

K-factors

Commissioning Guide, Climate beams and Comfort modules

Calculation formula

$$q = k \cdot \sqrt{p_i} \quad [l/s]$$

q = primary air flow in l/s

p = balancing pressure in Pa

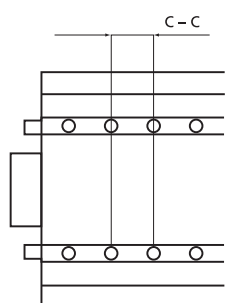
k = the pressure constant (k-factor) of the unit

The pressure constant is valid by 20°C and 1013 mbar

Measure point

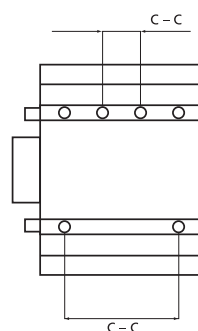
All climate beams and comfort modules are equipped with a tube where the nozzle pressure can be measured. When commissioning connect a manometer to the tube (inside diameter: 4 mm).

The positioning of the tube depends on the type of product. For beams with only one primary air connection the tube is placed close to the opposite end of the unit seen from the connection side. For beams with alternative primary air connections the tube is placed in the centre of the beam. For comfort modules the tube is placed in one of the corners.



Nozzle configuration 1 - 4

(same distance between the nozzles on both sides of the unit)

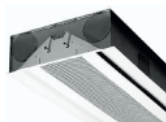


Nozzle configuration E, N, and 75/25%

(different distance between the nozzles on the right and the left side of the unit)

C-C distance between nozzles

Nozzle configuration	C-C (mm)
1	30
2	40
3	60
4	15
E	30/90
N	12/36



BALTIC / BRC						
	Nozzle configuration					
Length	1	2	3	4	E	N
1,2	2	1,5	1	4,1	1,4	3,4
1,5	2,6	1,9	1,3	5,2	1,7	4,3
1,8	3,1	2,4	1,6	6,3	2,1	5,2
2,1	3,7	2,8	1,9	7,4	2,5	6,2
2,4	4,3	3,2	2,1	8,5	2,8	7,1
2,7	4,8	3,6	2,4	9,7	3,2	8
3	5,4	4	2,7	10,8	3,6	9
3,3	5,9	4,5	3	11,9	4	9,9
3,6	6,5	4,9	3,3	13	4,3	10,8
3,9	7,1	5,3	3,5	14,1	4,7	11,8

Adjustable nozzles: Addition of 0.15 per adjustable nozzle
 E.G: BALTIC a 2.4-4-N4x5
 Pressure constant= 8.5+ (20x0.15)= 11.5



ADRIATIC (-OH)					
	Nozzle configuration				
Length	1	3	4	E	N
1,2	2	1	4,1	1,4	3,4
1,5	2,6	1,3	5,2	1,7	4,3
1,8	3,1	1,6	6,3	2,1	5,2
2,1	3,7	1,9	7,4	2,5	6,2
2,4	4,3	2,1	8,5	2,8	7,1
2,7	4,8	2,4	9,7	3,2	8
3	5,4	2,7	10,8	3,6	9
3,3	5,9	3	11,9	4	9,9
3,6	6,5	3,3	13	4,3	10,8
3,9	7,1	3,5	14,1	4,7	11,8

ADRIATIC (-I, Inside connection)					
	Nozzle configuration				
Length	1	3	4	E	N
1,2	1,5	0,7	2,9	1	2,4
1,5	2	1	4,1	1,4	3,4
1,8	2,6	1,3	5,2	1,7	4,3
2,1	3,1	1,6	6,3	2,1	5,2
2,4	3,7	1,9	7,4	2,5	6,2
2,7	4,3	2,1	8,5	2,8	7,1
3	4,8	2,4	9,7	3,2	8
3,3	5,4	2,7	10,8	3,6	9
3,6	5,9	3	11,9	4	9,9
3,9	6,5	3,3	13	4,3	10,8



BSAd				
	Nozzle configuration			
Length	1	2	3	E
1,2	2	1,5	1	1,4
1,5	2,6	1,9	1,3	1,7
1,8	3,1	2,4	1,6	2,1
2,1	3,7	2,8	1,9	2,5
2,4	4,3	3,2	2,1	2,8
2,7	4,8	3,6	2,4	3,2
3	5,4	4	2,7	3,6
3,3	5,9	4,5	3	4
3,6	6,5	4,9	3,3	4,3
3,9	7,1	5,3	3,5	4,7



BISCAY							
	Nozzle configuration						
Length	60/60	48/48	36/36	24/24	12/12	24/72, 72/24	12/36, 36/12
1092	0,92	1,16	1,54	2,31	4,62	1,54	3,08
1192	1,02	1,27	1,7	2,54	5,09	1,7	3,39
1242	1,06	1,33	1,77	2,66	5,32	1,77	3,55
1342	1,16	1,45	1,93	2,89	5,79	1,93	3,86
1392	1,2	1,51	2,01	3,01	6,02	2,01	4,01
1492	1,3	1,62	2,16	3,24	6,49	2,16	4,32
1692	1,48	1,86	2,47	3,71	7,42	2,47	4,95
1792	1,58	1,97	2,63	3,94	7,89	2,63	5,26
1867	1,65	2,06	2,75	4,12	8,24	2,75	5,49
2017	1,79	2,23	2,98	4,49	8,94	2,98	5,96
2092	1,86	2,32	3,1	4,64	9,29	3,1	6,19
2392	2,14	2,67	3,56	5,34	10,69	3,54	7,12
2492	2,23	2,79	3,72	5,58	11,15	3,72	7,44
2692	2,42	3,02	4,03	6,04	12,09	4,03	8,06
2992	2,7	3,37	4,5	6,74	13,49	4,5	8,99



PARASOL 592 MF	
Nozzle setting*	kpl
LLLL	1,01
LLMM	1,39
MMMM	1,76
MMHH	2,27
HHHH	2,77

* All four sides of the unit can be adjusted individually. The description of the nozzle setting follows the order shown in figure 1. See example shown in figure 2.

PARASOL 592 MF		
Nozzle setting per side	Nozzle size	kpl per side
L	Small	0,253
M	Large	0,440
H	Small+large	0,693
C	Closed	0

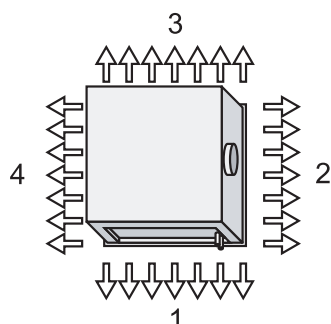


Figure 1. Top view nozzle setting singlemodule unit side 1-4.

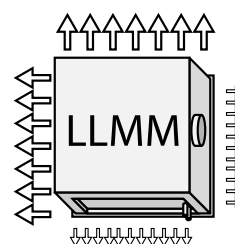


Figure 2. Example of nozzle setting for a single-module unit - LLMM



PARASOL 1192 LF					
Nozzle setting*	kpl	Nozzle setting per side	Side	Nozzle size	kpl per side
LLLL	0,9	L	Short side	Small	0,124
LLMM	1,09	L	Long side	Small	0,328
MMMM	1,28	M	Short side	Large	0,176
MMHH	1,73	M	Long side	Large	0,464
HHHH	2,18	H	Short side	Small+large	0,3
		H	Long side	Small+large	0,792
		C	Short side	Closed	0
		C	Long side	Closed	0

* All four sides of the unit can be adjusted individually. The description of the nozzle setting follows the order shown in figure 3. See example shown in figure 4.

PARASOL 1192 MF					
Nozzle setting*	kpl	Nozzle setting per side	Side	Nozzle size	kpl per side
LLLL	1,28	L	Short side	Small	0,176
LLMM	1,56	L	Long side	Small	0,464
MMMM	1,84	M	Short side	Large	0,253
MMHH	2,48	M	Long side	Large	0,667
HHHH	3,12	H	Short side	Small+large	0,429
		H	Long side	Small+large	1,131
		C	Short side	Closed	0
		C	Long side	Closed	0

* All four sides of the unit can be adjusted individually. The description of the nozzle setting follows the order shown in figure 3. See example shown in figure 4.

PARASOL 1192 HF					
Nozzle setting*	kpl	Nozzle setting per side	Side	Nozzle size	kpl per side
LLLL	1,84	L	Short side	Liten	0,253
LLMM	2,52	L	Long side	Liten	0,667
MMMM	3,2	M	Short side	Large	0,44
MMHH	4,12	M	Long side	Large	1,16
HHHH	5,04	H	Short side	Small+large	0,693
		H	Long side	Small+large	1,827
		C	Short side	Closed	0
		C	Long side	Closed	0

* All four sides of the unit can be adjusted individually. The description of the nozzle setting follows the order shown in figure 3. See example shown in figure 4.

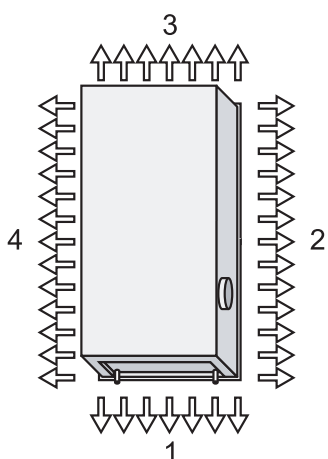


Figure 3. Top view nozzle setting double-module unit side 1-4.

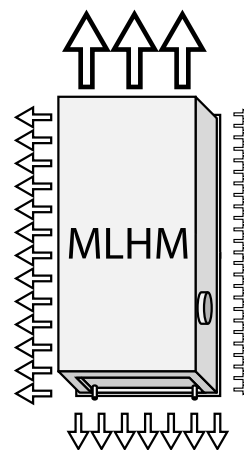


Figure 4. Example of nozzle setting for a double-module unit - MLHM.



PARASOL EX / PARASOL UC 690 MF	
Nozzle setting*	kpl
LLLL	1,01
LLMM	1,39
MMMM	1,76
MMHH	2,27
HHHH	2,77

* All four sides of the unit can be adjusted individually. The description of the nozzle setting follows the order shown in figure 5. See example shown in figure 6.

PARASOL EX / PARASOL UC 690 MF		
Nozzle setting per side	Nozzle size	kpl per side
L	Small	0,253
M	Large	0,44
H	Small+large	0,693
C	Closed	0

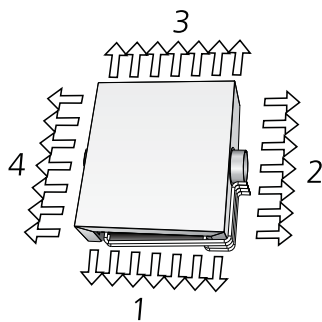


Figure 5. Top view nozzle setting singlemodule unit side 1-4.

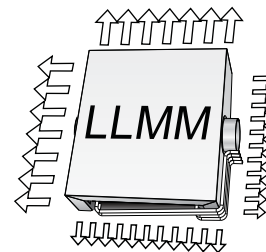


Figure 6. Example of nozzle setting for a single-module unit - LLMM



PARASOL EX / PARASOL UC 1290 MF					
Nozzle setting*	kpl	Nozzle setting/side	Side	Nozzle size	kpl per side
LLLL	1,28	L	Short side	Small	0,176
LLMM	1,56	L	Long side	Small	0,464
MMMM	1,84	M	Short side	Large	0,253
MMHH	2,48	M	Long side	Large	0,667
HHHH	3,12	H	Short side	Small+large	0,429
		H	Long side	Small+large	1,131
		C	Short side	Closed	0
		C	Long side	Closed	0

* All four sides of the unit can be adjusted individually. The description of the nozzle setting follows the order shown in figure 7. See example shown in figure 8.

PARASOL EX /PARASOL UC 1290 HF					
Nozzle setting*	kpl	Nozzle setting/side	Side	Nozzle size	kpl per side
LLLL	1,84	L	Short side	Small	0,253
LLMM	2,52	L	Long side	Small	0,667
MMMM	3,2	M	Short side	Large	0,44
MMHH	4,12	M	Long side	Large	1,16
HHHH	5,04	H	Short side	mall+large	0,693
		H	Long side	mall+large	1,827
		C	Short side	Closed	0
		C	Long side	Closed	0

* All four sides of the unit can be adjusted individually. The description of the nozzle setting follows the order shown in figure 7. See example shown in figure 8.

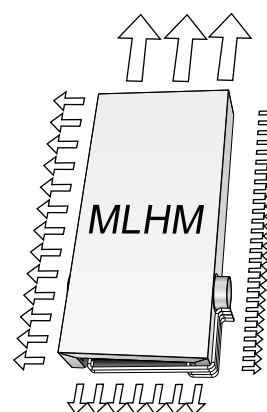
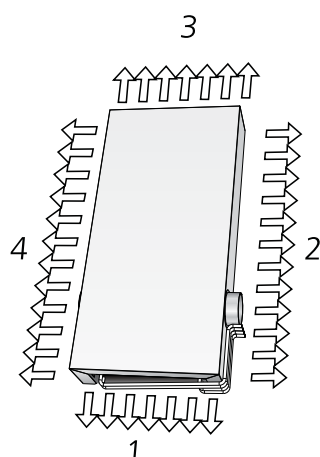


Figure 7. Top view nozzle setting doublemodule unit side 1-4.

Figure 8. Example of nozzle setting for a doublemodule unit - MLHM.