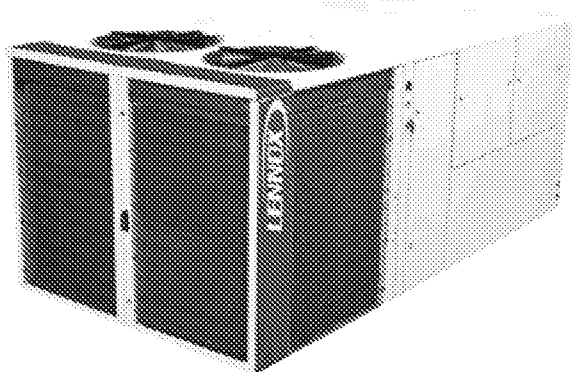
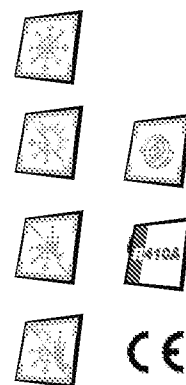


- 3

Flexy™ . 85 → 234 kW

Rooftop unit

FLEXY™ II



Introduction to the range

- Copeland SCROLL compressors for maximum efficiency, reliability and low noise
- Thermostatic expansion valves
- Tandem assembly for improved part load efficiency and increased operating limits
- Alternate defrost: Heat pump have independent defrost. When one circuit is in defrost cycle, the second is still in heat pump mode
- Dynamic defrost : using a set of sensors, Climatic™50 detects when coils are frozen and starts defrost cycle only when needed
- Low speed air in the air treatment section for reduced pressure drop and lower noise
- Extra high efficiency variable plug fan option for life cycle cost reduction (energy + maintenance)
- Modulating gas burner option for comfort improvement



Easy installation and service

- Aluminium body for very low weight and maximum corrosion resistance
- Numbered wires , all wires and connectors are numbered as shown on the electrical drawing to facilitate maintenance and diagnostics



Indoor Air Quality and environmentally friendly

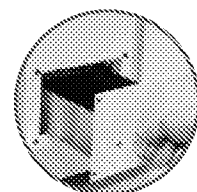
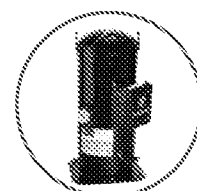
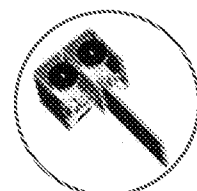
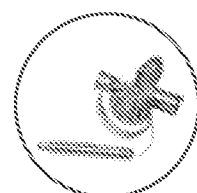
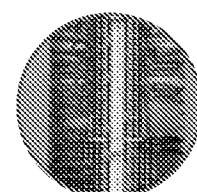
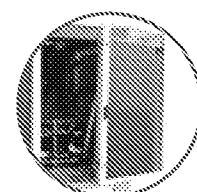
- R410A refrigerant
- Removable and washable condensing drain pan for improved indoor air quality
- Fireproof (MO) insulation
- IAQ kit (UV light) and Double Skin wall option for more demanding applications in Indoor Air Quality
- F7 filtration for improved Indoor air quality (option)

“FLEXY” bility

- From 85 to 230 kW to cover wide range of applications
- Cooling only (C) , Heat pump (H) , Cooling and gas fired (G) or heat pump and gas fired (D)
- Variable drive pulley as a standard feature
- External static pressure up to 600 Pa
- Plug and play unit, all units have factory fitted options, fully tested and wired

Safety

- Compliant with EN 60204-1
- Compliant with PED 97-23 directive
- All electrical components are protected by circuit breakers



General data

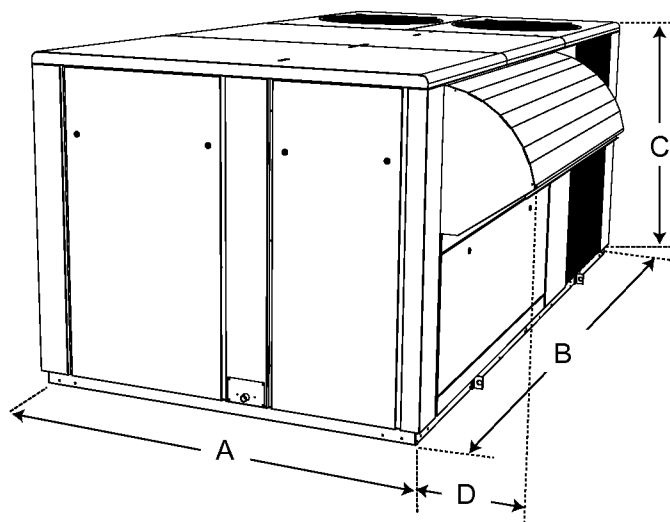
FLEX™ FC/FH/FQ/FD		55	100	120
Cooling mode FCM/FGM/FHM/FDM				
Gross cooling capacity (35 °C out, 27°C in, 47% HR) Eurovent	kW	85,2	105	119
Gross COP cooling (32°C out, 26°C in, 60% HR)		2,94	2,74	2,68
Power input FCM	kW	29,0	38,3	44,5
Heating mode FHM/FDM				
Net heating capacity (7°C out, 20°C in)	kW	82,9	103	117
Net COP heating (7°C out, 20°C in) FHM		3,16	3,10	3,10
Auxiliary heating				
Gas heat capacity S	kW	55,2	55,2	55,2
Gas heat capacity H	kW	110,4	110,4	110,4
Electric heater capacity S	kW	30	30	30
Electric heater capacity M	kW	54	54	54
Electric heater capacity H	kW	72	72	72
Hot water coil capacity S (20°C in / water 90-70 °C)	kW	112	124	130
Hot water coil capacity H (20°C in / water 90-70 °C)	kW	175	197	209
Refrigerant circuit				
Nb of Circuits / Number of compressor per circuit		2 / 1		
Refrigerant charge per circuit	kg	10,5 + 10,5	10,5 + 10,6	10,6 + 10,6
Max. Outdoor temp. at Indoor 27°C DB/ 19°C WB	°C	46	44	44
Ventilation				
Nominal airflow	m³/h	15000	18500	20500
Minimum airflow	m³/h	12000	14000	15000
Maximum airflow	m³/h	23000	23000	23000
Acoustic				
Outdoor sound power (Standard unit)	dB(A)	87	88	87
Outdoor sound power (Low Noise unit)	dB(A)	82	82	82

FLEX™ FC/FH/FQ/FD		150	170	200	230
Cooling mode FCM/FGM/FHM/FDM					
Gross cooling capacity (35 °C out, 27°C in, 47% HR) Eurovent	kW	148	170	197	234
Gross COP cooling (32°C out, 26°C in, 60% HR)		2,83	2,58	2,99	2,66
Power input FCM	kW	52,4	65,9	65,9	88,1
Heating mode FHM/FDM					
Net heating capacity (7°C out, 20°C in)	kW	142	168	188	226
Net COP heating (7°C out, 20°C in) FHM		3,10	2,98	3,24	3,04
Auxiliary heating					
Gas heat capacity S	kW	110,4	110,4	165,6	165,6
Gas heat capacity H	kW	165,6	165,6	220,8	220,8
Electric heater capacity S	kW	45	45	72	72
Electric heater capacity M	kW	72	72	108	108
Electric heater capacity H	kW	108	108	162	162
Hot water coil capacity S (20°C in / water 90-70 °C)	kW	140	149	177	199
Hot water coil capacity H (20°C in / water 90-70 °C)	kW	251	272	296	313
Refrigerant circuit					
Nb of Circuits / Number of compressor per circuit		2 / 1 & 2	2 / 2		
Refrigerant charge per circuit	kg	15,8 + 16	16 + 16	22 + 22	23,5 + 23,5
Max. Outdoor temp. at Indoor 27°C DB/ 19°C WB	°C	44	46	46	44
Ventilation					
Nominal airflow	m³/h	26000	30000	35000	39000
Minimum airflow	m³/h	18000	21000	24000	27000
Maximum airflow	m³/h	35000	35000	43000	43000
Acoustic					
Outdoor sound power (Standard unit)	dB(A)	92	92	88	89
Outdoor sound power (Low Noise unit)	dB(A)	84	86	85	85

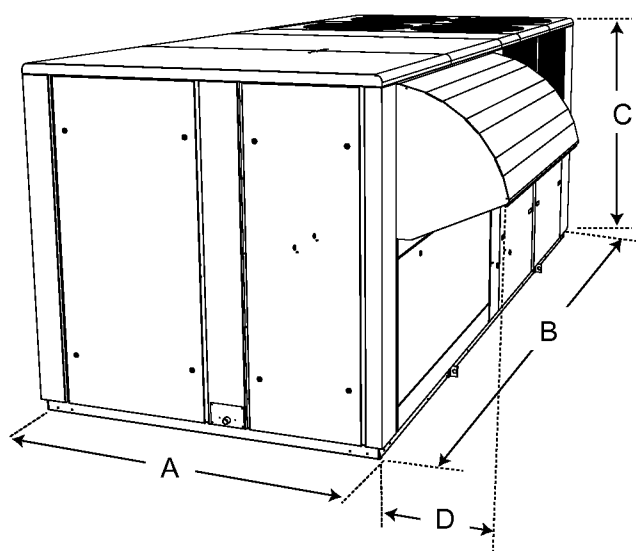
(*) S (Standard), M (Medium) and H (High)

Physical data

1



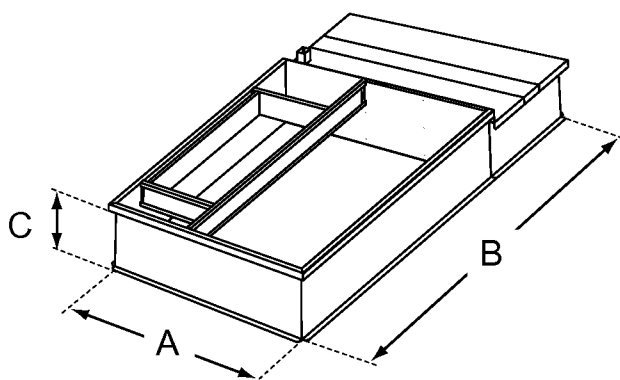
2



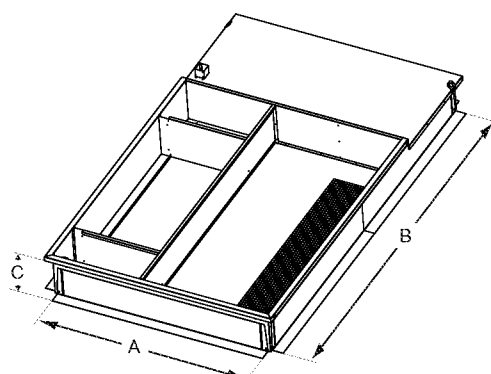
FLEXY™		FC/FH/FG/FD	85	100	120	150	170	200	230
View			1	1	2	2	2	2	2
A	mm		2200	2200	2200	2200	2200	2200	2200
B	mm		3350	3350	3350	4380	4380	5533	5533
C	mm		1510	1510	1510	1834	1834	2134	2134
D	mm		360	360	360	450	450	615	615
Weight of standard units									
Without economizer FCM	kg		934	1009	1085	1367	1430	1650	1950
With economizer	kg		990	1065	1142	1442	1505	1752	2052
Weight gas unit									
Without economizer	kg		1041	1116	1192	1608	1671	1914	2214
With economizer	kg		1097	1172	1249	1683	1746	2016	2316
High heat without economizer	kg		1111	1186	1262	1631	1694	1954	2254
High heat With economizer	kg		1167	1242	1319	1706	1769	2056	2356

Roofcurb

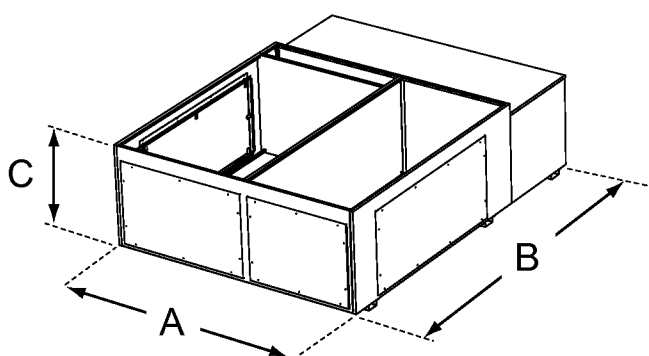
STANDARD ROOFCURB



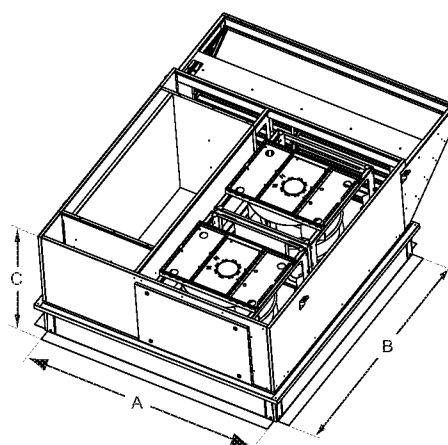
ADJUSTABLE ROOFCURB



MULTI DIRECTIONAL ROOFCURB



CENTRIFUGAL RETURN ROOFCURB

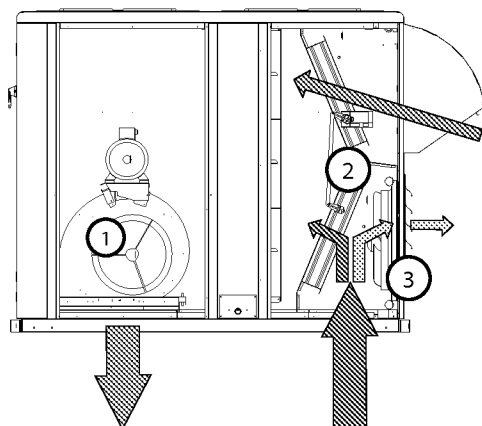


Roof opening

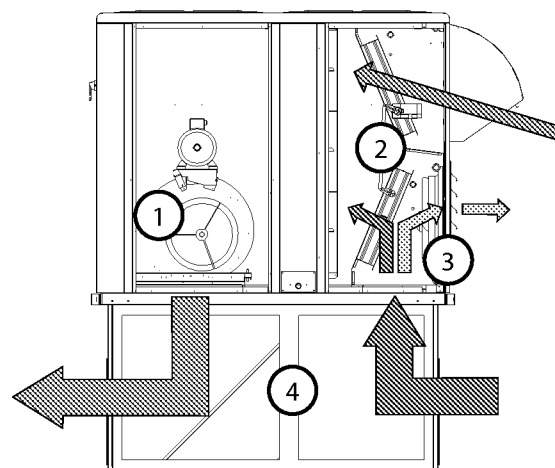
FLEXY™ II	FC/FH/FG/FD	85	100	120	150	170	200	230
Non-adjustable, non assembled roofcurb								
A	mm	2056	2056	2056	2056	2056	2056	2056
B	mm	2770	2770	2770	3466	3466	4066	4066
C	mm	400	400	400	400	400	425	425
Assembled adjustable roofcurb								
A	mm	2056	2056	2056	2056	2056	2056	2056
B	mm	2770	2770	2770	3466	3466	4100	4100
C	mm	400	400	400	400	400	400	400
Multidirectional roofcurb								
A	mm	2056	2056	2056	2056	2056	2056	2056
B	mm	2745	2745	2745	3441	3441	4070	4070
C	mm	800	800	800	1100	1100	1300	1300
Transition roofcurb								
A	mm	2056	2056	2056	2056	2056	2056	2056
B	mm	2770	2770	2770	3466	3466	4100	4100
C	mm	660	660	660	660	660	660	600
Return vertical roofcurb								
A	mm	2156	2156	2156	2156	2156	2156	2156
B	mm	2740	2740	2740	3437	3437	3394	3394
C	mm	1030	1030	1030	1030	1030	1030	1030
Return horizontal roofcurb								
A	mm	2056	2056	2056	2056	2056	2056	2056
B	mm	2762	2762	2762	3460	3460	4096	4096
C	mm	1220	1220	1220	1220	1220	1305	1305

Principle sketches

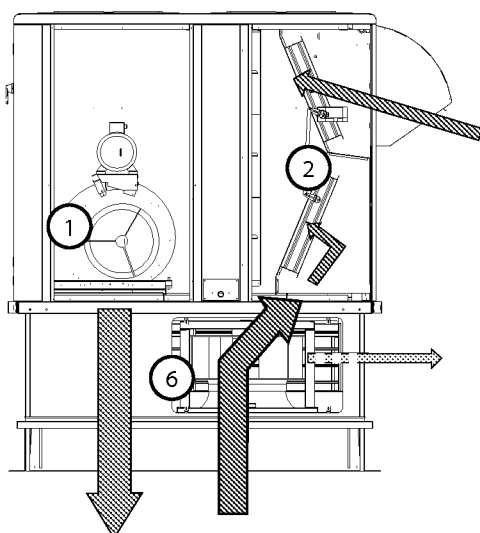
**FLEXY™ II
(vertical flow)**



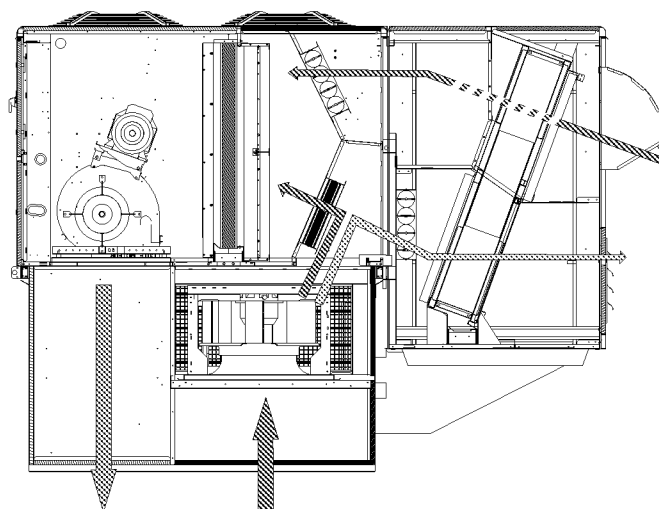
MULTIDIRECTIONAL ROOFCURB



**CENTRIFUGAL RETURN ROOFCURB
(vertical flow)**



ENERGY RECOVERY MODULE



	Fresh air
	Return air
	Exhaust air
	Supply air
	Supply fan
	Return air damper
	Exhaust damper
	Multidirectional curb
	Heat recovery exchanger
	Return / Exhaust fan

Extract of the option list

Auxiliary heating

- ♦ **Electric heater:** 3 sizes : «Standard», «Medium», and «High» heat. «Standard»-heat is a 2 stages electric heaters, «Medium» and «High» heat are fully modulated with TRIAC control allowing a constant supply temperature.
- ♦ **Hot water coil:** 1 and 2 row hot water coils configurations are available and offer fully modulated control through the use of a 3 way valve.
- ♦ **92% high efficiency gas burner option:** Due to its high efficiency and its new technologies, it assists in improving space comfort levels by avoiding large supply air temperature deviations.

Architectural Integration

- ♦ **Non-adjustable, non assembled roofcurb:** Shipped folded flat for ease of transport and handling, it is easily field assembled.
- ♦ **Adjustable roofcurb:** Aluzinc construction, for this adjustable roofcurb that can be installed on a roof with up to 4 to 5% slope in all directions.
- ♦ **Multidirectionnal roofcurb:** Has many airflow possibilities, including horizontal supply and return on the same side.
- ♦ **Horizontal / Up and down air flow:** Maximum flexibility, the rooftop can blow horizontally, upflow or downflow, same for return.

Indoor Air Quality

- ♦ **Centrifugal return roofcurb:** Where system balancing is critical, the plug fan is able to exhaust up to the nominal airflow of the unit with a maximum of 300Pa static pressure available and improves energy and maintenance cost.
- ♦ **Economiser:** «Free cooling» is provided through the use of fresh air when appropriate rather than cooling the return air, includes fresh and return air damper and hood.
- ♦ **Gravity exhaust damper:** Gravity exhaust mper relieves the pressure when outside air is being introduced in the system.
- ♦ **Axial power exhaust fan:** Installed with economiser assembly, it provides exhaust air pressure relief when high levels of fresh air are being introduced in the system.
- ♦ **Indoor Air Quality sensor:** This feature gives the possibility to match minimum fresh air requirements with occupancy. It measures CO2 levels and adjusts fresh airflow rate accordingly.
- ♦ **IAQ Kit : Germicidal light package (available only for sizes 085 to 170 included):** By the destruction of microorganism, the UV light keeps clean the coil and allow

constant air pressure drop on the coil, so less energy consumption.

Security & Extended lifecycle

- ♦ **Refillable G4 filters:** Instead of replacing the whole filter frame, only the media has to be changed. It's a good cost saving solution.
- ♦ **EU7 / F7 panels filters:** Set of two 50 mm filters. Adding a G4 prefilter before the F7 filter avoids excessive replacement of F7 filters.
- ♦ **Double skin 25 mm:** This feature prevents bacteria development on porous surface and allows an easy cleaning of the panel.
- ♦ **Transition curb:** It answers to the French regulation CH40 (Public buildings), which says, that rooftop can not be installed in France directly on a roofcurb.
- ♦ **Smoke detector:** The optical head of the smoke detector can detect any type of smoke. When this occurs the unit will stop operating, the return air damper will close fully and the fresh air damper will open fully

Comfort precision and energy efficiency

- ♦ **Air sock control:** Soft start control allows the air socks to be progressively filled with air on start up.
 - ♦ **High efficiency electronic commutation motor plug fan:** The EC plug-fan, not only absorbs 50% less energy than a normal centrifugal fan, but it is also a variable air volume fan. This feature dramatically decrease the energy consumption of the rooftop.
 - ♦ **Modulating gas burner option:** The burner maintains a constant gas/air mixture and a much optimized efficiency whatever the combustion air ratio is.
 - ♦ **Energy recovery module:** this option offers the possibility to recover the energy of the exhaust air.
- ### Quiet operation
- ♦ **Low noise option:** To achieve a low noise level, **FLEXY™ II** has a quieter fan, a compressor jacket and is fully equipped with acoustic isolation in the refrigerating box.

Flexibility

- ♦ **Adaptation roofcurb:** this roofcurb is used when you want to adapt a **BALTIC™** instead of an old unit.

Climatic 50 advanced control options

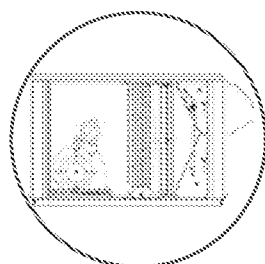
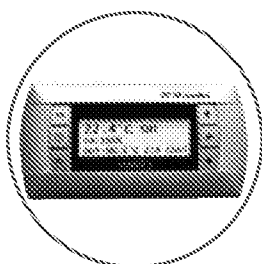
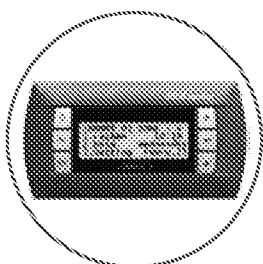
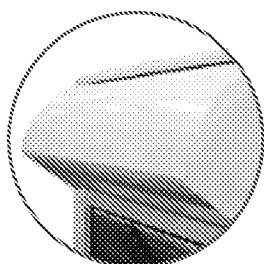
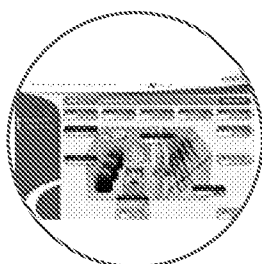
- ♦ **Advanced control pack:** Thanks to a software and a set of sensors, this pack allows

an enthalpy control on economiser and a humidity control.

- ♦ **DS 50 : Service display:** This service display controller is a plug and play feature. This allows service personnel to set, up to 207 settings, read up to 188 ariables, up to 45 faults and read the history of the last 32 faults.
- ♦ **DC50: Comfort display:** This is a remote controller for non-technical customer. It was designed to aesthetically fit in the room and be very easy to use. With DC50, the customer can change the scheduling of the different time zones, modify temperature set points and percentage of fresh air in each zone.
- ♦ **DM 50 Multi rooftop display:** It has the exact same features of the DC50, but, for a lower cost, it can manage up to 12 rooftops on a single Bus.
- ♦ **Communication Interface / Modbus Interface:** This board is a modbus interface, which is needed for anyone who would like a BMS system to talk to the **FLEXY™ II** with «Modbus protocol». No other hardware than this board is required to have modbus dialog. One board required per rooftop.
- ♦ **Lontalk Interface:** This board is a LonTalk® interface, which is needed for anyone who would like a BMS system to talk to the **FLEXY™ II** with «Lon protocol». No other hardware than this board is required to have LonTalk® dialog. One board required per rooftop.
- ♦ **Bacnet Interface:** This board is a Bacnet® interface, which is needed for anyone who would like a BMS system to talk to the **FLEXY™ II** with «Bacnet protocol» RS485.
- ♦ **Adalink:** It can control up to 32 units on the same site. It can show the whole site map showing status of the different units, zoom on each unit and allow the user to graphically change set point, access alarm list, look at trend curves.
- ♦ **Wireless:** Lennox is able to provide you a wireless customer display **DWC50** located in the ambient.

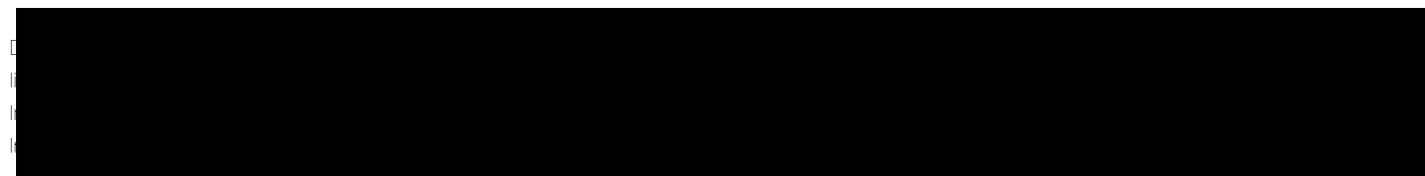
Notes:

1. EC-fan + airflow configuration options is only available in some airflow configurations. Please contact your local agent for more details.
2. Be aware that not all combinations of options are available. If you are not sure if certain combinations of options are available, please contact your local agent.





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