	version
-	00	0	0
KUE*R*	R1: 1.5 kg/h compact (3.3 lbs/hr) R3: 3 kg/h compact (6.6 lbs/hr)	U: 208 Vac 1-phase D: 230 Vac 1-phase	P: drain pump V: drain valve
KUE*1*	01: 1.5 kg/h (3.3 lbs/hr)	U: 208 Vac 1-phase D: 230 Vac 1-phase	P: drain pump V: drain valve
	03: 3 kg/h (6.6 lbs/hr)	U: 208 Vac 1-phase D: 230 Vac 1-phase W: 208 Vac 3-phase K: 230 Vac 3-phase L: 400 Vac 3-phase M: 460 Vac 3-phase	
KUE*2*	05: 5 kg/h (11 lbs/hr)	U: 208 Vac 1-phase D: 230 Vac 1-phase W: 208 Vac 3-phase K: 230 Vac 3-phase L: 400 Vac 3-phase M: 460 Vac 3-phase N: 575 Vac 3-phase	P: drain pump V: drain valve
	08: 8 kg/h (17 lbs/hr)	W: 208 Vac 3-phase K: 230 Vac 3-phase L: 400 Vac 3-phase M: 460 Vac 3-phase N: 575 Vac 3-phase	
KUE*3*	09: 9 kg/h (20 lbs/hr)	U: 208 Vac 1-phase D: 230 Vac 1-phase	P: drain pump V: drain valve
	10: 10 kg/h (22 lbs/hr) 15: 15 kg/h (33 lbs/hr)	W: 208 Vac 3-phase K: 230 Vac 3-phase L: 400 Vac 3-phase M: 460 Vac 3-phase N: 575 Vac 3-phase	
	18: 18 kg/h (39 lbs/hr)	L: 400 Vac 3-phase M: 460 Vac 3-phase N: 575 Vac 3-phase	
KUE*4*	25: 25 kg/h (55 lbs/hr) 35: 35 kg/h (77 lbs/hr)	W: 208 Vac 3-phase K: 230 Vac 3-phase L: 400 Vac 3-phase M: 460 Vac 3-phase N: 575 Vac 3-phase	P: drain pump V: drain valve
	45: 45 kg/h (100 lbs/hr)	L: 400 Vac 3-phase M: 460 Vac 3-phase N: 575 Vac 3-phase	

blank to be configured by humiSet, the CAREL kit for configuring the controllers, by CPYTERM or via network.

### Remark:

"\*" is the firmware release.

"z" = 0: with CAREL protocol active @ 19,200 Baud and frame 8, N, 2

"z" = A: with Modbus® RTU active @ 9,600 Baud and frame 8, N, 2

"z" = B: with Modbus® RTU active @ 19,200 Baud and frame 8, N, 2

## Accessories

These accessories are available for the KUE, humiSteam, compactSteam, heaterSteam and gaSteam humidifiers.

The CAREL range of accessories for isothermal humidifiers has been especially developed to allow the designer to create humidification systems that are complete and suitable for all types of application.

The fundamental idea is to guarantee the optimum operation of the humidification system by providing the installer, maintenance personnel and user all the auxiliary components that simplify installation, the distribution of steam, operation and control of the humidifier.

The accessories, described in the following paragraphs, are divided into:

- steam distribution accessories: steam hoses and distributors for ducts;
- plumbing components, for filling and draining the water.



### Steam distributors for ducts (DP\*\*\*D\*\*R\*)

The wide range of linear steam distributors for ducts in the "DP" series is made up of perforated stainless steel pipes supported by a fastening bracket in Rytan®.

This material combines excellent mechanical characteristics with extraordinary resistance to high temperatures (max. 150 °C/302 °F). The new fastening bracket allows the steam distributor to be fastened vertically to a wall, guaranteeing the correct incline of the distributor for the drainage of the condensate.

The stainless steel linear steam distributors are available in 3 different diameters (35, 45 and 60 mm), which couple respectively to the 22, 30 and 40 mm diameter steam hoses used on the entire range of CAREL humidifiers.

The linear distributors are designed to release the steam in a uniform manner along the entire length of the distributor, so as to minimise the absorption distance.

The table on the next page describes the recommended models for each type of humidifier; the quantities in brackets (double) are to be used in the event of small ducts, however require the branching of the steam hoses.



### Fittings and connectors (UEKY\*\*\*\*\*)

Two stainless steel Y fittings are available, one with a 40 mm inlet and two 30 mm outlets (UEKY000000) and one with a 40 mm inlet and two 40 mm outlets (UEKY40X400).



### AISI 316 steam connectors (KITVAP0900, KITVAP1350)

A 90 ° and 135 ° AISI316 fitting are available to avoid sharp bends to the steam hose (less than 300 mm radius), which might damage it.



### Fill hoses

FWHDCV0000: water fill kit  
 FWH3415000: hose L=1.5m  
 FWH3430000: hose L= 3m  
 9997\*ACA: straight and 90° quick connection  
 1312350APN: hose with 6 mm ID and 8 mm OD.

The FWHDCV0000 kit includes the FWH3415000 hose and a double non-return valve. The kit has been designed both to ensure conformity to standards that require the use of a double non-return valve upstream of the humidifier (WRAC), and to avoid breakages of the fill valve due to direct connection to the metal mains water pipes. The plastic fill solenoid valve may be damaged if connected directly to the metal mains water pipes: using the hoses with plastic fittings, FWH3\*\*\*000, eliminates this risk. The FWH3\*\*\*000 hoses are available in two lengths: 1.5 m and 3 m, with two ¾" female GAS fittings (one straight and one elbow). Alternatively, the 6 mm hose and the quick connectors described below can be used.

The straight or elbow connection (999572\*ACA) is screwed onto the fill solenoid valve and can be quickly fitted by tightening a nut to the 6 mm water fill hose (1312350APN).



UE     UR  
 CH     UG

### Steam nozzles (SDPOEM00\*\*)

A range of steam nozzles is also available for distributing the steam in small ducts or steam baths (SDPOEM0012 for models from 1 to 3 kg/h, SDPOEM0022 for models from 5 to 18 kg/h, SDPOEM0000).



UE     UR  
 CH     UG

### Steam hoses

1312360AXX - 1311365AXX - 1312367AXX hose for cylinders with 22/30/40 mm fitting and harmonic steel coil (outside diameter 32/41/52 mm)

The new steam distribution hoses are made from rubber resistant to 105 °C in continuous operation without the emission of odours, and suitable for use with foodstuffs. The harmonic steel coil immersed in the rubber gives the hose flexibility and strength, preventing it from being choked and blocking the flow of steam.



UE     UR  
 CH     UG

### Condensate drain hoses

1312353APG: 7 mm, 1312368AXX: 10 mm, 1312357APG: 40 mm (1 m long)

The condensate that forms inside the steam distributors must be drained using the 7 mm hose for the steam blowers, and the 10 mm hose for the "DP" linear distributors for ducts.

The water drain hose is the same for all isothermal humidifiers and is made from rubber resistant to 100 °C.

Remark: metric values are exact; values in imperial units are approximated.

## Distributors

code description	DP030D22RU	DP035D22R0	DP045D22R0	DP060D22R0	DP085D22R0	DP030D30RU	DP035D30R0	DP045D30R0	DP045D30RU	DP060D30R0	DP060D30RU	DP085D30R0	DP105D30R0	DP125D30R0	DP165D30R0	DP060D40RU	DP085D40R0	DP105D40R0	DP125D40R0	DP165D40R0	DP205D40R0
Ø inlet (C)	22 mm (0.9 in)					30 mm (1.2 in)										40 mm (1.6 in)					
size (B)	35 mm (1.4 in)					45 mm (1.8 in)										60 mm (2.4 in)					
length (A)	300	350	450	600	850	300	350	450	450	600	600	850	1050	1250	1650	600	850	1050	1250	1650	2050
KUESR*	1	1	1	1	1																
KUE*1*	1	1	1	1	1																
KUE*2* 5 kg/h						1	1	1	1	1	1										
KUE*2* 8 kg/h						1		1	1	1	1	1									
KUE*3* 9 or 10 kg/h						1			1	1	1	1	1								
KUET3* 15 kg/h											1	1	1	1	1						
KUET4* 25 kg/h											(2)	(2)	(2)	(2)	(2)	1	1	1			
KUET4* 35 kg/h													(2)	(2)	(2)	1	(2)	1	1		
KUET4* 45 kg/h																1	(2)	(2)	1	1	1

(2) use the proper UEKY\* fitting





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