

# DOORFLOW

Air Curtains



**Biddle**



# A SOLUTION FOR EVERY SITUATION

---

The latest development in a long line of market leading air curtains, the DoorFlow has been developed to be not just of minimalist design but also to minimize maintenance, bringing a continuous and consistent long lasting level of performance and maximize energy savings.

---

The Doorflow warms the cold air before it enters the building and prevents the escape of warm air through the open door. By installing the DoorFlow above the door it increases energy efficiency, prevents draught problems and proves that an open door and a comfortable indoor climate can coexist perfectly well.

## FEATURES AND BENEFITS:

- Minimalist design
- Filter free
- Long lasting performance
- Energy saving ECONTROL
- Performance enhancing patented discharge rectifier
- Choice of RAL paint colours
- Water or electric heating
- Suitable for low water temperatures
- Mounting height up to 3.0m (10')
- Four models, four widths and four styles; free hanging, recessed, cassette and tourniquet

# HOW IT WORKS

---

As with all air curtains from Biddle the DoorFlow uses Biddle's proven, patented rectifier to supply conditioned air at low speed with minimum turbulence, ensuring the air stream reaches the floor and doesn't escape to the outside. Comfort within the entrance area is therefore enhanced without any energy wastage.

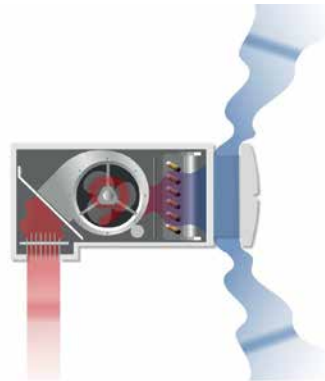
---

## APPLICATIONS

Available in a variety of paint finishes, the DoorFlow has a minimalist style, being designed to look good in all types of entrance environments – from fashionable boutiques to schools and colleges. Modular in nature, any number of units can be joined together to create one seamless air curtain covering any door width.

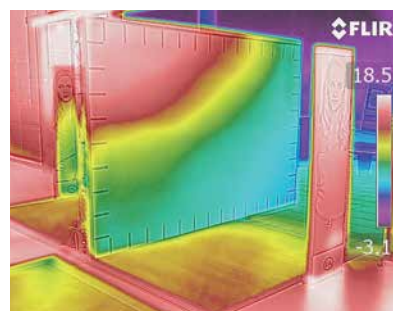
## PATENTED RECTIFIER TECHNOLOGY

So as to minimize turbulence in the discharge airstream, and ensure the air reaches the floor, Biddle have invested heavily in the development of the patented rectifier. This rectifier comprises an optimized number of blades, with a precise relationship between their length and spacing, to create a laminar airstream which reduces turbulence and energy consumption and increases throw for a given air volume.



## THERMOGRAPHIC EVIDENCE

The quality and performance of an air curtain can be shown with a thermographic camera. The heat stream, which is invisible to the naked eye, is recorded and depicted with the aid of a special measuring surface and a high resolution thermal imaging camera.



Air curtain off:  
high degree of  
air exchange



Air curtain on:  
optimal climate  
separation



## INSTALLATION AND MAINTENANCE

---

Carefully developed to minimize maintenance, a purpose designed coil/heater battery reduces the build-up of dust and debris between the coil fins to such an extent that filters are no longer necessary. Having no filters means the DoorFlow doesn't just offer minimal maintenance but also provides a continuous and consistent long lasting level of performance.

The DoorFlow air curtain is installed by means of threaded rods and is delivered as standard ready to plug in, including a built-in three-way valve. This makes the unit easy to install. Low voltage cables connect the control panel "plug and play" to the unit. It is also possible to interlink different units in this way.

Units can be specified for free-hanging, cassette or recessed installation and all are compatible with universal fixing systems, allowing longitudinal adjustment for flush fitting.

The separately supplied suspension brackets can be inserted in the recesses in the top of the unit and then fixed to a mounting rail to allow horizontal adjustment. Special brackets are available for wall mounting. A full installer kit with separate grilles is also supplied for recessed applications.

On delivery, all DoorFlow units include detailed install, control and wiring instructions and maintenance notes.

# CONTROLS

---

## ENERGY SAVING ECONTROL



The new ECONTROL will ensure air curtain performance is optimized while minimizing energy usage.

Connecting the ECONTROL to DOORFLOW couldn't be easier - just plug one end of the cable into the air curtain and the other end into the controller.

In 'Auto' mode, ECONTROL will automatically adjust the air curtain's heat output to optimize air curtain performance, control the space at these selected set point temperature (range = 18-25°C / 64.4-77°F) and minimize energy usage.

In 'Manual' mode, ECONTROL simply provides the air curtain with either half heat or full heat.

Regardless of whether the air curtain is in 'Auto' or 'Manual' mode the user can:

-  Select fan speed
-  Turn the heating off and operate the air curtain as an ambient unit



---

## EXTERNAL CONTROL CONNECTIONS

### REMOTE ENABLE VIA BMS

A volt free BMS enable contact (INHIBIT) is included on each unit as standard. If the terminal is linked the unit will run. If it is open circuit across the terminal, the unit will switch off.

### REMOTE HEATING CONTROL VIA BMS

To facilitate fan only operation (i.e. no heating) a 3.3 kΩ resistance should be wired across the INHIBIT terminal.

### FAULT OUTPUT (ELECTRICAL HEATED AIR CURTAINS ONLY)

A fault signal indicator is provided for when the electric elements overheat and the safety cut-out has operated. A healthy system provides a 24V DC signal at the terminals whereas an overheat fault provides 0V DC.

---

## WATER UNITS

The water units of the DoorFlow model are fitted as standard with built-in room temperature control with a three-way valve. The model can optionally be ordered with an external two-way valve. The standard built-in three-way valve is then removed.

## ELECTRIC UNITS

Electric units are delivered as standard with room temperature control.

## OTHER CONTROL OPTIONS

It is also possible to connect a (week) timer, door contact switch, building management system or extra relay for controlling a boiler. With these options, automatic comfort is guaranteed.

# SELECTION

## CORRECT CHOICE OF UNIT ESSENTIAL FOR PERFORMANCE

For optimal functioning of the DoorFlow, selecting the right type of unit(s) is essential. If an air curtain has been properly selected, it is able to protect the entire width and height of the door opening. The unit must have sufficient heating capacity to be able to bring incoming cold air to a comfortable temperature.

### 1. INSTALLATION HEIGHT AND WIDTH

Based on the installation height (from floor to the bottom of the unit) and the door width, it is easy to select the right air curtain (see selection table). By installing multiple units next to each other, door openings wider than 250cm (100") can be protected.

### 2. CORRECT INSTALLATION

For the air curtain to function properly, it is important that the distance between the air curtain and the door is as short as possible. Also, the air curtain must be at least as wide as the doorway to prevent cold air bypassing the unit's air stream at the sides.

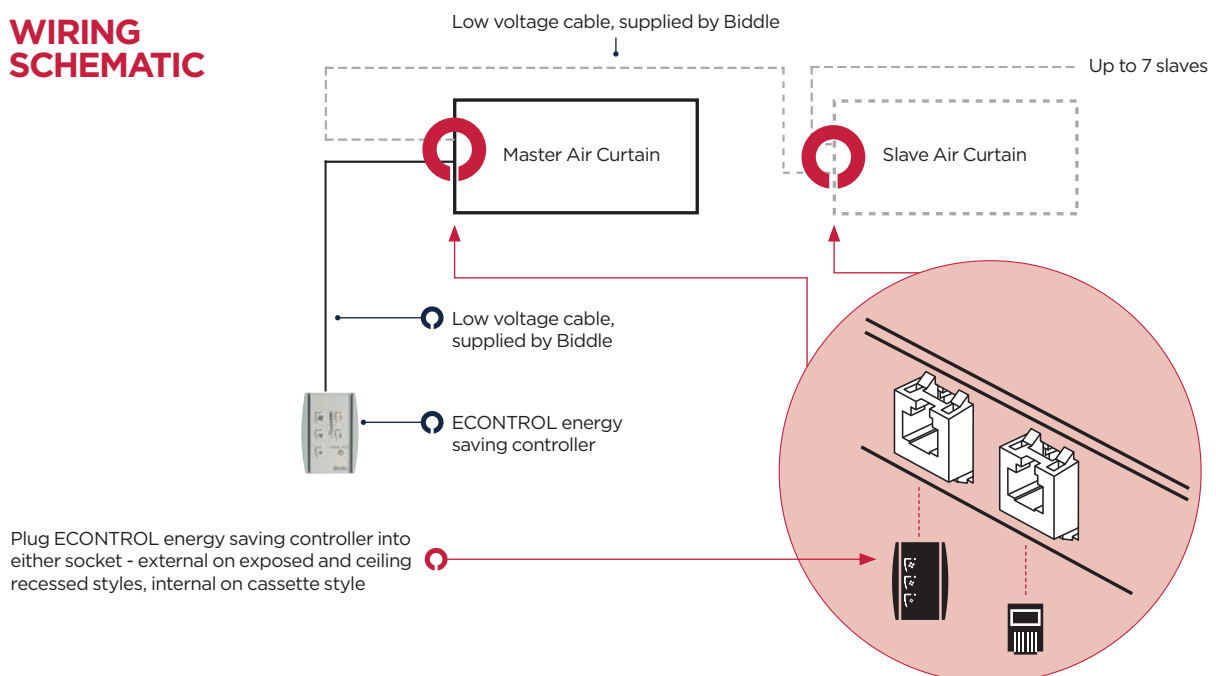
#### TYPE CODE: DF S-100-H2-F

DF	DoorFlow
Capacity	
S	Small (200 - 250 cm / 80 - 100")
M	Medium (250 - 300 cm / 100 - 120")
Length	
100 - 150 - 200 - 250 cm / 40 - 60 - 80 - 100"	
Coil type	
H2	Hot water heating, 2-row
H4	Hot water heating, 4-row
E	Electrical heating
A	Ambient
Model	
F	Free hanging model
R	Recessed model
C	Cassette model
T	Tourniquet model

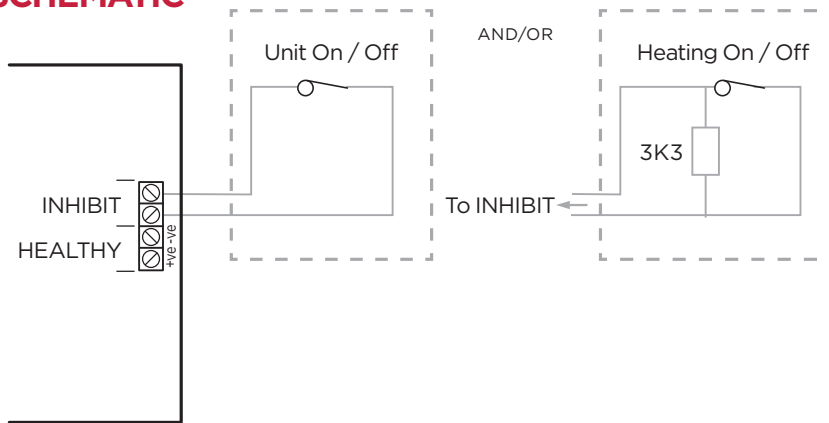
#### SELECTION TABLE

Type	Door height	Door width
S	200 - 250 cm / 80 - 100"	100 - 150 - 200 - 250 cm / 40 - 60 - 80 - 100"
M	250 - 300 cm / 100 - 120"	100 - 150 - 200 - 250 cm / 40 - 60 - 80 - 100"

## WIRING SCHEMATIC

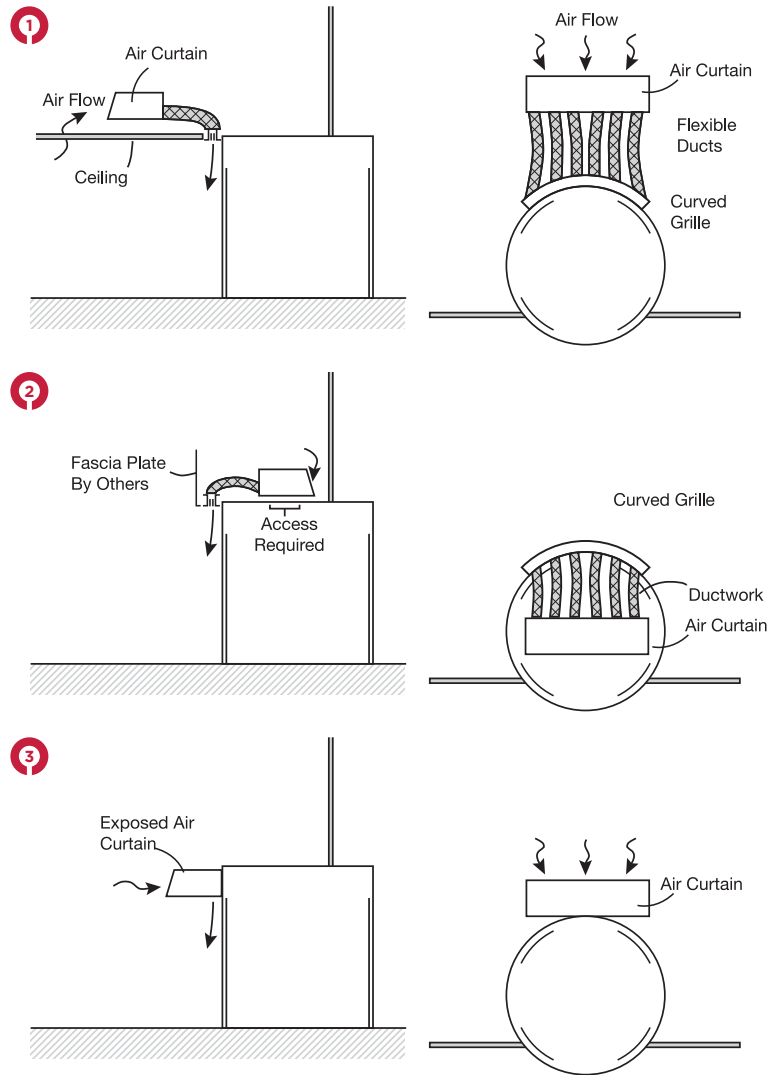
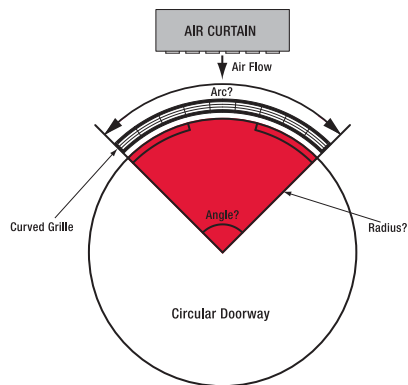


## CONTROLS SCHEMATIC



## CIRCULAR DOORWAYS

When an air curtain is to be used in conjunction with revolving doors or any other form of circular doorway we are able to use a variant of the recessed model installed either adjacent to or directly above the door. Given certain key dimensions we manufacture a bespoke discharge grille to fit perfectly with the curvature of the door, and ensure optimum climate separation around the circular doorway.





# SPECIFICATIONS

---

## CONTROL & OPERATION

By adjusting heat output and fan speed the ECONTROL ensures air curtain performance is optimized while minimising energy usage. It is connected to the unit by a low voltage data cable with a RJ4/4 plug on both ends. Multiple units are also connected in this way. Cables are available in a variety of lengths.

## ELECTRICAL CONNECTIONS

LPHW units are connected to the mains supply by a 2 metre cable. The 3-phase mains supply cable used with electric heated units enters the air curtain via a cable gland on top of the unit and is then connected to a terminal strip within the unit. The water connections and the socket for the RJ4/4 plug are located on top of the unit.

## CASING

The casing is made from zinc plated sheet steel and incorporates an inspection panel. Both the discharge grille, incorporating the patented rectifier, and the inlet grille are made of anodized aluminium. As standard, the exposed ceiling recessed and cassette units are painted white (RAL9016) and the grille on the tourniquet unit is painted white (RAL9010). Alternative colours can be supplied if requested.

## MOTOR/FAN ASSEMBLY

The air curtain is fitted with two or more (depending on size) dual-inlet vibration-free centrifugal fans. Each fan is driven by a suspended rotor motor. The fan casing and impeller are made from either zinc coated steel or plastic, depending on the model. The motors are manufactured according to EN60-335-1, protection class IP44 and insulation class F. They are fitted as standard with thermal contacts which break the circuit if the maximum allowable motor temperature is exceeded.

## HEATER BATTERY

The LPHW coil comprises 3/8" copper pipes and aluminium fins. The water supply connections for the exposed, ceiling recessed and cassette units are 1" BSP female thread and for the tourniquet cassette unit 3/4" BSP female thread. The test pressure is 9 bars and the maximum operating pressure is 8 bars at 175°C (347°F). The electric heating coil is made of U-tube-shaped stainless rods.

## STANDARD DELIVERY

Rectifier technology  
Discharge duct (model R)  
Built-in water side control: three-way valve and actuator (water units)  
Room temperature control  
Power cable, 230 Volts, length 2m (6.5') (excl. electric units)

## OPTIONAL

Two-way control valve (delivered separately)  
Door contact switch  
Wall brackets  
Relay for controlling boiler



# DOORFLOW

Technical Details



# TECHNICAL EXPLANATION

The heating capacities of water units with the two row heating coil are based on a water range of 80/60°C (176/140°F) with an air inlet temperature of 20°C (68°F), and with the four row heating coil on a water range of 60/40°C (140/104°F) with an air inlet temperature of 20°C (68°F). With different water and air inlet temperatures, the heating capacity should be multiplied by the factors in the table below.

H2	Air inlet temperature			
	15°C (59°F)	18°C (65°F)	20°C (68°F)	22°C (72°F)
90/70°C (194/158°F)	1.35	1.28	1.23	1.19
82/71°C (180/160°F)	1.32	1.24	1.2	1.15
80/60°C (176/140°F)	1.12	1.05	(1)	0.95
H4				
70/50°C (158/122°F)	1.58	1.46	1.38	1.31
60/40°C (140/104°F)	1.2	1.08	(1)	0.92
50/40°C (122/104°F)	1.05	0.94	0.86	0.79
50/30°C (122/86°F)	0.8	0.68	0.6	0.52

## WATER VOLUME

With water and room temperatures other than the values represented in the tables, the water volume can be roughly calculated using the formula below. The heating capacity should first be recalculated based on the table above.

- $m_w$  = water flow rate [l/h]
- $Q$  = capacity [kW]
- $C_{pw}$  = specific heat of water (=4.18) [kJ/kg°C]
- $\Delta T_w$  = temperature difference water [°C]
- $\rho_w$  = density of water at 90°C (=0.984) [kg/l]

$$m_w = \frac{Q}{C_{pw} \Delta T_w \rho_w} 3600 [l/h]$$

## WATER PRESSURE LOSS

With water temperatures other than 80/60°C (176/140°F) (two row heating coil) or 60/40°C (140/104°F) (four row heating coil), the water pressure loss can roughly be calculated using the formula below. To do so, the water volume must first be calculated (see left).

- $\Delta P_{w1}$  = water pressure loss, table values [kPa]
- $\Delta P_{w2}$  = water pressure loss [kPa]
- $m_{w1}$  = water pressure loss [l/h]
- $m_{w2}$  = water volume formula [l/h]

$$\Delta P_{w2} = \Delta P_{w1} \left( \frac{m_{w2}}{m_{w1}} \right)^2 [kPa]$$

# TECHNICAL EXPLANATION

## SOUND

The sound data is based on the direct field, in a situation with an open door and a sound absorbing ceiling.

The sound data for different situations can be determined by adding the adjacent values to the table values.

Closed door	+ 1 - 2 dB(A)
Acoustical "hard" ceiling	+ 2 - 3 dB(A)

Deviating distances and several units next to each other can be calculated with the table below. Data from the 1m (3') unit, measured at a distance of 3m (9'), is the basic assumption. The factors apply to all types of air curtains.

## CORRECTION FACTORS FOR SOUND PRESSURE IN dB(A)

Distance (m)	Total unit length (m)					
	1	1.5	2	2.5	3	3.5
1	+9.5	+11.3	+12.6	+13.5	+14.3	+15.0
2	+3.5	+5.3	+6.5	+7.5	+8.3	+9.0
3	0	+1.8	+3.0	+4.0	+4.8	+5.4
4	-2.5	-0.7	+0.5	+1.5	+2.3	+2.9
5	-4.4	-2.7	-1.4	-0.5	+0.3	+1.0

# FREE-HANGING MODEL

## DF S-100-F

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	69	73	78	65
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	27	22	16	-
Max. Water flow rate <sup>2</sup>	USGPH	93	75	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.03	0.04	-	-
Max. Power, motors	HP	0.35	0.35	0.35	0.35
Max. Power cons. heating	kW	-	-	5.0	-
Max. Current, motors (1 ph)	A	1.14	1.14	1.14	1.14
Max. Current consumption	A	1.14	1.14	22.9	1.14
Max. Air displacement	cfm	845	845	845	845
Max. Air outlet temperature	°F	109	100	107	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	42	42	42	42

### BASIC DATA

Max Door Width	40"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	32	33	36	30
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	8	6.5	4.7	-
Max. Water flow rate <sup>2</sup>	l/h	353	283	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.2	0.25	-	-
Max. Power, motors	kW	0.26	0.26	0.26	0.26
Max. Power cons. heating	kW	-	-	5.0	-
Max. Current, motors (1 ph)	A	1.14	1.14	1.14	1.14
Max. Current consumption	A	1.14	1.14	22.9	1.14
Max. Air displacement	m <sup>3</sup> /h	1435	1435	1435	1435
Max. Air outlet temperature	°C	43	38	42	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	42	42	42	42

### BASIC DATA

Max Door Width	1.0 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# FREE-HANGING MODEL

## DF S-150-F

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	102	108	118	100
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	45	38	32	-
Max. Water flow rate <sup>2</sup>	USGPH	155	126	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.1	0.13	-	-
Max. Power, motors	HP	0.53	0.53	0.53	0.53
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	45.2	1.71
Max. Air displacement	cfm	1286	1286	1286	1286
Max. Air outlet temperature	°F	113	103	120	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	43	43	43	43

### BASIC DATA

Max Door Width	60"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	47	49	54	46
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	13.3	11	9.5	-
Max. Water flow rate <sup>2</sup>	l/h	587	477	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.69	0.91	-	-
Max. Power, motors	kW	0.39	0.39	0.39	0.39
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	45.2	1.71
Max. Air displacement	m <sup>3</sup> /h	2185	2185	2185	2185
Max. Air outlet temperature	°C	45	40	49	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	43	43	43	43

### BASIC DATA

Max Door Width	1.5 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

<sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).

<sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).

<sup>3</sup> with strength level 2 of 3.

# FREE-HANGING MODEL

## DF S-200-F

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	132	141	153	129
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	63	53	32	-
Max. Water flow rate <sup>2</sup>	USGPH	216	177	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.23	0.31	-	-
Max. Power, motors	HP	0.7	0.7	0.7	0.7
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	45.8	2.28
Max. Air displacement	cfm	1718	1718	1718	1718
Max. Air outlet temperature	°F	114	105	107	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	45	45	45	45

### BASIC DATA

Max Door Width	80"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	60	64	70	59
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	18.6	15.4	9.5	-
Max. Water flow rate <sup>2</sup>	l/h	819	670	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	1.57	2.14	-	-
Max. Power, motors	kW	0.52	0.52	0.52	0.52
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	45.8	2.28
Max. Air displacement	m <sup>3</sup> /h	2919	2919	2919	2919
Max. Air outlet temperature	°C	46	40	41	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	45	45		45

### BASIC DATA

Max Door Width	2.0 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# FREE-HANGING MODEL

## DF S-250-F

IMPERIAL		WATER		AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>	
Weight	lb	168	179	162
Electrical supply/phase	V/ph	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	82	69	-
Max. Water flow rate <sup>2</sup>	USGPH	281	230	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.44	0.61	-
Max. Power, motors	HP	0.88	0.88	0.88
Max. Power cons. heating	kW	-	-	-
Max. Current, motors (1 ph)	A	2.85	2.85	2.85
Max. Current consumption	A	2.85	2.85	2.85
Max. Air displacement	cfm	2188	2188	2188
Max. Air outlet temperature	°F	115	106	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	46	46	46

### BASIC DATA

Max Door Width	100"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	------	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>	
Weight	kg	77	81	74
Electrical supply/phase	V/ph	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	24.1	20.1	-
Max. Water flow rate <sup>2</sup>	l/h	1063	872	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	3	4.2	-
Max. Power, motors	kW	0.66	0.66	0.66
Max. Power cons. heating	kW	-	-	-
Max. Current, motors (1 ph)	A	2.85	2.85	2.85
Max. Current consumption	A	2.85	2.85	2.85
Max. Air displacement	m <sup>3</sup> /h	3718	3718	3718
Max. Air outlet temperature	°C	46	41	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	46	46	46

### BASIC DATA

Max Door Width	2.5 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

<sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).

<sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).

<sup>3</sup> with strength level 2 of 3.



# FREE-HANGING MODEL

## DF M-100-F

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	78	82	87	74
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	29	24	27	-
Max. Water flow rate <sup>2</sup>	USGPH	100	81	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.03	0.04	-	-
Max. Power, motors	HP	0.53	0.53	0.53	0.53
Max. Power cons. heating	kW	-	-	8.2	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	24.4	1.71
Max. Air displacement	cfm	958	958	958	958
Max. Air outlet temperature	°F	105	97	118	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	47	47	46	47

### BASIC DATA

Max Door Width	40"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	36	37	40	34
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	8.6	7	7.8	-
Max. Water flow rate <sup>2</sup>	l/h	379	305	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.23	0.29	-	-
Max. Power, motors	kW	0.39	0.39	0.39	0.39
Max. Power cons. heating	kW	-	-	8.2	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	24.4	1.71
Max. Air displacement	m <sup>3</sup> /h	1627	1627	1595	1627
Max. Air outlet temperature	°C	40	36	48	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	47	47	47	47

### BASIC DATA

Max Door Width	1.0 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# FREE-HANGING MODEL

## DF M-150-F

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	112	118	127	109
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	50	41	40	-
Max. Water flow rate <sup>2</sup>	USGPH	170	139	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.12	0.16	-	-
Max. Power, motors	HP	0.7	0.7	0.7	0.7
Max. Power cons. heating	kW	-	-	12.3	-
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	36.3	2.28
Max. Air displacement	cfm	1503	1503	1426	1503
Max. Air outlet temperature	°F	109	101	124	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	47	47	45	47

### BASIC DATA

Max Door Width	60"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	51	54	58	50
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	14.6	12.1	11.7	-
Max. Water flow rate <sup>2</sup>	l/h	642	525	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.81	1.08	-	-
Max. Power, motors	kW	0.52	0.52	0.52	0.52
Max. Power cons. heating	kW	-	-	12.3	-
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	36.3	2.28
Max. Air displacement	m <sup>3</sup> /h	2554	2554	2422	2554
Max. Air outlet temperature	°C	43	38	51	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	47	47	45	47

### BASIC DATA

Max Door Width	1.5 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

<sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).

<sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).

<sup>3</sup> with strength level 2 of 3.

# FREE-HANGING MODEL

## DF M-200-F

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	150	159	171	147
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	68	56	53	-
Max. Water flow rate <sup>2</sup>	USGPH	230	189	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.26	0.35	-	-
Max. Power, motors	HP	1.05	1.05	1.05	1.05
Max. Power cons. heating	kW	-	-	16.4	-
Max. Current, motors (1 ph)	A	3.42	3.42	3.42	3.42
Max. Current consumption	A	3.42	3.42	48.8	3.42
Max. Air displacement	cfm	1915	1915	1878	1915
Max. Air outlet temperature	°F	110	102	118	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	50	50	49	50

### BASIC DATA

Max Door Width	80"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	68	72	78	67
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	19.8	16.5	15.5	-
Max. Water flow rate <sup>2</sup>	l/h	872	717	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	1.76	2.42	-	-
Max. Power, motors	kW	0.79	0.79	0.79	0.79
Max. Power cons. heating	kW	-	-	16.4	-
Max. Current, motors (1 ph)	A	3.42	3.42	3.42	3.42
Max. Current consumption	A	3.42	3.42	48.8	3.42
Max. Air displacement	m <sup>3</sup> /h	3254	3254	3190	3254
Max. Air outlet temperature	°C	43	39	48	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	50	50	49	50

### BASIC DATA

Max Door Width	2.0 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# FREE-HANGING MODEL

## DF M-250-F

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	186	197	213	180
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	91	77	53	-
Max. Water flow rate <sup>2</sup>	USGPH	312	259	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.53	0.75	-	-
Max. Power, motors	HP	1.23	1.23	1.23	1.23
Max. Power cons. heating	kW	-	-	16.4	-
Max. Current, motors (1 ph)	A	3.99	3.99	3.99	3.99
Max. Current consumption	A	3.99	3.99	49.4	3.99
Max. Air displacement	cfm	2631	2631	2495	2631
Max. Air outlet temperature	°F	111	103	111	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	51	51	49	51

### BASIC DATA

Max Door Width	100"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	------	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	85	90	97	82
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	26.8	22.6	15.5	-
Max. Water flow rate <sup>2</sup>	l/h	1181	979	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	3.65	5.18	-	-
Max. Power, motors	kW	0.92	0.92	0.92	0.92
Max. Power cons. heating	kW	-	-	16.4	-
Max. Current, motors (1 ph)	A	3.99	3.99	3.99	3.99
Max. Current consumption	A	3.99	3.99	49.4	3.99
Max. Air displacement	m <sup>3</sup> /h	4470	4470	4239	4470
Max. Air outlet temperature	°C	44	39	44	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	51	51	49	51

### BASIC DATA

Max Door Width	2.5 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

<sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).

<sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).

<sup>3</sup> with strength level 2 of 3.

# CASSETTE MODEL

## DF S-100-C

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	76	80	82	69
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	27	22	16	-
Max. Water flow rate <sup>2</sup>	USGPH	93	75	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.03	0.04	-	-
Max. Power, motors	HP	0.35	0.35	0.35	0.35
Max. Power cons. heating	kW	-	-	5.0	-
Max. Current, motors (1 ph)	A	1.14	1.14	1.14	1.14
Max. Current consumption	A	1.14	1.14	22.9	1.14
Max. Air displacement	cfm	845	845	845	845
Max. Air outlet temperature	°F	109	100	107	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	42	42	42	42

### BASIC DATA

Max Door Width	40"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	35	36	37	31
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	8	6.5	4.7	-
Max. Water flow rate <sup>2</sup>	l/h	353	283	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.2	0.25	-	-
Max. Power, motors	kW	0.26	0.26	0.26	0.26
Max. Power cons. heating	kW	-	-	5.0	-
Max. Current, motors (1 ph)	A	1.14	1.14	1.14	1.14
Max. Current consumption	A	1.14	1.14	22.9	1.14
Max. Air displacement	m <sup>3</sup> /h	1435	1435	1435	1435
Max. Air outlet temperature	°C	43	38	42	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	42	42	42	42

### BASIC DATA

Max Door Width	1.0 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# CASSETTE MODEL

## DF S-150-C

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	113	119	124	106
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	45	38	32	-
Max. Water flow rate <sup>2</sup>	USGPH	155	126	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.1	0.13		-
Max. Power, motors	HP	0.53	0.53	0.53	0.53
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	45.2	1.71
Max. Air displacement	cfm	1286	1286	1286	1286
Max. Air outlet temperature	°F	113	103	120	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	43	43	43	43

### BASIC DATA

Max Door Width	60"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	52	54	56	48
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	13.3	11	9.5	-
Max. Water flow rate <sup>2</sup>	l/h	587	477	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.69	0.91	-	-
Max. Power, motors	kW	0.39	0.39	0.39	0.39
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	45.2	1.71
Max. Air displacement	m <sup>3</sup> /h	2185	2185	2185	2185
Max. Air outlet temperature	°C	45	40	49	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	43	43	43	43

### BASIC DATA

Max Door Width	1.5 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

<sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).

<sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).

<sup>3</sup> with strength level 2 of 3.

# CASSETTE MODEL

## DF S-200-C

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	145	154	161	136
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	63	53	32	-
Max. Water flow rate <sup>2</sup>	USGPH	216	177	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.23	0.31	-	-
Max. Power, motors	HP	0.7	0.7	0.7	0.7
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	45.8	2.28
Max. Air displacement	cfm	1718	1718	1718	1718
Max. Air outlet temperature	°F	114	105	107	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	45	45	45	45

### BASIC DATA

Max Door Width	80"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	66	70	73	62
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	18.6	15.4	9.5	-
Max. Water flow rate <sup>2</sup>	l/h	819	670	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	1.57	2.14	-	-
Max. Power, motors	kW	0.52	0.52	0.52	0.52
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	45.8	2.28
Max. Air displacement	m <sup>3</sup> /h	2919	2919	2919	2919
Max. Air outlet temperature	°C	46	40	41	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	45	45		45

### BASIC DATA

Max Door Width	2.0 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.



# CASSETTE MODEL

## DF S-250-C

IMPERIAL		WATER		AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>	
Weight	lb	185	196	171
Electrical supply/phase	V/ph	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	82	69	-
Max. Water flow rate <sup>2</sup>	USGPH	281	230	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.44	0.61	-
Max. Power, motors	HP	0.88	0.88	0.88
Max. Power cons. heating	kW	-	-	-
Max. Current, motors (1 ph)	A	2.85	2.85	2.85
Max. Current consumption	A	2.85	2.85	2.85
Max. Air displacement	cfm	2188	2188	2188
Max. Air outlet temperature	°F	115	106	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	46	46	46

### BASIC DATA

Max Door Width	100"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	------	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>	
Weight	kg	84	89	78
Electrical supply/phase	V/ph	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	24.1	20.1	-
Max. Water flow rate <sup>2</sup>	l/h	1063	872	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	3	4.2	-
Max. Power, motors	kW	0.66	0.66	0.66
Max. Power cons. heating	kW	-	-	-
Max. Current, motors (1 ph)	A	2.85	2.85	2.85
Max. Current consumption	A	2.85	2.85	2.85
Max. Air displacement	m <sup>3</sup> /h	3718	3718	3718
Max. Air outlet temperature	°C	46	41	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	46	46	46

### BASIC DATA

Max Door Width	2.5 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

<sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).

<sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).

<sup>3</sup> with strength level 2 of 3.

# CASSETTE MODEL

## DF M-100-C

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	85	89	91	78
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	29	24	27	-
Max. Water flow rate <sup>2</sup>	USGPH	100	81	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.03	0.04	-	-
Max. Power, motors	HP	0.53	0.53	0.53	0.53
Max. Power cons. heating	kW	-	-	8.2	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	24.4	1.71
Max. Air displacement	cfm	958	958	939	958
Max. Air outlet temperature	°F	105	97	118	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	47	47	46	47

### BASIC DATA

Max Door Width	40"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	39	41	42	36
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	8.6	7	7.8	-
Max. Water flow rate <sup>2</sup>	l/h	379	305	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.23	0.29	-	-
Max. Power, motors	kW	0.39	0.39	0.39	0.39
Max. Power cons. heating	kW	-	-	8.2	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	24.4	1.71
Max. Air displacement	m <sup>3</sup> /h	1627	1627	1595	1627
Max. Air outlet temperature	°C	40	36	48	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	47	47	46	47

### BASIC DATA

Max Door Width	1.0 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# CASSETTE MODEL

## DF M-150-C

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	122	128	133	115
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	50	41	40	-
Max. Water flow rate <sup>2</sup>	USGPH	170	139	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.12	0.16	-	-
Max. Power, motors	HP	0.7	0.7	0.7	0.7
Max. Power cons. heating	kW	-	-	12.3	-
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	36.3	2.28
Max. Air displacement	cfm	1503	1503	1426	1503
Max. Air outlet temperature	°F	109	101	124	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	47	47	45	47

### BASIC DATA

Max Door Width	60"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	56	58	60	52
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	14.6	12.1	11.7	-
Max. Water flow rate <sup>2</sup>	l/h	642	525	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.81	1.08	-	-
Max. Power, motors	kW	0.52	0.52	0.52	0.52
Max. Power cons. heating	kW	-	-	12.3	-
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	36.3	2.28
Max. Air displacement	m <sup>3</sup> /h	2554	2554	2422	2554
Max. Air outlet temperature	°C	43	38	51	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	47	47	45	47

### BASIC DATA

Max Door Width	1.5 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

<sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).

<sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).

<sup>3</sup> with strength level 2 of 3.

# CASSETTE MODEL

## DF M-200-C

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	164	172	179	154
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	68	56	53	-
Max. Water flow rate <sup>2</sup>	USGPH	230	189	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.26	0.35	-	-
Max. Power, motors	HP	1.05	1.05	1.05	1.05
Max. Power cons. heating	kW	-	-	16.4	-
Max. Current, motors (1 ph)	A	3.42	3.42	3.42	3.42
Max. Current consumption	A	3.42	3.42	48.8	3.42
Max. Air displacement	cfm	1915	1915	1878	1915
Max. Air outlet temperature	°F	110	101	118	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	50	50	49	50

### BASIC DATA

Max Door Width	80"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	74	78	81	70
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	19.8	16.5	15.5	-
Max. Water flow rate <sup>2</sup>	l/h	872	717	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	1.76	2.42	-	-
Max. Power, motors	kW	0.79	0.79	0.79	0.79
Max. Power cons. heating	kW	-	-	16.4	-
Max. Current, motors (1 ph)	A	3.42	3.42	3.42	3.42
Max. Current consumption	A	3.42	3.42	48.8	3.42
Max. Air displacement	m <sup>3</sup> /h	3254	3254	3190	3254
Max. Air outlet temperature	°C	43	39	48	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	50	50	49	50

### BASIC DATA

Max Door Width	2.0 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# CASSETTE MODEL

## DF M-250-C

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	203	214	223	189
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	91	77	53	-
Max. Water flow rate <sup>2</sup>	USGPH	312	259	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.53	0.75	-	-
Max. Power, motors	HP	1.23	1.23	1.23	1.23
Max. Power cons. heating	kW			16.4	
Max. Current, motors (1 ph)	A	3.99	3.99	3.99	3.99
Max. Current consumption	A	3.99	3.99	49.4	3.99
Max. Air displacement	cfm	2631	2631	2495	2631
Max. Air outlet temperature	°F	111	103	111	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	51	51	49	51

### BASIC DATA

Max Door Width	100"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	------	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	92	97	101	86
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	26.8	22.6	15.5	-
Max. Water flow rate <sup>2</sup>	l/h	1181	979	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	3.65	5.18	-	-
Max. Power, motors	kW	0.92	0.92	0.92	0.92
Max. Power cons. heating	kW			16.4	
Max. Current, motors (1 ph)	A	3.99	3.99	3.99	3.99
Max. Current consumption	A	3.99	3.99	49.4	3.99
Max. Air displacement	m <sup>3</sup> /h	4470	4470	4239	4470
Max. Air outlet temperature	°C	44	39	44	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	51	51	49	51

### BASIC DATA

Max Door Width	2.5 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

<sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).

<sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).

<sup>3</sup> with strength level 2 of 3.

# RECESSED MODEL

## DF S-100-R

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	66	70	75	62
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	27	22	16	-
Max. Water flow rate <sup>2</sup>	USGPH	93	75	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.03	0.04	-	-
Max. Power, motors	HP	0.35	0.35	0.35	0.35
Max. Power cons. heating	kW	-	-	5.0	-
Max. Current, motors (1 ph)	A	1.14	1.14	1.14	1.14
Max. Current consumption	A	1.14	1.14	22.9	1.14
Max. Air displacement	cfm	845	845	845	845
Max. Air outlet temperature	°F	109	100	107	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	42	42	42	42

### BASIC DATA

Max Door Width	40"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	30	32	34	28
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	8	6.5	4.7	-
Max. Water flow rate <sup>2</sup>	l/h	353	283	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.2	0.25	-	-
Max. Power, motors	kW	0.26	0.26	0.26	0.26
Max. Power cons. heating	kW	-	-	5.0	-
Max. Current, motors (1 ph)	A	1.14	1.14	1.14	1.14
Max. Current consumption	A	1.14	1.14	22.9	1.14
Max. Air displacement	m <sup>3</sup> /h	1435	1435	1435	1435
Max. Air outlet temperature	°C	43	38	42	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	42	42	42	42

### BASIC DATA

Max Door Width	1.0 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# RECESSED MODEL

## DF S-150-R

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	99	106	114	97
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	45	38	32	-
Max. Water flow rate <sup>2</sup>	USGPH	155	126	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.1	0.13	-	-
Max. Power, motors	HP	0.53	0.53	0.53	0.53
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	45.2	1.71
Max. Air displacement	cfm	1286	1286	1286	1286
Max. Air outlet temperature	°F	113	103	120	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	43	43	43	43

### BASIC DATA

Max Door Width	60"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	45	48	52	44
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	13.3	11	9.5	-
Max. Water flow rate <sup>2</sup>	l/h	587	477	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.69	0.91	-	-
Max. Power, motors	kW	0.39	0.39	0.39	0.39
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	45.2	1.71
Max. Air displacement	m <sup>3</sup> /h	2185	2185	2185	2185
Max. Air outlet temperature	°C	45	40	49	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	43	43	43	43

### BASIC DATA

Max Door Width	1.5 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

<sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).

<sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).

<sup>3</sup> with strength level 2 of 3.



# RECESSED MODEL

## DF S-200-R

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	128	136	149	124
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	63	53	32	-
Max. Water flow rate <sup>2</sup>	USGPH	216	177	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.23	0.31	-	-
Max. Power, motors	HP	0.7	0.7	0.7	0.7
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	45.8	2.28
Max. Air displacement	cfm	1718	1718	1718	1718
Max. Air outlet temperature	°F	114	105	107	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	45	45	45	45

### BASIC DATA

Max Door Width	80"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	58	62	68	57
Electrical supply/phase	V/ph	230/1	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	18.6	15.4	9.5	-
Max. Water flow rate <sup>2</sup>	l/h	819	670	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	1.57	2.14	-	-
Max. Power, motors	kW	0.52	0.52	0.52	0.52
Max. Power cons. heating	kW	-	-	10.0	-
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	45.8	2.28
Max. Air displacement	m <sup>3</sup> /h	2919	2919	2919	2919
Max. Air outlet temperature	°C	46	40	41	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	45	45		45

### BASIC DATA

Max Door Width	2.0 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# RECESSED MODEL

## DF S-250-R

IMPERIAL		WATER		AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>	
Weight	lb	163	174	157
Electrical supply/phase	V/ph	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	82	69	-
Max. Water flow rate <sup>2</sup>	USGPH	281	230	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.44	0.61	-
Max. Power, motors	HP	0.88	0.88	0.88
Max. Power cons. heating	kW	-	-	-
Max. Current, motors (1 ph)	A	2.85	2.85	2.85
Max. Current consumption	A	2.85	2.85	2.85
Max. Air displacement	cfm	2188	2188	2188
Max. Air outlet temperature	°F	115	106	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	46	46	46

### BASIC DATA

Max Door Width	100"	Max. Door Height	80 - 100"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	------	------------------	-----------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>	
Weight	kg	74	79	71
Electrical supply/phase	V/ph	230/1	230/1	230/1
Max. Heating capacity <sup>2</sup>	kW	24.1	20.1	-
Max. Water flow rate <sup>2</sup>	l/h	1063	872	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	3	4.2	-
Max. Power, motors	kW	0.66	0.66	0.66
Max. Power cons. heating	kW	-	-	-
Max. Current, motors (1 ph)	A	2.85	2.85	2.85
Max. Current consumption	A	2.85	2.85	2.85
Max. Air displacement	m <sup>3</sup> /h	3718	3718	3718
Max. Air outlet temperature	°C	46	41	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	46	46	46

### BASIC DATA

Max Door Width	2.5 m	Max. Door Height	2.0 - 2.5 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# RECESSED MODEL

## DF M-100-R

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	75	79	84	71
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	29	24	27	-
Max. Water flow rate <sup>2</sup>	USGPH	100	81	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.03	0.04	-	-
Max. Power, motors	HP	0.53	0.53	0.53	0.53
Max. Power cons. heating	kW	-	-	8.2	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	24.4	1.71
Max. Air displacement	cfm	958	958	939	958
Max. Air outlet temperature	°F	105	97	118	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	47	47	46	47

### BASIC DATA

Max Door Width	40"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	34	36	38	32
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	8.6	7	7.8	-
Max. Water flow rate <sup>2</sup>	l/h	379	305	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.23	0.29	-	-
Max. Power, motors	kW	0.39	0.39	0.39	0.39
Max. Power cons. heating	kW	-	-	8.2	-
Max. Current, motors (1 ph)	A	1.71	1.71	1.71	1.71
Max. Current consumption	A	1.71	1.71	24.4	1.71
Max. Air displacement	m <sup>3</sup> /h	1627	1627	1595	1627
Max. Air outlet temperature	°C	40	36	48	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	47	47	46	47

### BASIC DATA

Max Door Width	1.0 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# RECESSED MODEL

## DF M-150-R

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	109	115	124	106
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	50	41	40	-
Max. Water flow rate <sup>2</sup>	USGPH	170	139	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.12	0.16	-	-
Max. Power, motors	HP	0.7	0.7	0.7	0.7
Max. Power cons. heating	kW			12.3	
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	36.3	2.28
Max. Air displacement	cfm	1503	1503	1426	1503
Max. Air outlet temperature	°F	109	101	124	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	47	47	45	47

### BASIC DATA

Max Door Width	60"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	49	52	56	48
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	14.6	12.1	11.7	-
Max. Water flow rate <sup>2</sup>	l/h	630	525	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	0.81	1.08	-	-
Max. Power, motors	kW	0.52	0.52	0.52	0.52
Max. Power cons. heating	kW			12.3	
Max. Current, motors (1 ph)	A	2.28	2.28	2.28	2.28
Max. Current consumption	A	2.28	2.28	36.3	2.28
Max. Air displacement	m <sup>3</sup> /h	2554	2554	2422	2554
Max. Air outlet temperature	°C	43	38	51	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	47	47	45	47

### BASIC DATA

Max Door Width	1.5 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

<sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).

<sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).

<sup>3</sup> with strength level 2 of 3.

# RECESSED MODEL

## DF M-200-R

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	146	154	167	142
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	68	56	53	-
Max. Water flow rate <sup>2</sup>	USGPH	230	189	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.26	0.35	-	-
Max. Power, motors	HP	1.05	1.05	1.05	1.05
Max. Power cons. heating	kW	-	-	16.4	-
Max. Current, motors (1 ph)	A	3.42	3.42	3.42	3.42
Max. Current consumption	A	3.42	3.42	48.8	3.42
Max. Air displacement	cfm	1915	1915	1878	1915
Max. Air outlet temperature	°F	110	102	118	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	50	50	49	50

### BASIC DATA

Max Door Width	80"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	-----	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	66	70	76	65
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	19.8	16.5	15.5	-
Max. Water flow rate <sup>2</sup>	l/h	872	717	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	1.76	2.42	-	-
Max. Power, motors	kW	0.79	0.79	0.79	0.79
Max. Power cons. heating	kW	-	-	16.4	-
Max. Current, motors (1 ph)	A	3.42	3.42	3.42	3.42
Max. Current consumption	A	3.42	3.42	48.8	3.42
Max. Air displacement	m <sup>3</sup> /h	3254	3254	3190	3254
Max. Air outlet temperature	°C	43	39	48	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	50	50	49	50

### BASIC DATA

Max Door Width	2.0 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

- <sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).
- <sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).
- <sup>3</sup> with strength level 2 of 3.

# RECESSED MODEL

## DF M-250-R

IMPERIAL		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	lb	181	192	208	175
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kBTU/h	91	77	53	-
Max. Water flow rate <sup>2</sup>	USGPH	312	259	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	psi	0.53	0.75	-	-
Max. Power, motors	HP	1.23	1.23	1.23	1.23
Max. Power cons. heating	kW	-	-	16.4	-
Max. Current, motors (1 ph)	A	3.99	3.99	3.99	3.99
Max. Current consumption	A	3.99	3.99	49.4	3.99
Max. Air displacement	cfm	2631	2631	2495	2631
Max. Air outlet temperature	°F	111	103	111	-
Avg. Noise level at 3 m <sup>2</sup>	dB(A)	51	51	49	51

### BASIC DATA

Max Door Width	100"	Max. Door Height	100 - 120"	Room Temp	68 °F	Water Range W2	194/158 °F	Water Range W4	140/104 °F
----------------	------	------------------	------------	-----------	-------	----------------	------------	----------------	------------

METRIC		WATER		ELECTRIC	AMBIENT
		W2 <sup>1</sup>	W4 <sup>1</sup>		
Weight	kg	83	87	95	80
Electrical supply/phase	V/ph	230/1	230/1	208/3	230/1
Max. Heating capacity <sup>2</sup>	kW	26.8	22.6	15.5	-
Max. Water flow rate <sup>2</sup>	l/h	1181	979	-	-
Max. Water pressure loss <sup>2</sup> (excluding valve)	kPa	3.65	5.18	-	-
Max. Power, motors	kW	0.92	0.92	0.92	0.92
Max. Power cons. heating	kW	-	-	16.4	-
Max. Current, motors (1 ph)	A	3.99	3.99	3.99	3.99
Max. Current consumption	A	3.99	3.99	49.4	3.99
Max. Air displacement	m <sup>3</sup> /h	4470	4470	4239	4470
Max. Air outlet temperature	°C	44	39	44	-
Avg. Noise level at 3 m <sup>3</sup>	dB(A)	51	51	49	51

### BASIC DATA

Max Door Width	2.5 m	Max. Door Height	2.5 - 3.0 m	Room Temp	20 °C	Water Range W2	90/70 °C	Water Range W4	60/40 °C
----------------	-------	------------------	-------------	-----------	-------	----------------	----------	----------------	----------

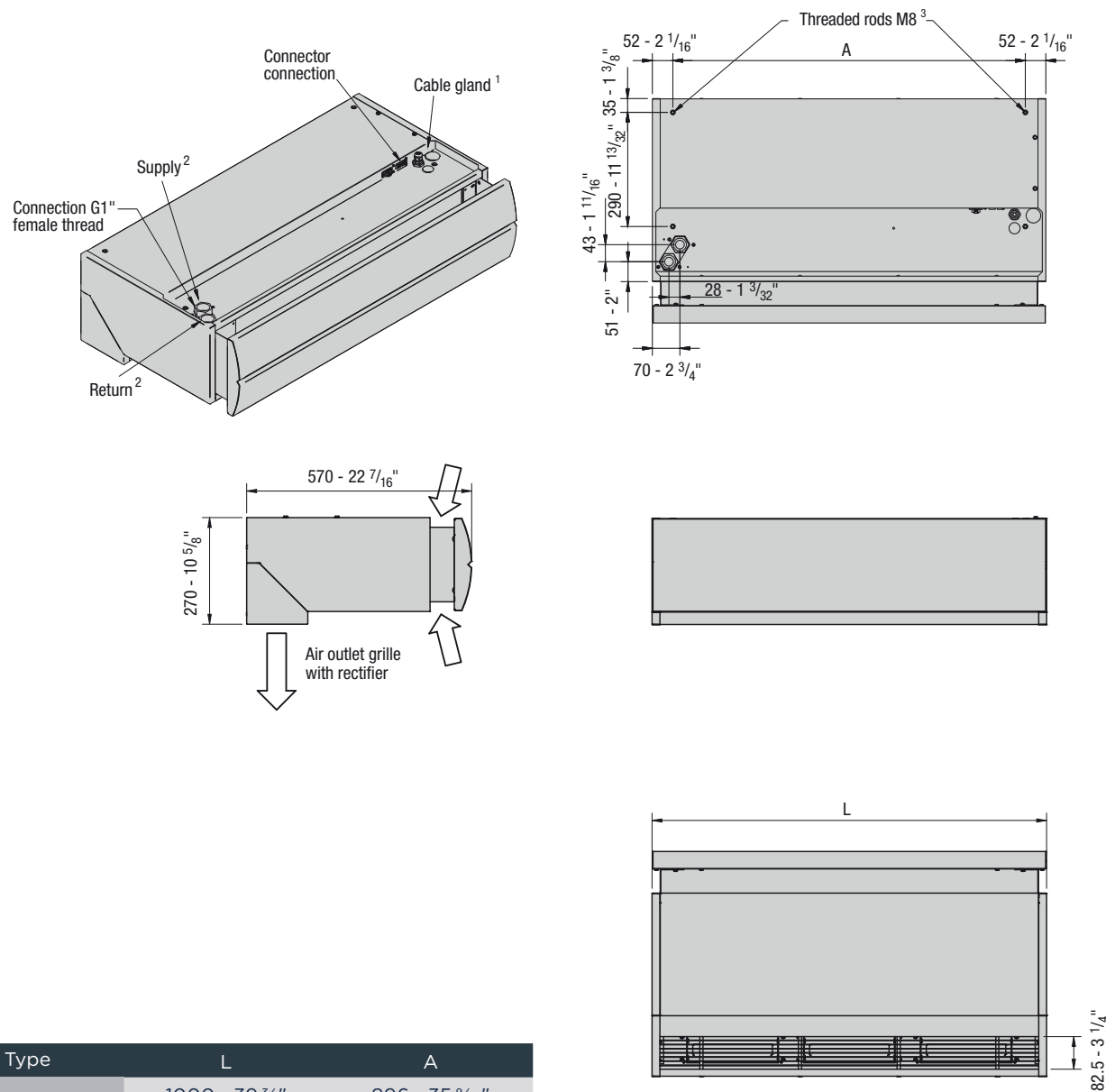
<sup>1</sup> The 2-row heating coil (W2) is suitable for the water ranges 80/60°C and 90/70°C (176/140°F and 194/158°F) and the 4-row heating coil (W4) for low water temperatures between 45/35°C and 70/50°C (113/95°F and 158/122°F).

<sup>2</sup> The calculations of the tables of the W2 are based on a water range of 90/70°C (1194/158°F) and those for the W4 on a water range of 60/40°C (140/104°F) (water heating).

<sup>3</sup> with strength level 2 of 3.

# FREE HANGING UNITS STYLE F

## DIMENSIONAL DRAWINGS



Type	L	A
DF S/M	1000 - 39 3/8"	896 - 35 9/32"
	1500 - 59 1/16"	1396 - 54 31/32"
	2000 - 78 3/4"	1896 - 74 21/32"
	2500 - 98 7/16"	2396 - 94 11/32"

ⓘ All dimensions are in mm and inches.

1 Only for electrical units.

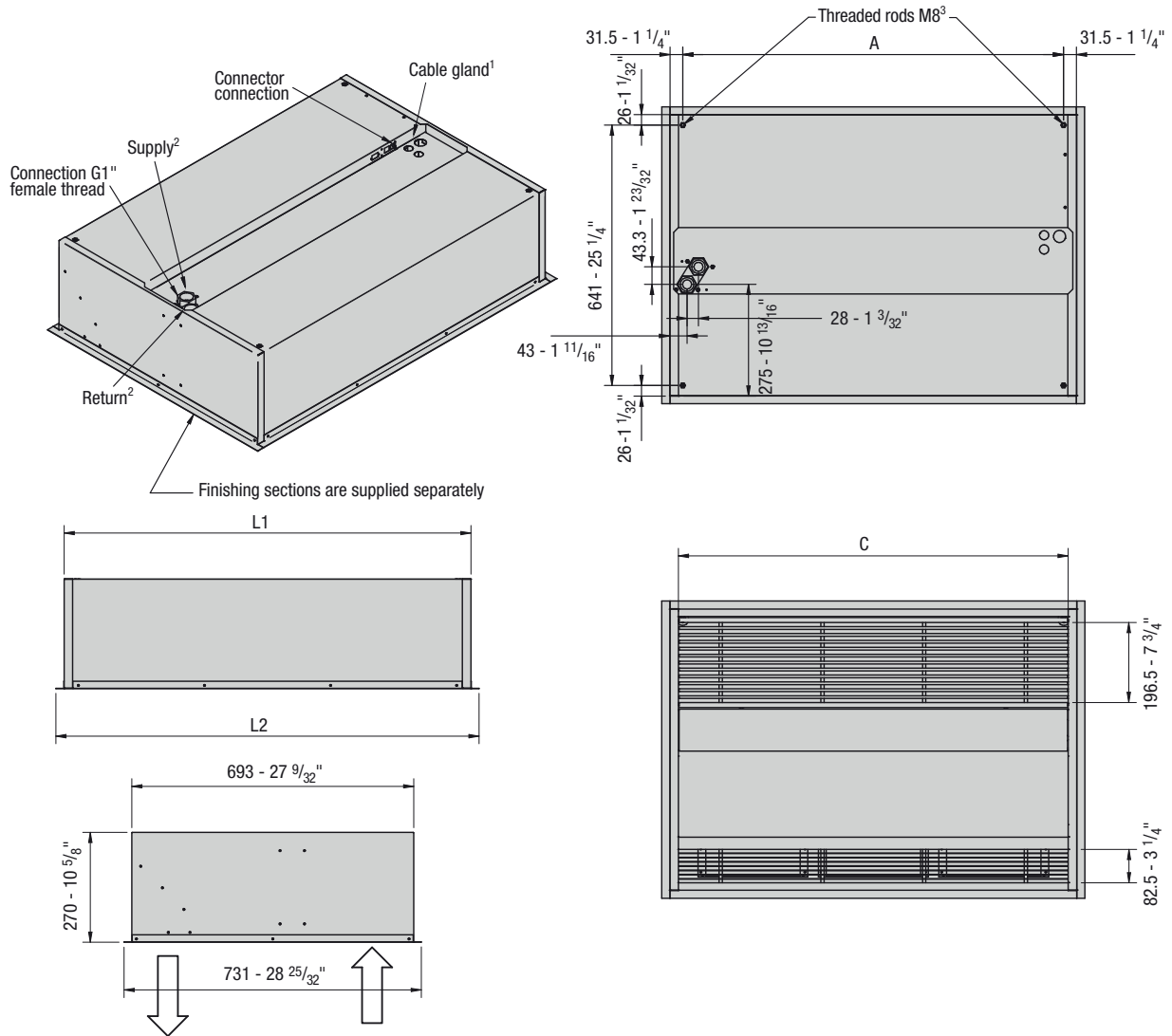
2 Only for water units.

3 DF S/M 100/150 and 200 version features a 4 x M8 internal thread, while the 250 version has a 6 x M8 internal thread.



# CASSETTE UNITS STYLE C

## DIMENSIONAL DRAWINGS



Type	L1	L2	A	C
DF S/M	1000 - 39 3/8"	1040 - 40 15/16"	937 - 36 7/8"	958 - 37 23/32"
	1500 - 59 1/16"	1540 - 60 5/8"	1437 - 56 9/16"	1458 - 57 13/32"
	2000 - 78 3/4"	2040 - 80 5/16"	1937 - 76 1/4"	1958 - 77 3/32"
	2500 - 98 7/16"	2540 - 100"	2437 - 95 15/16"	2458 - 96 25/32"

1 All dimensions are in mm and inches.

2 Daylight openings (if cover mouldings are used): -for air discharge (L1 + 8 x 701 mm) - (L1 + 5/16" x 27 19/32").

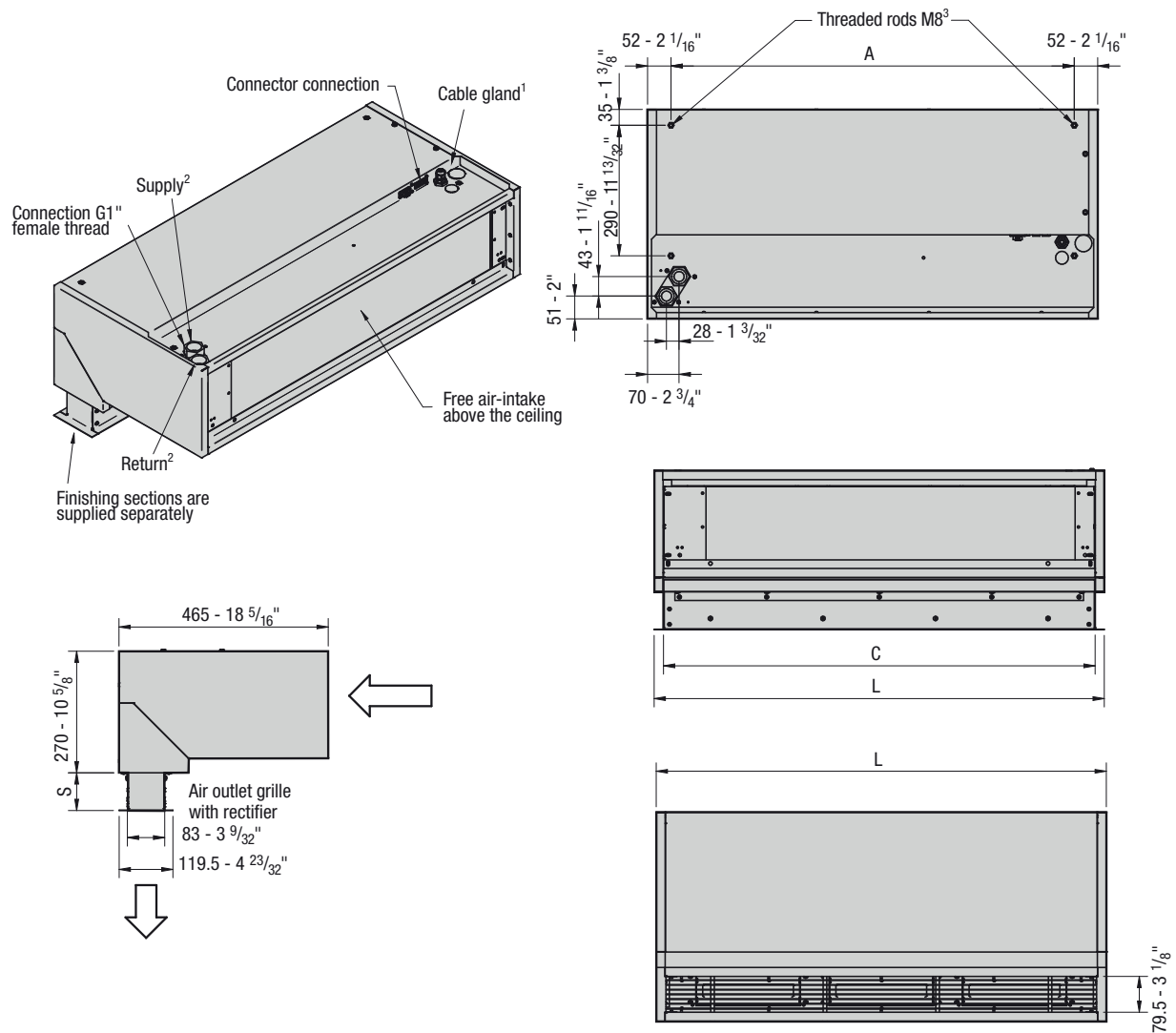
3 Only for electrical units.

4 Only for water units.

5 DF S/M 100/150 and 200 version features a 4 x M8 internal thread, while the 250 version has a 6 x M8 internal thread.

# CEILING RECESSED UNITS STYLE R

## DIMENSIONAL DRAWINGS



Type	L	A	C	S
DF S/M	1000 - 39 3/8"	896 - 35 9/32"	960 - 37 25/32"	50 - 1 31/32" - 115 - 4 17/32"
	1500 - 59 1/16"	1396 - 54 31/32"	1460 - 57 15/32"	
	2000 - 78 3/4"	1896 - 74 21/32"	1960 - 77 5/32"	
	2500 - 98 7/16"	2396 - 94 11/32"	2460 - 96 27/32"	

ⓘ All dimensions are in mm and inches.

ⓘ Daylight openings (if cover mouldings are used): -for air discharge 92 x (C+8) mm - 3 5/8" x (C + 5/16").

ⓘ For safety reasons electrical heated and ambient units come with a guard grille.

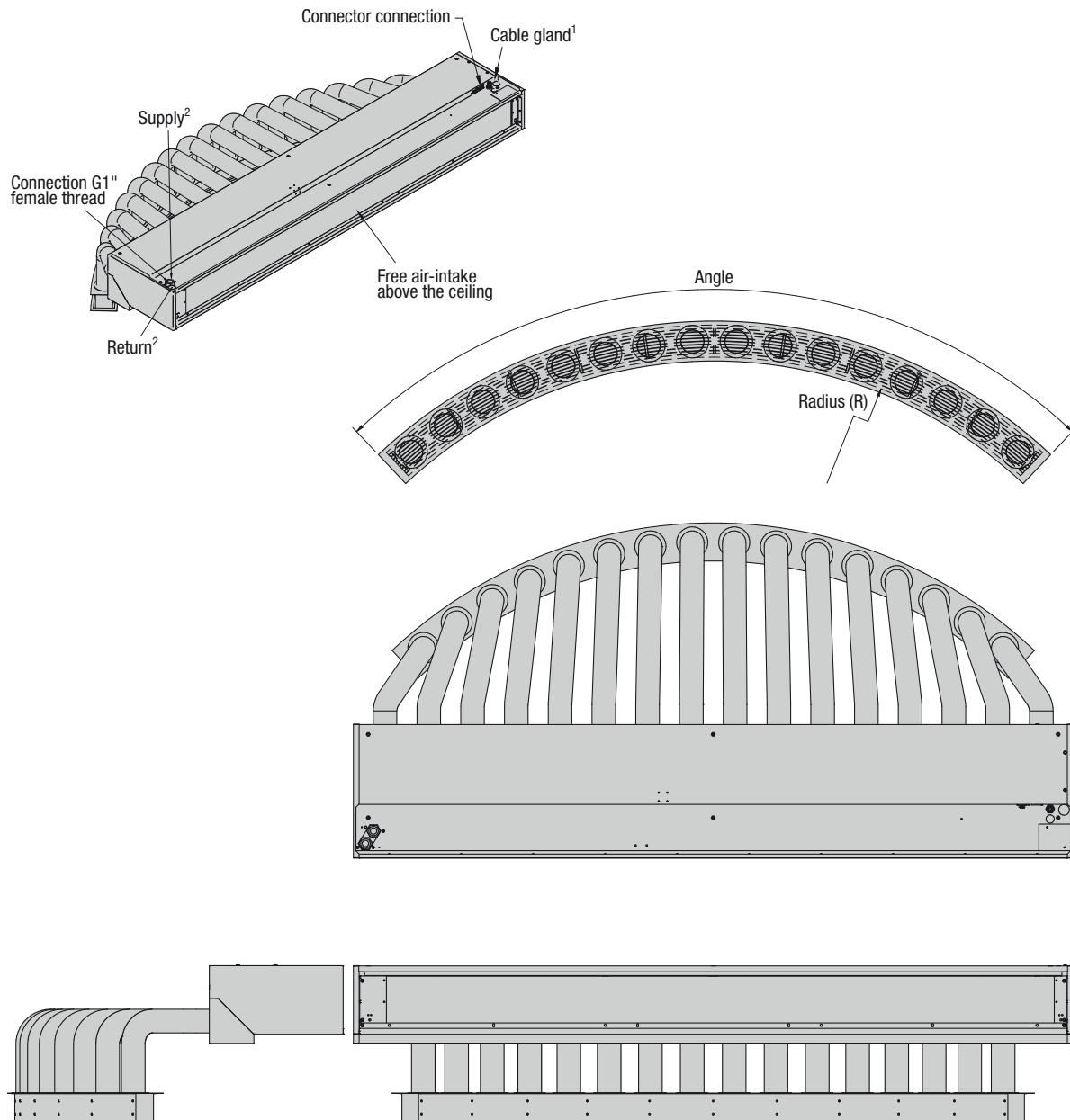
<sup>1</sup> Only for electrical units.

<sup>2</sup> Only for water units.

<sup>3</sup> DF S/M 100/150 and 200 version features a 4 x M8 internal thread, while the 250 version has a 6 x M8 internal thread.

# TOURNIQUET MODEL

## DIMENSIONAL DRAWINGS



ⓘ All dimensions are in mm and inches.

ⓘ The angle and the radius (R) are needed for an air curtain to fit around the curve of a revolving door.

ⓘ For the dimensions of the air curtain, see dimensions Recessed model (R).

ⓘ The selection of the unit type depends on the extended length of the revolving door.

<sup>1</sup> Only for electrical units.

<sup>2</sup> Only for water units.

## BIDDLE AIR SYSTEMS

1210 Balmoral Road  
Cambridge, Ontario  
N1T 1A5 Canada

**T** 705-797-0007

**TF** 1-866-693-4333

**E** [biddle@carver-na.com](mailto:biddle@carver-na.com)

[www.biddle.ca](http://www.biddle.ca)

## ADVANCED ENERGY SOLUTIONS

Bay 1H 1916 - 30 Ave. NE  
Calgary, Alberta  
T2E 7B2

**T** 403-284-9726

**TF** 866-284-9726

[www.aircurtain.ca](http://www.aircurtain.ca)



Every effort has been made to ensure descriptions are correct at the time of print.  
Errors and omissions excepted. CA|DOORFLOW|V1|10|2019

