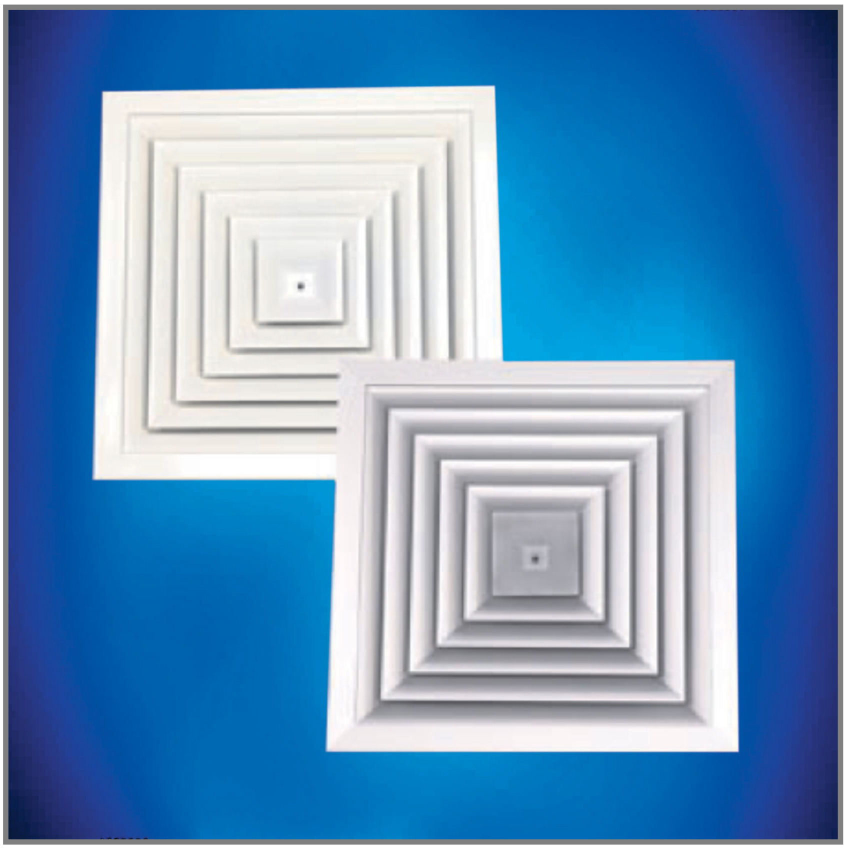
RNT1

FOUR-WAY CEILING DIFFUSER



selection assistance

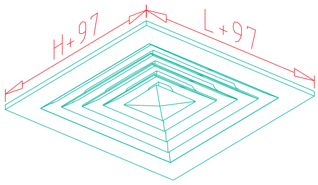
GRYFIT AIR

ADVANTAGES

- Aesthetic design
- Optimal usage of the Coanda effect
- High quality product

in the libraries

Fluid Desk
Building Engineering Solutions



parametric libraries

GRYFIT CAD

AIR DIFFUSION

FUNCTION / APPLICATION

RNT1 diffusers are used for air supply or exhaust in ventilation and air-conditioning systems. They may be installed in the rooms’ ceilings or directly in ventilation ducts.

DESCRIPTION

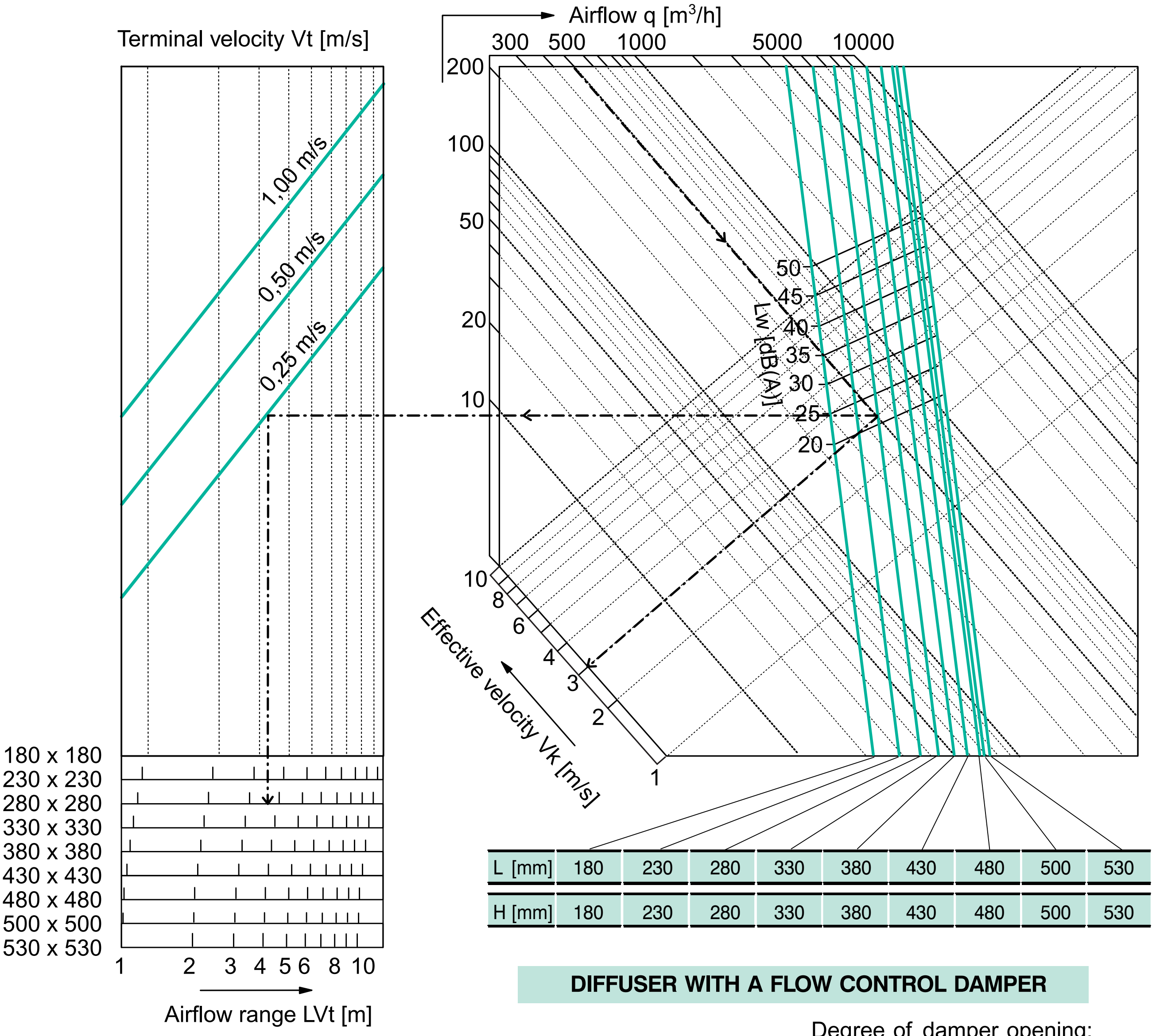
RNT1 diffusers are fitted with fixed blades which are used for four-way air distribution. This type of diffuser is made of steel in RAL 9010 colour (white). RNT1-FP version is designed for direct installation in a false ceiling construction. There is available option of coating the surface with paint in any other RAL colour.

INSTALLATION

Standard installation of the diffuser is carried out with the use of the central fixing screw which is fitted with a covering plug. To install the diffuser a mounting bar or a plenum box are need to be used.

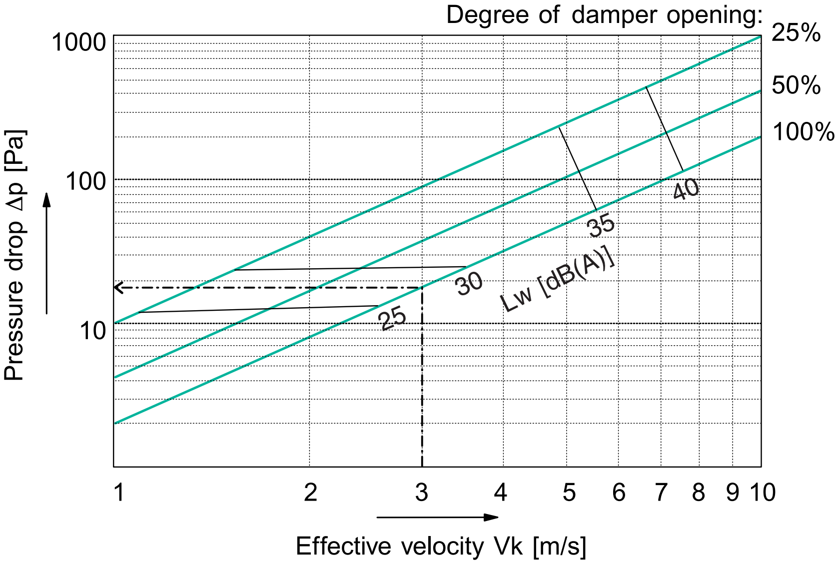
ACCESSORIES

- MZN damper made of steel painted with RAL 9005 colour (black), fixed on the diffuser
- DN or DNL plenum box made of galvanised steel, with a side connection, insulated as an optional extra
- DM plenum box made of galvanised steel, with a top connection, insulated as an optional extra
- VFP damper made of galvanised steel and fixed in the connection of the plenum box
- FH-R mounting bar made of galvanised steel



L [mm]	180	230	280	330	380	430	480	500	530
H [mm]	180	230	280	330	380	430	480	500	530

DIFFUSER WITH A FLOW CONTROL DAMPER



Correction factor ΔLw depending on the diameter of the diffuser:

LwA = Lw + ΔLw

L x H	180	230	280	330
ΔLw	-5		0	

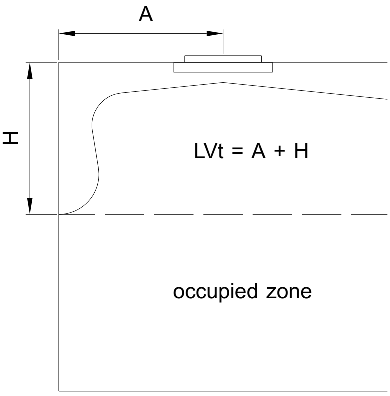
L x H	380	430	480	530
ΔLw	+5		+8	

Example:

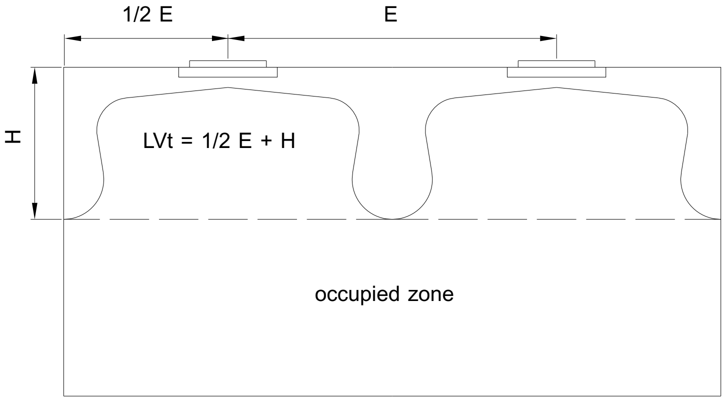
Airflow Q	= 500	[m³/h]	Sound power level Lw	= 22 + 0	[dB(A)]
Diffuser dimensions	= 280x280	[mm]	Pressure drop ΔP	= 18	[Pa]
Effective velocity Vk	= 3,0	[m/s]	Airflow range LVt for Vt = 0,25 m/s	= 3,6	[m]

AIRFLOW RANGE OF RNT1 DIFFUSER

One diffuser



Two or more diffusers



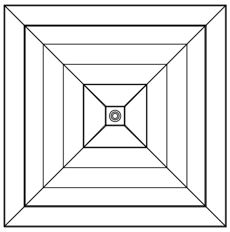
RNT1 DIFFUSERS USED IN SUPPLY VENTILATION

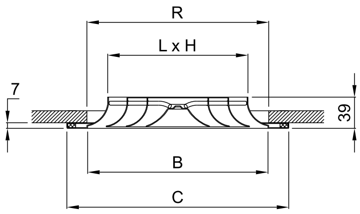
Airflow range LVt for Vt=0,25 m/s		2 m				3 m				4 m				5 m				6 m				8 m				10 m			
Airflow range LVt for Vt=0,50 m/s		1 m				1,5 m				2 m				2,5 m				3 m				4 m				5 m			
Airflow range LVt for Vt=1,00 m/s		0,5 m				0,8 m				1 m				1,3 m				1,5 m				2 m				2,5 m			
L x H [mm]		Q [m³/h]	Vk [m/s]	Δpt [Pa]	Lw [dB(A)]	Q [m³/h]	Vk [m/s]	Δpt [Pa]	Lw [dB(A)]	Q [m³/h]	Vk [m/s]	Δpt [Pa]	Lw [dB(A)]	Q [m³/h]	Vk [m/s]	Δpt [Pa]	Lw [dB(A)]	Q [m³/h]	Vk [m/s]	Δpt [Pa]	Lw [dB(A)]	Q [m³/h]	Vk [m/s]	Δpt [Pa]	Lw [dB(A)]	Q [m³/h]	Vk [m/s]	Δpt [Pa]	Lw [dB(A)]
180	**180**	191	2,5	13	<20	286	3,8	29	<20	381	5,1	51	25	477	6,3	80	30	572	7,6	116	34	763	10,1	206	40	953	12,7	321	45
230	**230**	237	2,0	8	<20	356	3,1	19	<20	474	4,1	33	22	593	5,1	52	27	711	6,1	75	31	948	8,2	133	37	1185	10,2	208	42
280	**280**	283	1,7	6	<20	424	2,6	13	<20	565	3,4	23	24	706	4,3	37	29	848	5,1	53	33	1130	6,8	94	40	1413	8,6	146	45
330	**330**	327	1,5	4	<20	491	2,2	10	<20	654	3,0	17	22	818	3,7	27	27	981	4,4	39	31	1308	5,9	70	38	1635	7,4	109	42
380	**380**	371	1,3	3	<20	556	2,0	8	<20	742	2,6	14	25	927	3,3	21	30	1113	3,9	31	34	1484	5,2	54	41	1855	6,5	85	46
430	**430**	414	1,2	3	<20	621	1,8	6	<20	828	2,3	11	24	1035	2,9	17	29	1242	3,5	25	33	1657	4,7	44	39	2071	5,8	68	44
480	**480**	457	1,1	2	<20	685	1,6	5	<20	913	2,1	9	25	1142	2,6	14	30	1370	3,2	20	34	1827	4,2	36	41	2284	5,3	56	46
530	**530**	499	1,0	2	<20	748	1,5	4	<20	998	1,9	8	24	1247	2,4	12	29	1497	2,9	17	33	1996	3,9	30	39	2495	4,8	47	44
500	**500***	474	1,0	2	<20	711	1,5	5	<20	947	2,0	8	25	1184	2,6	13	30	1421	3,1	19	34	1895	4,1	33	40	2369	5,1	52	45

* – special dimensions for a false ceiling construction
LVt – supplied airflow range
Q – airflow capacity
Vk – effective velocity of supplied airflow
Δpt – pressure drop
Lw – sound power level of the diffuser
Vt – terminal velocity of supplied airflow

DIMENSIONS AND INSTALLATION METHOD

DIMENSIONS





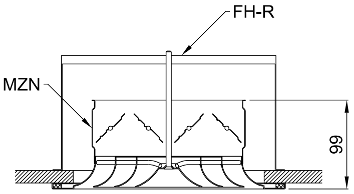
RNT1				DN(L)	DM
L x H	**B**	**C**	**R**	**NA***	**NA***
180	225	277	231	160	125
230	275	327	281	160	160
280	325	377	331	250	200
330	375	427	381	250	250
380	425	477	431	315	315
430	475	527	481	315	315
480	525	577	531	315	355
500	543	595	595	315	355
530	575	627	581	355	400

RNT1-FP			DN(L)	DM
L x H	**B**	**C**	**NA***	**NA***
180	225	595x595	160	125
230	275	595x595	160	160
280	325	595x595	250	200
330	375	595x595	250	250
380	425	595x595	315	315
430	475	595x595	315	315
480	525	595x595	315	355

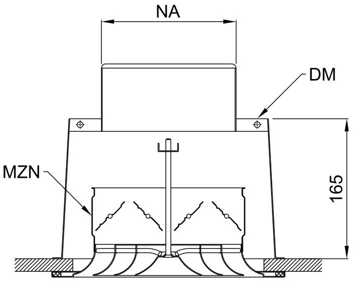
* Standard diameters of the connections. There is available option to order a plenum box with connection which is smaller than standard connection diameter

INSTALLATION

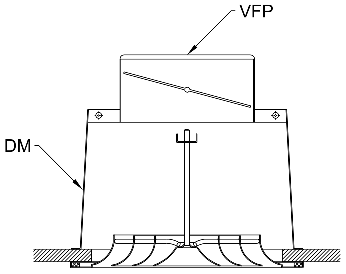
Installation of the diffuser is carried out with the use of M6 central fixing screw with a covering plug.



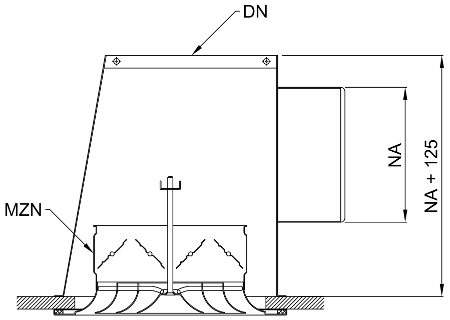
Installation in a false ceiling construction with the use of FH-R mounting bar



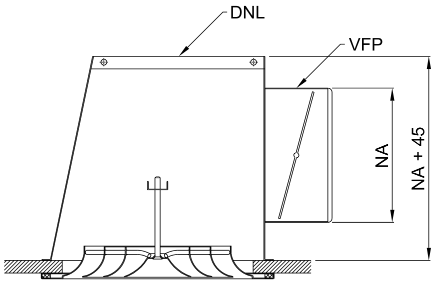
Installation with the use of DM plenum box with top connection



Installation with the use of DM plenum box with VFP damper



Installation with the use of DN plenum box with side connection



Installation with the use of DNL plenum box with VFP damper

Order key:

RNT1 | 180x180 | RAL 9010 + DNL + VFP

Diffuser type – RNT1
Diffuser dimensions – 180x180
Colour of the diffuser – RAL 9010
Plenum box – DNL
Damper – VFP

Desing changes reserved.. GRYFIT air handling intelligence - RNT1 - 10.12 - ENG