

FRIGA-BOHN®

NC

Centrifugal unit cooler
Industrial range

CO2 50bar

WG

HFC



|||| 5 - 95 kW



- # With many options available, the **NC adapts to the needs of your application as closely as possible.**
- # **Adaptable**, you can choose to install the NC on the floor or ceiling, depending on the requirements of the environment, thanks to its 4 modular blowing positions.
- # **Easy maintenance** with easy access to all components.

CASING

- # Robust, made of white pre-painted galvanized sheet steel.
- # Limited condensation: presence of an exterior drain pan and an aluminium intermediate drain pan.

OPTIONS

IPH	Noise insulation (M1*).
FLA	Suction filters (M1*).
CFA	Suction filter box (M1*).
ECB	Wooden crate packaging.

* M1: Non-flammable.



COILS

- # Aluminium fins with 4.23 or 6.35 mm spacing.
- # Combined with copper tubes, the coils are very efficient and compact.
- # Versions available:
 - Multi-refrigerant HFCs.
 - CO2 (50 bar).
 - WCO (glycol water, coolant).

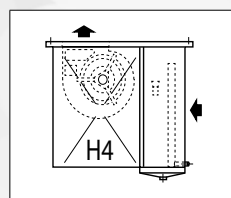
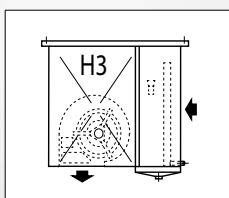
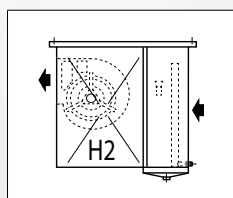
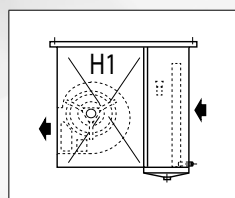
OPTIONS

HGT	Hot gases (coil and drain pan).
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Select your coil treatment to extend your unit cooler's lifespan!
Contact us.

PRODUCT ADVANTAGES

- # Can be installed on the floor or ceiling.
- # 4 blowing positions (H1 to H4) can be selected; can be easily changed at a later date.



VENTILATION

- # Double inlet direct drive centrifugal motor fans.
- # "Power/noise level" pair can be optimized by adding an optional variable speed drive, available factory-fitted or as a kit (VVU/VVK).
- # Enclosed motors with built-in thermal protection, IP 54 class F, designed for environments from -40 °C to +70 °C.
- # Pressure available up to 200 pascal.
- # Speed of rotation 1,000 rpm.

OPTIONS

CMU	Factory motor wiring.	
VG	Textile duct shell.	KIT TO INSTALL
VP	Blower louvred shutters.	KIT TO INSTALL CONTACT US
VV	Variable speed drive.	CONTACT US
VVK	Variable speed drive.	KIT TO INSTALL CONTACT US



DEFROST

OPTIONS

EIU	Light electric defrost.	
HGB	Hot gas defrost (coil only).	CONTACT US

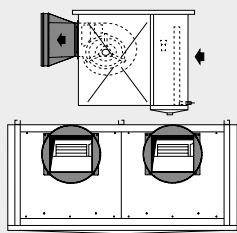
OPTION APPLICATIONS

Application requiring the installation of a textile duct

VG

Circular shell for connection of a textile duct (duct not supplied).

- diameter 400 mm (models 831 | 1622 | 2393)
- diameter 550 mm (models 1591 | 3162 | 4693 | 6294)



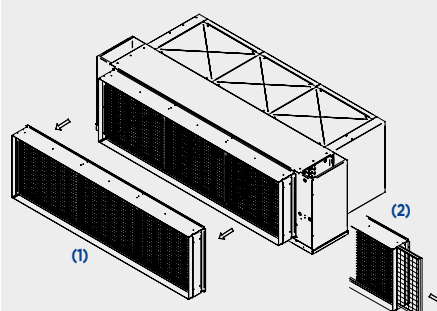
Air filtration and duct on suction

FLA

Gravimetric air filter on suction.

CFA (1)

Box for connecting a suction duct; the filter can be removed from the side of the box for easy maintenance (2).



Power, adapted noise level and thermal insulation

VVU / VVK

Voltage variation variable speed drive. Provides acoustic comfort at low and medium speeds when staff are present.



IPH

10 mm thick insulation to attenuate vibrations and provide thermal insulation of the device limiting the effects of condensation.

NCP^(A) 831^(B) H3^(C)

(A) Fin spacing: **NCP** = 4.23 mm (positive)
NCN = 6.35 mm (negative)

(B) Model

(C) Air direction

The NC is available with CO₂,
HFCs and glycol water.
For more information, please
consult our software.

			NCP  4,23 mm							
100 Pa (1)	CONDITIONS	REFRIGERANTS	NCP ...	831	1622	1591	2393	3162	4693	6294
	SC1 (2)	CO ₂ - 50 bar (3)	kW	12,1	23,6	23,4	35,2	44,1	68,9	88,1
		R449A	kW	11,6	22,3	22,3	32,8	45,0	66,9	87,7
		R404A	kW	10,9	21,1	21,8	31,0	42,3	62,9	84,3
	SC2 (2)	CO ₂ - 50 bar (3)	kW	8,2	16,2	16,0	24,2	29,7	47,3	59,6
		R449A	kW	7,5	14,6	15,1	21,5	29,7	43,9	59,2
		R404A	kW	7,1	13,9	14,5	20,4	28,2	41,7	56,2
Airflow		m ³ /h	3200	6310	6680	9420	13270	19870	26460	
Acoustics	Lp 4 m (4)	dB(A)	44	47	55	49	58	59	61	
	Lw	dB(A)	74	77	85	79	88	89	91	
150 Pa (1)	CONDITIONS	REFRIGERANTS	NCP ...	831	1622	1591	2393	3162	4693	6294
	SC1 (2)	CO ₂ - 50 bar (3)	kW	10,8	21,2	22,5	31,5	42,5	66,1	84,8
		R449A	kW	10,2	19,8	21,5	29,1	42,6	64,1	84,4
		R404A	kW	9,6	18,6	20,8	27,3	40,5	60,3	80,7
	SC2 (2)	CO ₂ - 50 bar (3)	kW	7,4	14,6	15,4	21,8	28,7	45,5	57,4
		R449A	kW	6,7	12,9	14,6	19,0	28,5	42,3	57,0
		R404A	kW	6,3	12,3	14,0	18,1	27,1	40,1	54,1
Airflow		m ³ /h	2740	5400	6280	8060	12460	18640	24820	
Acoustics	Lp 4 m (4)	dB(A)	42	45	53	46	56	58	59	
	Lw	dB(A)	72	75	83	76	86	88	89	
200 Pa (1)	CONDITIONS	REFRIGERANTS	NCP ...	831	1622	1591	2393	3162	4693	6294
	SC1 (2)	CO ₂ - 50 bar (3)	kW	-	-	21,2	-	40,2	62,2	80,1
		R449A	kW	-	-	20,3	-	40,3	60,2	79,8
		R404A	kW	-	-	19,6	-	38,1	56,7	76,0
	SC2 (2)	CO ₂ - 50 bar (3)	kW	-	-	14,5	-	27,2	42,8	54,4
		R449A	kW	-	-	13,8	-	26,9	39,9	53,7
		R404A	kW	-	-	13,1	-	25,6	37,9	51,0
Airflow		m ³ /h	-	-	5740	-	11380	17000	22630	
Acoustics	Lp 4 m (4)	dB(A)	-	-	51	-	54	56	57	
	Lw	dB(A)	-	-	81	-	84	86	87	
			NCP ...	831	1622	1591	2393	3162	4693	6294
Surface area			m ²	47,0	86,6	75,2	126,2	142,0	208,8	275,6
Circuit volume			dm ³	9,1	16,8	14,5	24,4	27,5	40,4	53,3
			Nb	1	2	1	3	2	3	4
Turbine	230V/1/50 Hz	W	670	1340	-	2010	-	-	-	
		A max (5)	2,9	5,8	-	8,7	-	-	-	
	230-400V/3/50 Hz	W	-	-	1300	-	2600	3900	5200	
		A max (5)	-	-	3,4	-	6,8	10,2	13,6	
Connections	Inlet	Ø	5/8"	5/8"	7/8"	7/8"	7/8"	1"1/8	1"1/8	
R404A	Outlet	Ø	7/8"	1"1/8	1"1/8	1"3/8	1"3/8	1"5/8	2"1/8	
Net weight			kg	88	151	118	200	241	305	463

(1) Additional available air pressure in pascals.

(2) Standard conditions:

SC1 / +10 °C (air inlet temp.) / 0 °C (evaporating temp.) / DT1 = 10K

SC2 / 0 °C (air inlet temp.) / -8 °C (evaporating temp.) / DT1 = 8K

(3) Operating pressure - Specific coil - Connection diameters to be defined when ordering.

(4) Average sound pressure level in dB(A) calculated at 4 m, level with the turbines, in a free field over a reflecting plane, given as an indication only.

(5) Adjustment of overload protection. For air temperatures "ti" other than +20 °C, multiply the intensities by the ratio 293/(273 + "ti")

to obtain the approximate value of the intensity after the room has been brought up to temperature.

R404A is a refrigerant only available for non-EU markets. Not compatible with F-Gas.

NCP^(A) 831^(B) H3^(C)

(A) Fin spacing: **NCP** = 4.23 mm (positive)
NCN = 6.35 mm (negative)

(B) Model

(C) Air direction

The NC is available with CO₂,
HFCs and glycol water.
For more information, please
consult our software.

100 Pa (1)	CONDITIONS	REFRIGERANTS	NCN ...
	SC2 (2)	CO₂ - 50 bar (3)	kW
		R449A	kW
		R404A	kW
	Airflow		m ³ /h
	Acoustics	Lp 4 m (4) Lw	dB(A) dB(A)

150 Pa (1)	CONDITIONS	REFRIGERANTS	NCN ...
	SC2 (2)	CO₂ - 50 bar (3)	kW
		R449A	kW
		R404A	kW
	Airflow		m ³ /h
	Acoustics	Lp 4 m (4) Lw	dB(A) dB(A)

200 Pa (1)	CONDITIONS	REFRIGERANTS	NCN ...
	SC2 (2)	CO₂ - 50 bar (3)	kW
		R449A	kW
		R404A	kW
	Airflow		m ³ /h
	Acoustics	Lp 4 m (4) Lw	dB(A) dB(A)

		NCN ...
Surface area		m ²
Circuit volume		dm ³
Turbine	230V/1/50 Hz	Nb
		W
	230-400V/3/50 Hz	A max (5)
		W
Electric defrost EIU (6)	Coil + drain pan	Nb
	230-400V/3/50 Hz	W total
		A total
Connections	Inlet	Ø
	Outlet	Ø
Net weight		kg

NCN

 **6,35 mm**

831	1622	1591	2393	3162	4693	6294
7,2	14,1	13,6	20,9	25,8	40,0	51,3
6,5	12,5	12,6	18,4	24,7	36,9	48,5
6,2	12,0	12,0	17,7	23,8	35,4	47,4
3270	6470	6770	9680	13490	20200	26910
44	47	55	49	58	60	61
74	77	85	79	88	90	91

831	1622	1591	2393	3162	4693	6294
6,6	12,8	13,2	19,0	25,0	38,7	49,7
5,8	11,2	12,2	16,5	23,9	35,8	47,2
5,5	10,7	11,6	15,7	23,0	34,2	45,7
2810	5560	6390	8310	12720	19040	25360
42	45	54	47	57	58	59
72	75	84	77	87	88	89

831	1622	1591	2393	3162	4693	6294
-	-	12,6	-	23,8	36,8	47,4
-	-	11,6	-	22,8	34,1	44,7
-	-	11,0	-	21,9	32,5	43,5
-	-	5880	-	11680	17470	23260
-	-	52	-	55	56	58
-	-	82	-	85	86	88

831	1622	1591	2393	3162	4693	6294
32,3	59,6	51,7	86,8	97,7	143,6	189,6
9,1	16,8	14,5	24,4	27,5	40,4	53,3
1	2	1	3	2	3	4
670	1340	-	2010	-	-	-
2,9	5,8	-	8,7	-	-	-
-	-	1300	-	2600	3900	5200
-	-	3,4	-	6,8	10,2	13,6
5+1	5+1	5+1	5+1	5+1	5+1	5+1
3900	6600	5400	9600	9600	17100	22800
9.8/5.6	16.6/9.5	13.6/7.8	24.1/13.9	24.1/13.9	42.9/24.7	57.2/32.9
5/8"	5/8"	5/8"	7/8"	7/8"	1"1/8	1"1/8
7/8"	1"1/8	1"1/8	1"3/8	1"3/8	1"5/8	2"1/8
88	151	118	200	241	305	463

(1) Additional available air pressure in pascals.

(2) Standard conditions:

SC1 / +10 °C (air inlet temp.) / 0 °C (evaporating temp.) / DT1 = 10K

SC2 / 0 °C (air inlet temp.) / -8 °C (evaporating temp.) / DT1 = 8K

(3) Operating pressure - Specific coil - Connection diameters to be defined when ordering.

(4) Average sound pressure level in dB(A) calculated at 4 m, level with the turbines, in a free field over a reflecting plane, given as an indication only.

(5) Adjustment of overload protection. For air temperatures "ti" other than +20 °C, multiply the intensities by the ratio 293/(273 + "ti")

to obtain the approximate value of the intensity after the room has been brought up to temperature.

(6) Electric defrost option.

R404A is a refrigerant only available for non-EU markets (not compatible with F-Gas).

Technical specifications obtained with the VVU or VVK speed variation option:



VVU and VVK: 831 - 1622 - 2393

VVU Factory-assembled variable speed drive.

VVK Variable speed drive kit sent with the selected unit cooler.

- IP54 enclosure.
- Single-phase electronic voltage regulator.
- Potentiometer control.
- One variable voltage regulator per motorized fan.
- Adjustment of minimum voltage.
- Wiring diagram.



VVK: 1591 - 3162 - 4693 - 6294

This option is a kit sent with the selected unit cooler.

- Electromechanical voltage regulator.
- Manual rotary switch.
- Five staggered rotation speeds.
- Wiring diagram.

NCP

 **4,23 mm**

CONDITIONS	SPEEDS	NCP ...
SC1 (2) R404A	high speed	kW
	medium speed	kW
	low speed	kW
SC2 (2) R404A	high speed	kW
	medium speed	kW
	low speed	kW
Airflow	high speed	m ³ /h
	medium speed	m ³ /h
	low speed	m ³ /h
Acoustics Lp 4 m (3)	high speed	dB(A)
	medium speed	dB(A)
	low speed	dB(A)

831	1622	1591	2393	3162	4693	6294
10,9	21,1	24,9	31,0	47,9	70,7	95,0
10,2	19,7	23,6	29,0	45,4	67,2	90,2
8,6	17,3	20,7	26,0	40,0	59,0	79,6
7,1	13,9	16,5	20,4	31,7	46,8	63,2
6,7	13,0	15,7	19,1	30,1	44,5	60,0
5,7	11,4	13,7	17,1	26,5	39,1	53,0
3200	6310	8190	9420	16150	24100	32040
2890	5680	7460	8450	14710	21940	29170
2270	4630	6020	7150	11810	17630	23670
44	47	59	49	61	63	64
40	43	55	45	57	59	60
32	35	50	37	53	55	56

CONDITIONS	SPEEDS	NCP ...
SC1 (2) R404A	high speed	kW
	medium speed	kW
	low speed	kW
SC2 (2) R404A	high speed	kW
	medium speed	kW
	low speed	kW
Airflow	high speed	m ³ /h
	medium speed	m ³ /h
	low speed	m ³ /h
Acoustics Lp 4 m (3)	high speed	dB(A)
	medium speed	dB(A)
	low speed	dB(A)

831	1622	1591	2393	3162	4693	6294
9,6	18,6	23,7	27,3	45,7	67,6	90,9
9,3	18,0	22,4	26,5	43,6	64,5	86,5
8,0	16,01	20,3	24,1	39,2	58,2	78,0
6,3	12,3	15,8	18,1	30,3	44,7	60,5
6,2	11,9	15,0	17,6	28,9	42,6	57,6
5,3	10,6	13,5	16,0	26,0	38,5	51,9
2740	5400	7610	8060	14990	22350	29720
2640	5180	6990	7720	13770	20550	27330
2110	4320	5890	6720	11580	17300	23010
42	45	57	46	60	62	62
36	38	51	39	54	56	56
29	32	46	33	49	51	52

CONDITIONS	SPEEDS	NCP ...
SC1 (2) R404A	high speed	kW
	medium speed	kW
	low speed	kW
SC2 (2) R404A	high speed	kW
	medium speed	kW
	low speed	kW
Airflow	high speed	m ³ /h
	medium speed	m ³ /h
	low speed	m ³ /h
Acoustics Lp 4 m (3)	high speed	dB(A)
	medium speed	dB(A)
	low speed	dB(A)

831	1622	1591	2393	3162	4693	6294
-	-	22,4	-	43,1	63,9	85,6
-	-	21,3	-	41,2	61,1	82,8
-	-	19,7	-	37,7	55,7	75,5
-	-	14,9	-	28,7	42,4	57,2
-	-	14,2	-	27,4	40,5	55,3
-	-	13,1	-	25,1	37,0	50,4
-	-	6950	-	13670	20390	27100
-	-	6470	-	12690	18910	25590
-	-	5610	-	10980	16310	22080
-	-	55	-	58	60	61
-	-	47	-	50	52	53
-	-	45	-	48	50	51

R404A is a refrigerant only available for non-EU markets. Not compatible with F-Gas.

Technical specifications obtained with the VVU or VVK speed variation option:



VVU and VVK: 831 - 1622 - 2393

VVU Factory-assembled variable speed drive.

VVK Variable speed drive kit sent with the selected unit cooler.

- IP54 enclosure.
- Single-phase electronic voltage regulator.
- Potentiometer control.
- One variable voltage regulator per motorized fan.
- Adjustment of minimum voltage.
- Wiring diagram.



VVK: 1591 - 3162 - 4693 - 6294

This option is a kit sent with the selected unit cooler.

- Electromechanical voltage regulator.
- Manual rotary switch.
- Five staggered rotation speeds.
- Wiring diagram.

NCN

 **6,35 mm**

100 Pa (1)

CONDITIONS	SPEEDS	NCN ...
SC2 (2) R404A	high speed	kW
	medium speed	kW
	low speed	kW
Airflow	high speed	m ³ /h
	medium speed	m ³ /h
	low speed	m ³ /h
Acoustics Lp 4 m (3)	high speed	dB(A)
	medium speed	dB(A)
	low speed	dB(A)

831	1622	1591	2393	3162	4693	6294
6,2	12,0	13,5	17,7	26,8	39,8	53,3
5,8	11,3	12,8	16,7	25,4	38,0	50,8
5,0	9,7	11,5	14,6	22,7	33,2	45,4
3270	6470	8450	9680	16740	25020	33290
2960	5860	7630	8740	15110	22910	30480
2300	4550	6220	7030	12320	17970	24850
44	47	59	49	62	64	65
40	43	55	45	58	60	61
32	35	50	37	53	56	57

150 Pa (1)

CONDITIONS	SPEEDS	NCN ...
SC2 (2) R404A	high speed	kW
	medium speed	kW
	low speed	kW
Airflow	high speed	m ³ /h
	medium speed	m ³ /h
	low speed	m ³ /h
Acoustics Lp 4 m (3)	high speed	dB(A)
	medium speed	dB(A)
	low speed	dB(A)

831	1622	1591	2393	3162	4693	6294
5,5	10,7	13,1	15,7	25,8	38,3	51,3
5,3	10,1	12,01	15,1	23,5	35,4	47,3
4,3	8,5	10,2	12,7	19,6	29,5	39,5
2810	5560	7910	8310	15630	23340	31050
2430	4630	7080	6980	14100	21130	28180
1930	3940	6430	5980	12880	19380	25880
42	45	58	47	61	63	63
36	38	52	39	55	57	57
29	32	47	34	50	52	53

200 Pa (1)

CONDITIONS	SPEEDS	NCN ...
SC2 (2) R404A	high speed	kW
	medium speed	kW
	low speed	kW
Airflow	high speed	m ³ /h
	medium speed	m ³ /h
	low speed	m ³ /h
Acoustics Lp 4 m (3)	high speed	dB(A)
	medium speed	dB(A)
	low speed	dB(A)

831	1622	1591	2393	3162	4693	6294
-	-	12,4	-	24,6	36,5	48,8
-	-	11,9	-	23,3	34,8	47,3
-	-	11,0	-	21,6	32,2	43,0
-	-	7240	-	14290	21330	28380
-	-	6710	-	13110	19560	26730
-	-	5820	-	11430	17060	22700
-	-	56	-	59	61	62
-	-	48	-	51	53	54
-	-	46	-	49	51	52

(1) Additional available air pressure in pascals.

(2) Standard conditions:

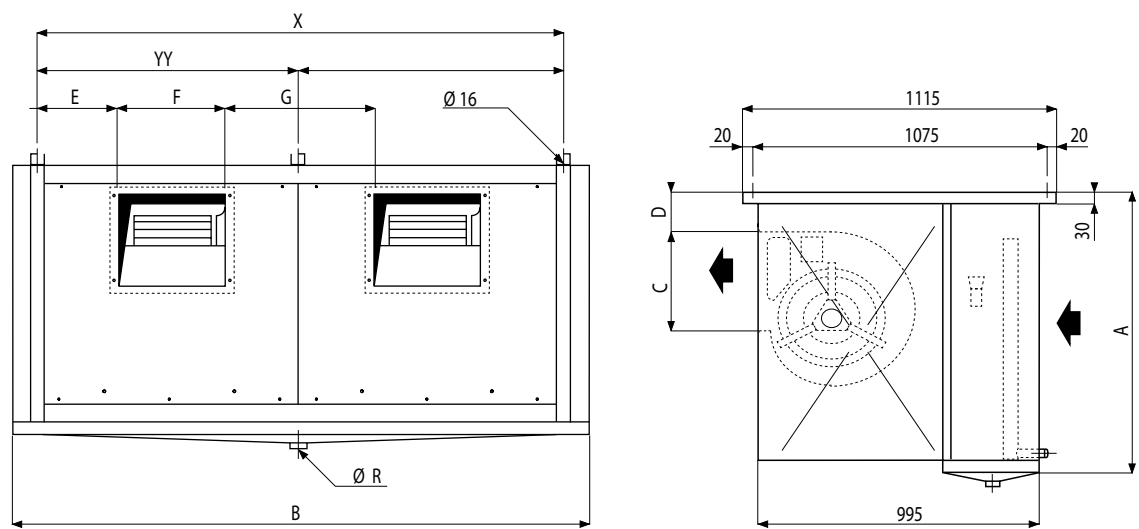
SC1 / +10 °C (air inlet temp.) / 0 °C (evaporating temp.) / DT1 = 10K

SC2 / 0 °C (air inlet temp.) / -8 °C (evaporating temp.) / DT1 = 8K

(3) Average sound pressure level in dB(A) calculated at 4 m, level with the turbines, in a free field over a reflecting plane, given as an indication only.

R404A is a refrigerant only available for non-EU markets (not compatible with F-Gas).

NC



		831	1622	1591	2393	3162	4693	6294
A	mm	760	760	870	765	875	880	880
B	mm	1170	1810	1490	2450	2450	3410	4370
C	mm	290	290	342	290	342	342	342
D	mm	152	152	197	152	197	197	197
E	mm	234	234	363	234	363	363	363
F	mm	331	331	395	331	395	395	395
G	mm	-	306	-	306	564	564	564
X	mm	790	1430	1110	2070	2070	3030	3990
Y	mm	-	-	-	-	-	-	1995
Ø R	mm	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"

NC | Blower positions

