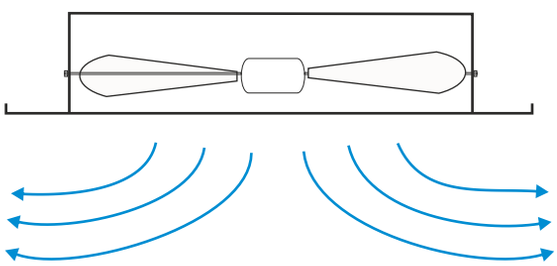
Round swirl diffuser NWO-12

Description and application

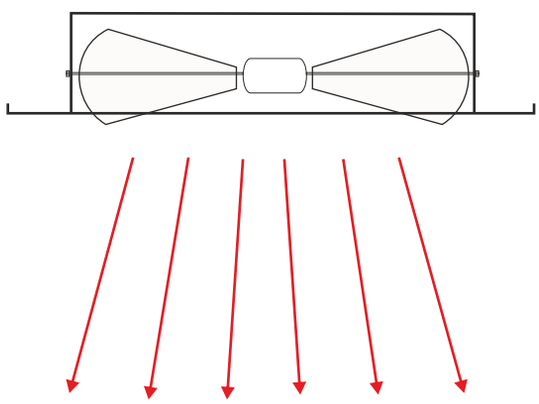
Round swirl diffusers NWO-12, with the function of changing the direction of the ventilation, willingly used in the industry (production halls) and wherever to increase the level of comfort mentions a large amount of air. They have also the use in public buildings such as restaurants, conference rooms and hospitals. Diffusers are mounted in conjunction with plenum box or directly on the ventilation ducts in ceilings or directly under the ceiling. Change the direction of the flow of air from horizontal to vertical (pointing down), makes this diffuser especially useful in case the rapid heating-up (several times faster than in the case of horizontal ventilation) or efficient cooling-levels of airflow direction.

Changing the direction of the airflow is manually and individually for each blade.
With such a possibility diffuser NWO-12 can operate both in cooling function and heating.

A) cooling function



B) heating function

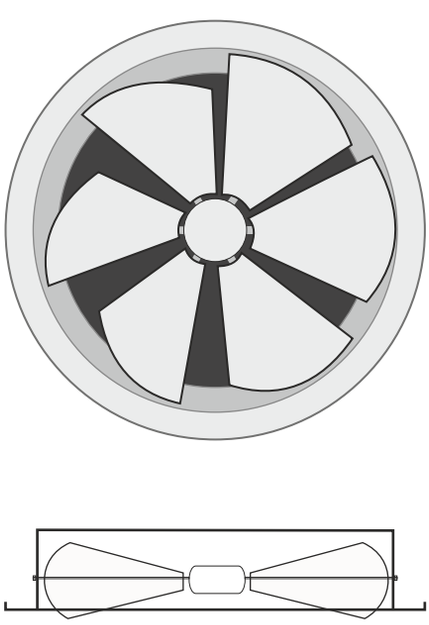


Diffusers have the Hygienic Certificate

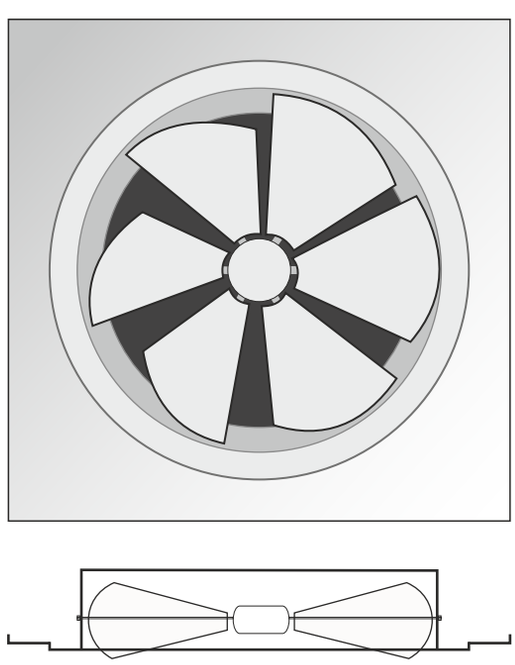
Material and workmanship

Diffusers are made in three material variants: galvanized steel, aluminum - powder coated or stainless steel (1.4301 or 1.4404). On customer request powder coated to any color from the RAL palette (standard RAL9016).
Ceiling diffusers NWO-11 can be equipped with modular plate, for example size 595x595mm adapted for installation in ceiling suspended. The manufacturer reserves the right to make technological changes.

1. Standard version - NWO-12

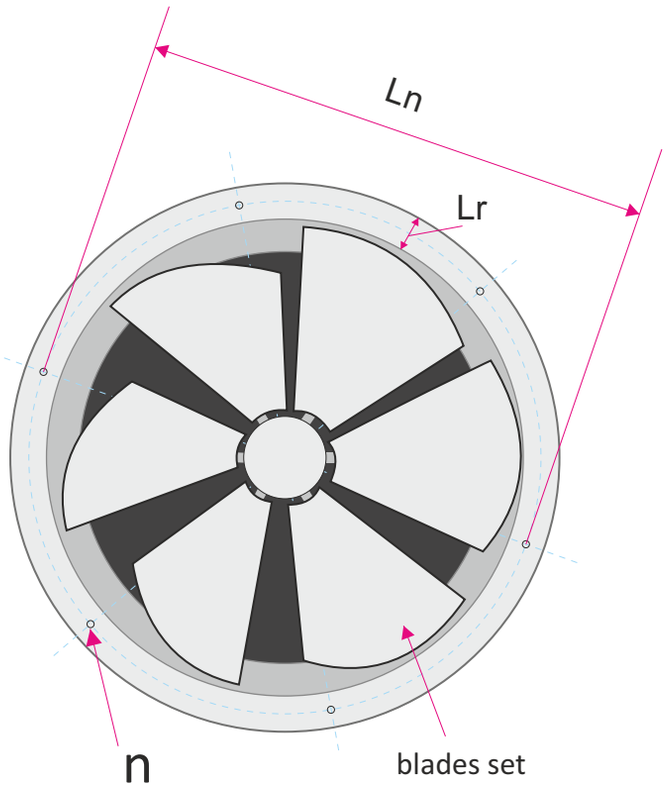


2. Version with modular plate - NWO-12/PM

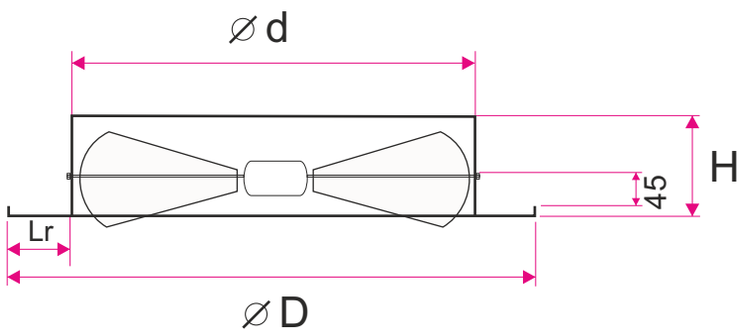


Round swirl diffuser NWO-12

Size



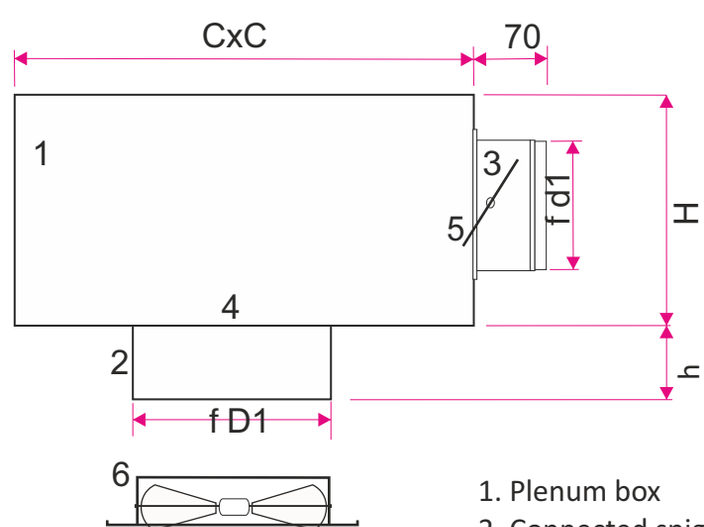
The height of the diffuser can be increase in the case of variant installation with crossbar **W2** (ok.+30mm)



Size	Lr	n	Ln	f d	f D	H
200	30	6	225	195	255	120
250	30	6	275	245	305	120
315	30	6	340	310	370	120
355	30	6	380	350	410	120
400	40	6	435	395	475	120
500	50	6	545	495	595	120
630	60	6	685	625	745	120
710	70	6	775	705	845	120
800	70	6	865	795	935	120
1000	90	6	1085	995	1175	120

Accessories: plenum box

Plenum box is made of galvanized steel. On request it can be equipped with a damper control onto the connected spigot.
The box can be lined on the inside or outside with rubber insulation or mineral wool.
The box can also include a measurement tip.



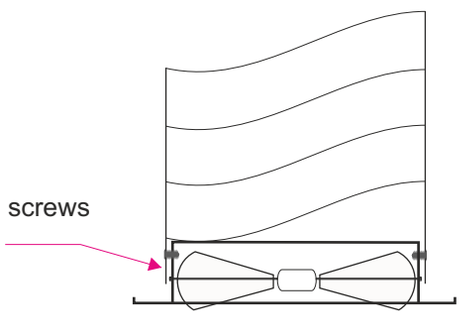
1. Plenum box
2. Connected spigot
3. Air intake spigot
4. Crossbar
5. Control damper
6. Round swirl diffuser NWO-12

Size	C	H	f d1	f D1
200	400	280	158	200
250	400	280	198	250
315	580	330	248	315
355	580	330	248	355
400	590	380	313	400
500	700	380	313	500
630	800	595	398	630
710	900	595	398	710
800	1000	595	398	800
1000	1250	595	398	1000

Methods of mounting

Swirl round diffusers NWO-12 can be fitted directly on a circular duct using self-drilling screws (variant W1), or using screws at the back of the diffuser mounted in the channel / box crosspiece (variant W2).
The diffuser can also be screwed to the ceiling through the mounting holes in the diffuser frame(variant of W3).

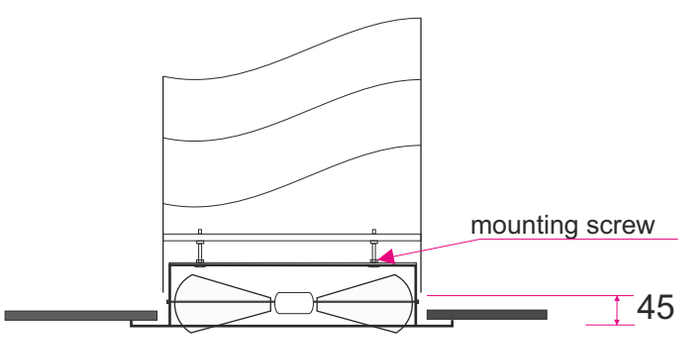
W1



ATTENTION
For dimensions of 710, 800, ... mounted in the ceiling, is used exclusively variant assembly W3 (mounting holes in the frame)

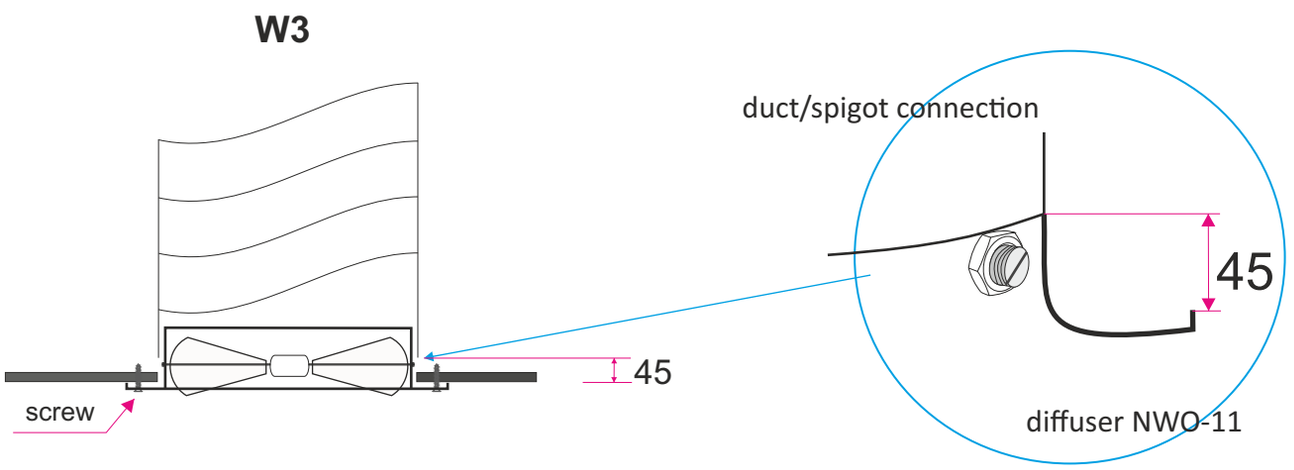
Mounting screws directly into the duct round or spigot connection plenum box.

W2



Screw mounting placed
inside the diffuser to a fastening strip
round duct or spigot connection plenum box .
Fixing is possible at max. the opening of the blades
the diffuser.

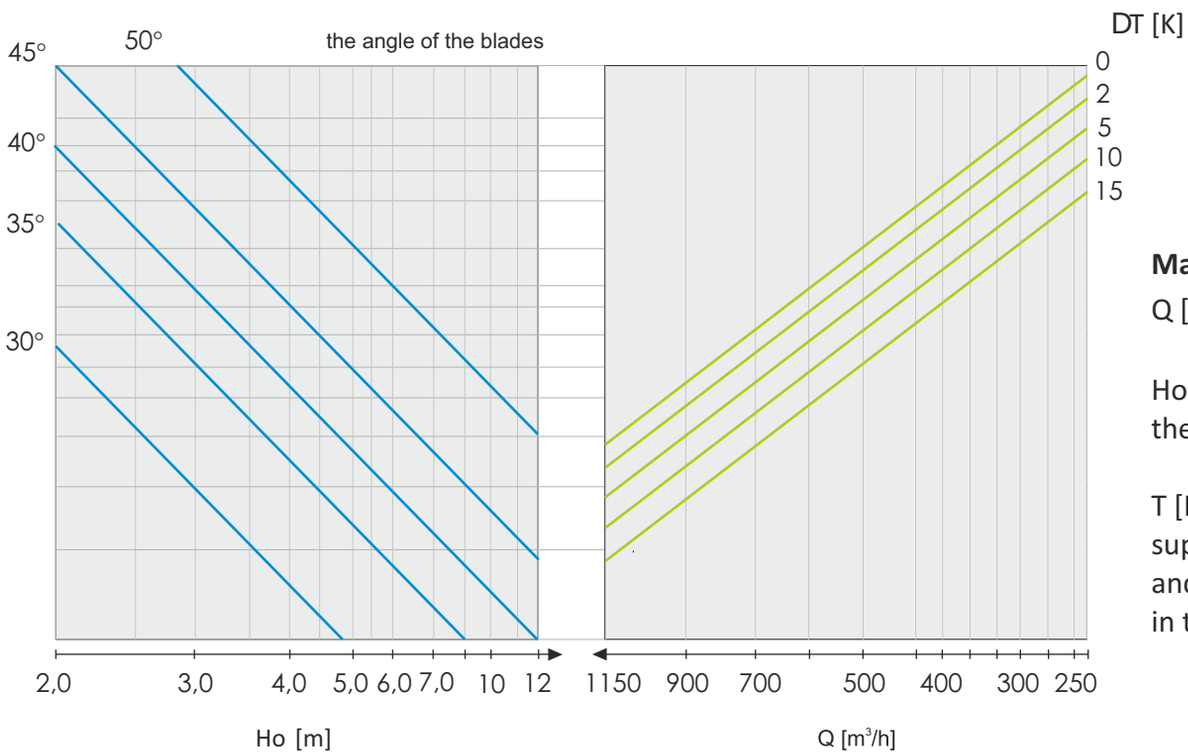
W3



Screw mounting
directly to the plate

The angle of the blades depending on the height of the room, temperature and air stream (cooling)

Round swirl diffuser NWO-12 Dn-250 COOLING



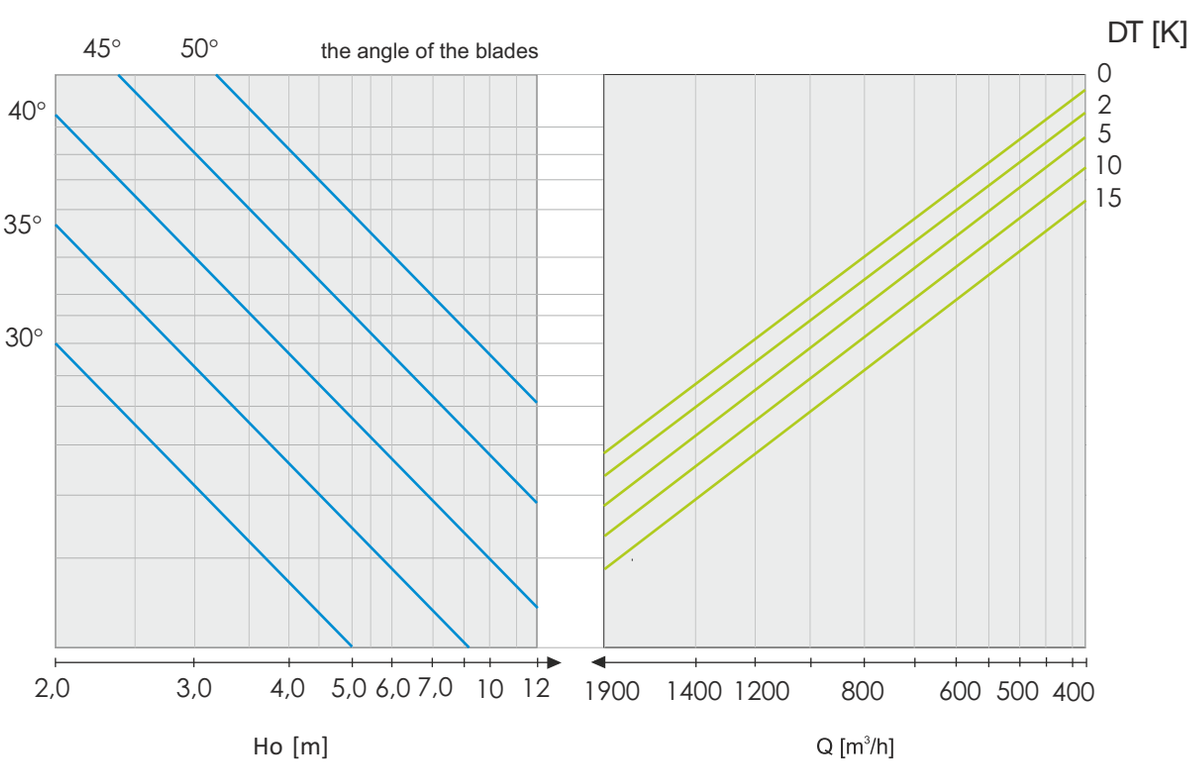
Marking:

Q [m³/h] - air volume flow

Ho [m] - the distance to the presence of people

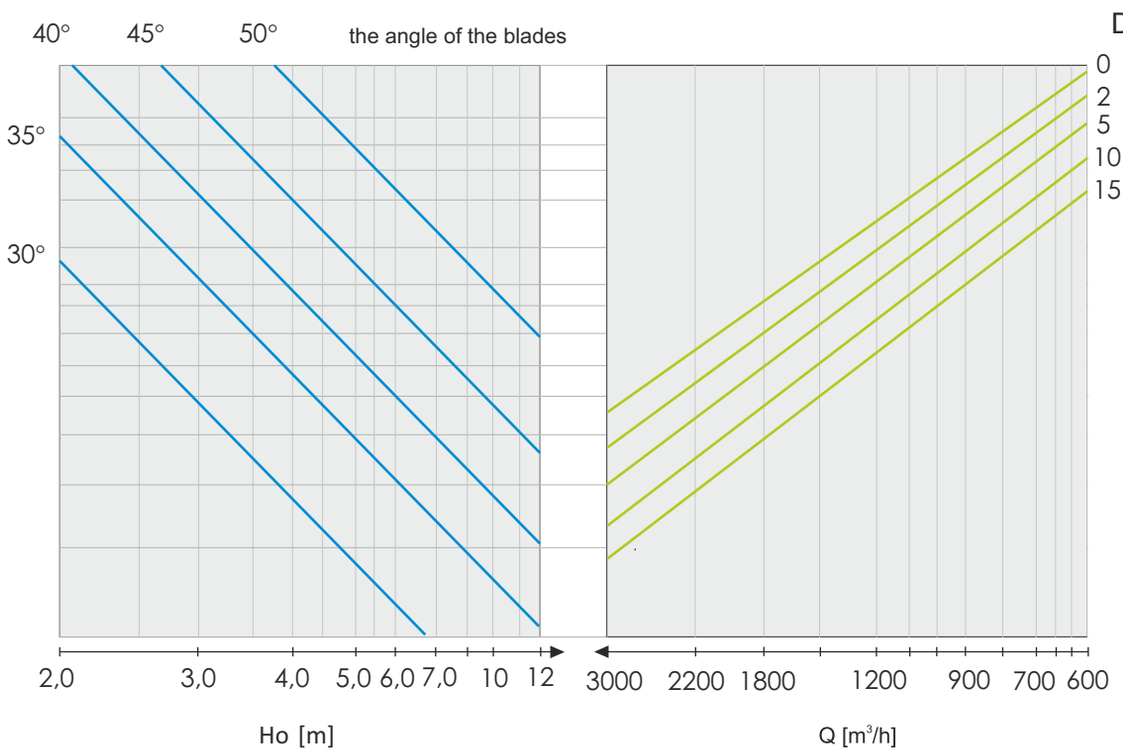
T [K] - difference between supply air temperature and the temperature in the room

Round swirl diffuser NWO-12 Dn-315 COOLING



The angle of the blades depending on the height of the room, temperature and air stream (cooling)

Round swirl diffuser NWO-12 Dn-400 COOLING



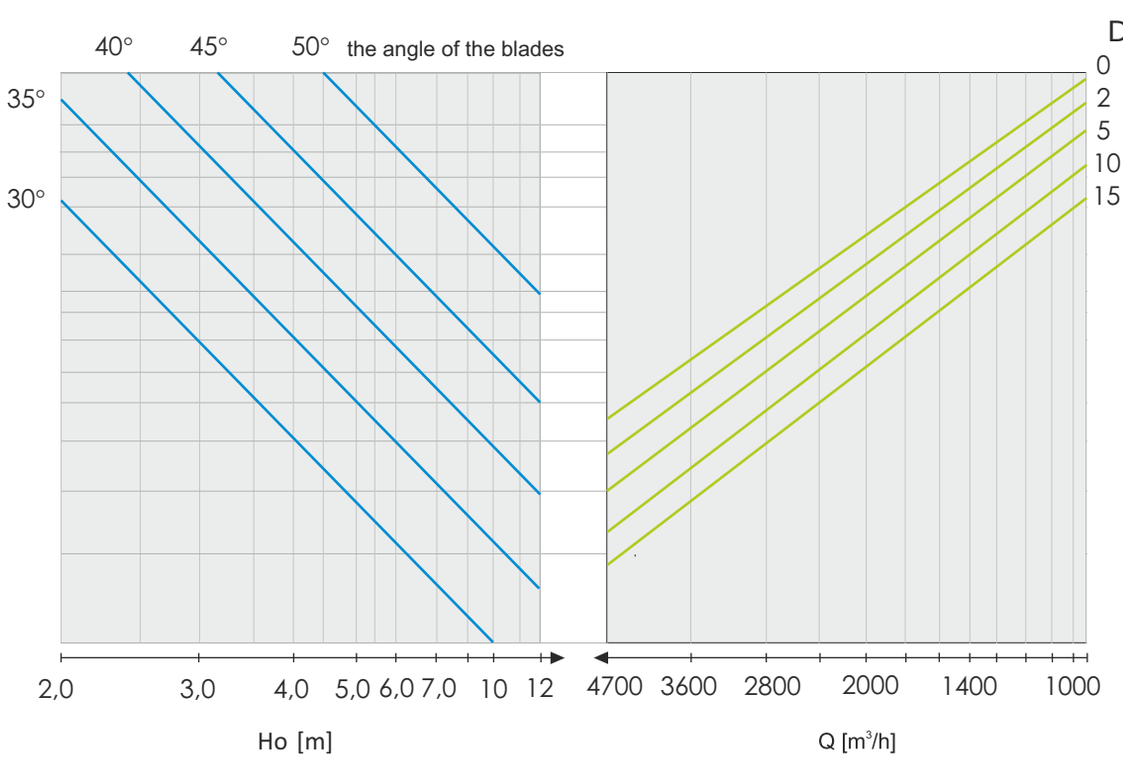
Marking:

Q [m³/h] - air volume flow

Ho [m.] - the distance to the presence of people

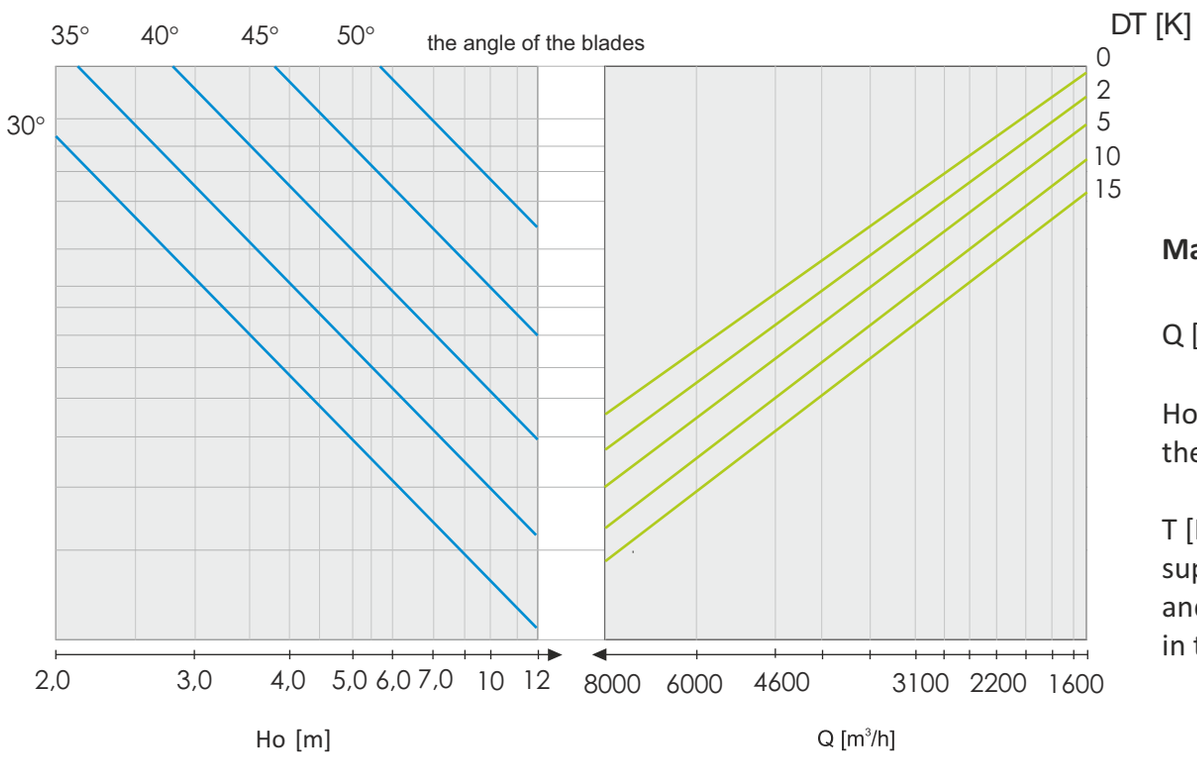
T [K] - difference between supply air temperature and the temperature in the room

Round swirl diffuser NWO-12 Dn-500 COOLING



The angle of the blades depending on the height of the room, temperature and air stream (cooling)

Round swirl diffuser NWO-12 Dn-630 COOLING



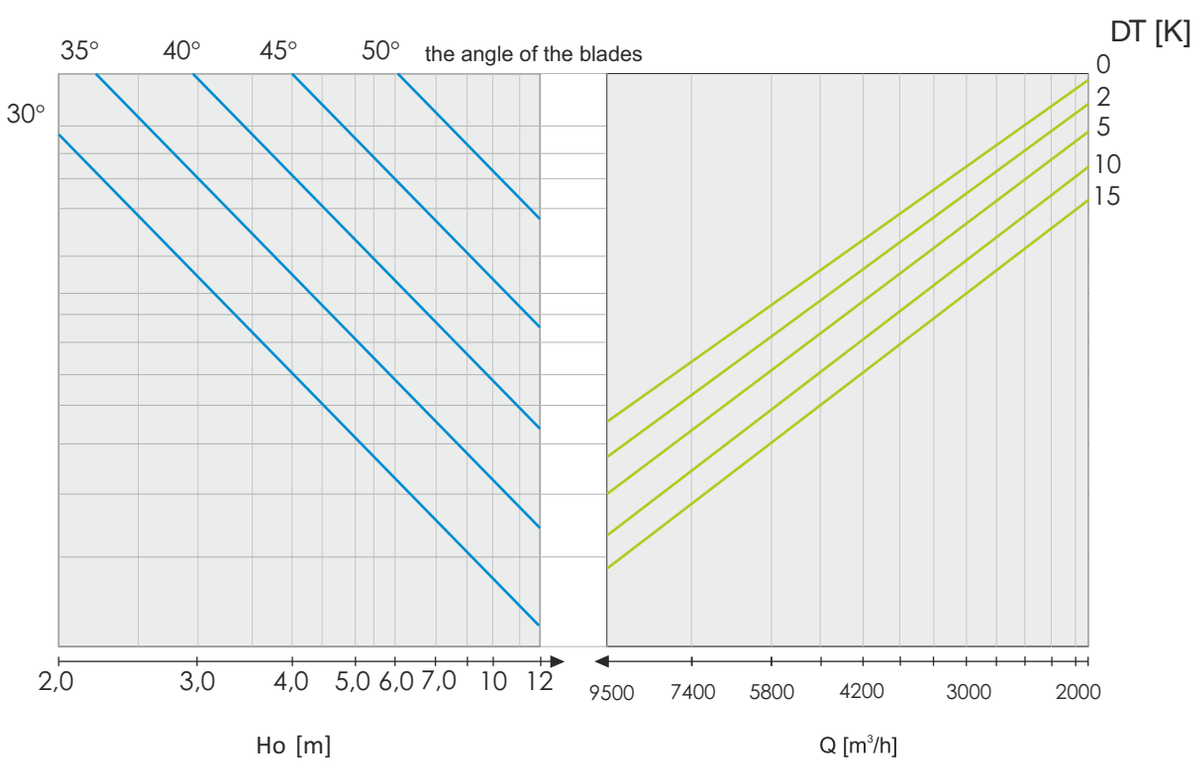
Marking:

Q [m³/h] - air volume flow

Ho [m.] - the distance to the presence of people

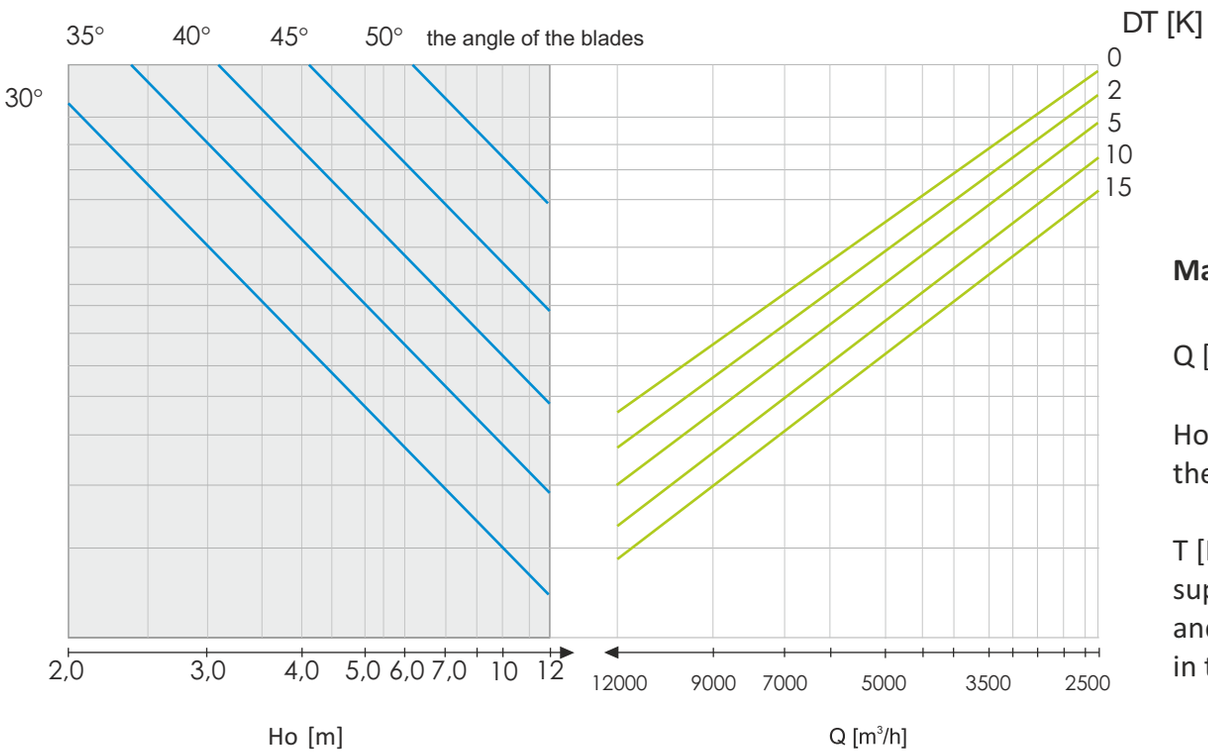
T [K] - difference between supply air temperature and the temperature in the room

Round swirl diffuser NWO-12 Dn-710 COOLING



The angle of the blades depending on the height of the room, temperature and air stream (cooling)

Round swirl diffuser NWO-12 Dn-800 COOLING



Marking:

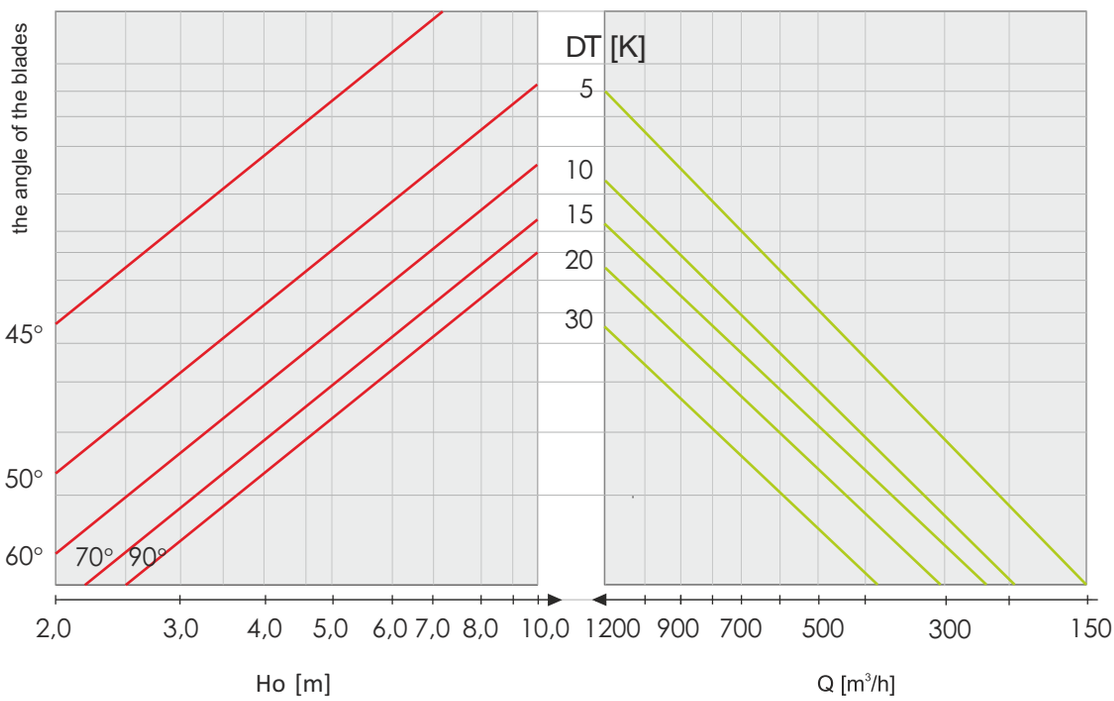
Q [m^3/h] - air volume flow

Ho [m.] - the distance to the presence of people

T [K] - difference between supply air temperature and the temperature in the room

The angle of the blades depending on the height of the room, temperature and air stream (heating)

Round swirl diffuser NWO-12 Dn-250 HEATING



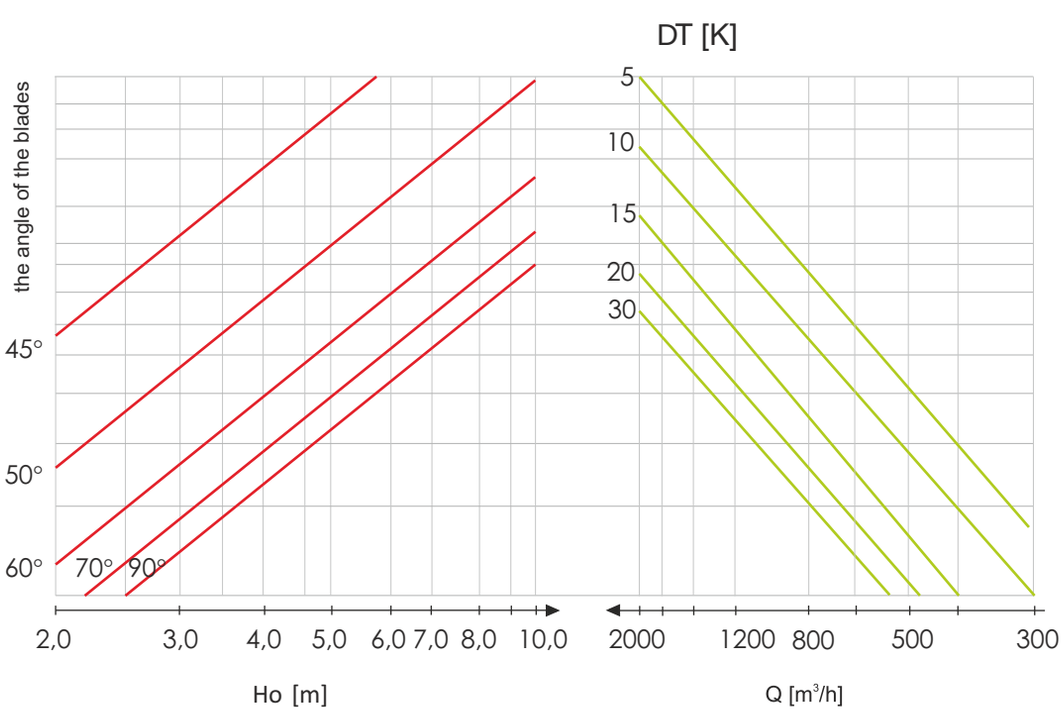
Marking:

Q [m³/h] - air volume flow

Ho [m.] - the distance to the presence of people

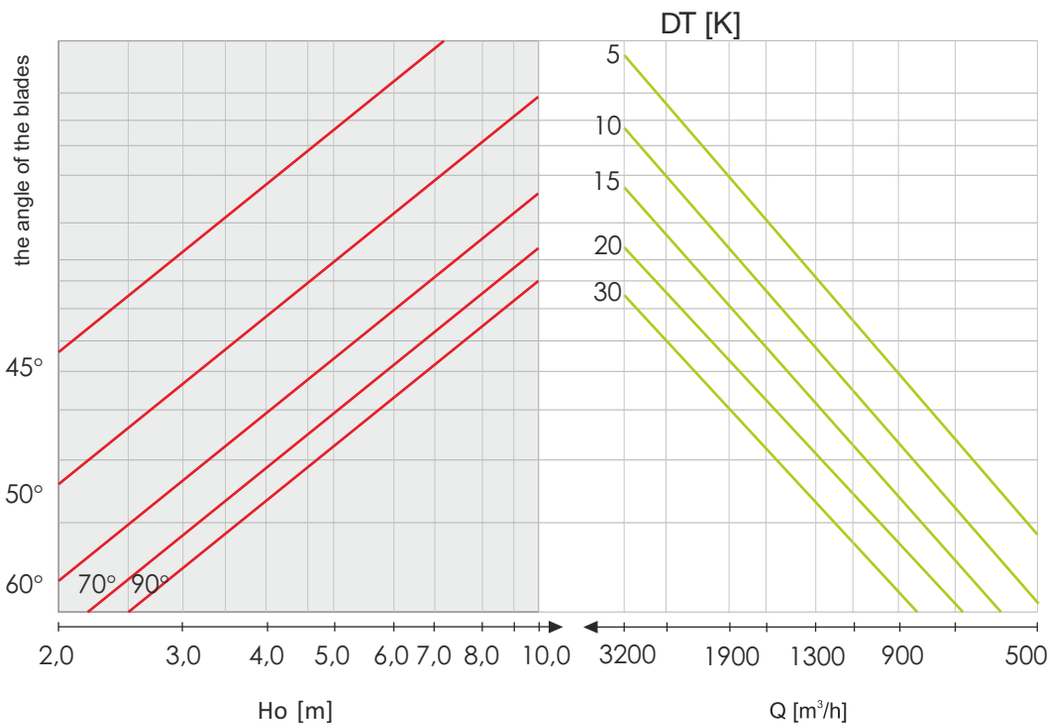
T [K] - difference between supply air temperature and the temperature in the room

Round swirl diffuser NWO-12 Dn-315 HEATING



The angle of the blades depending on the height of the room, temperature and air stream (heating)

Round swirl diffuser NWO-12 Dn-400 HEATING



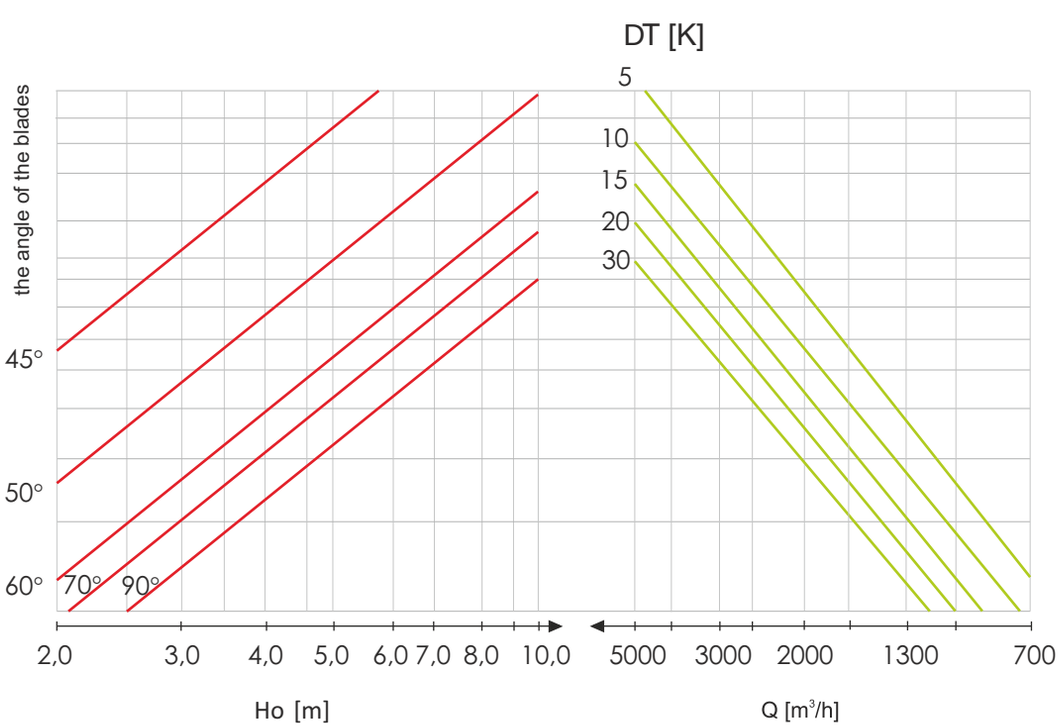
Marking:

Q [m³/h] - air volume flow

Ho [m.] - the distance to the presence of people

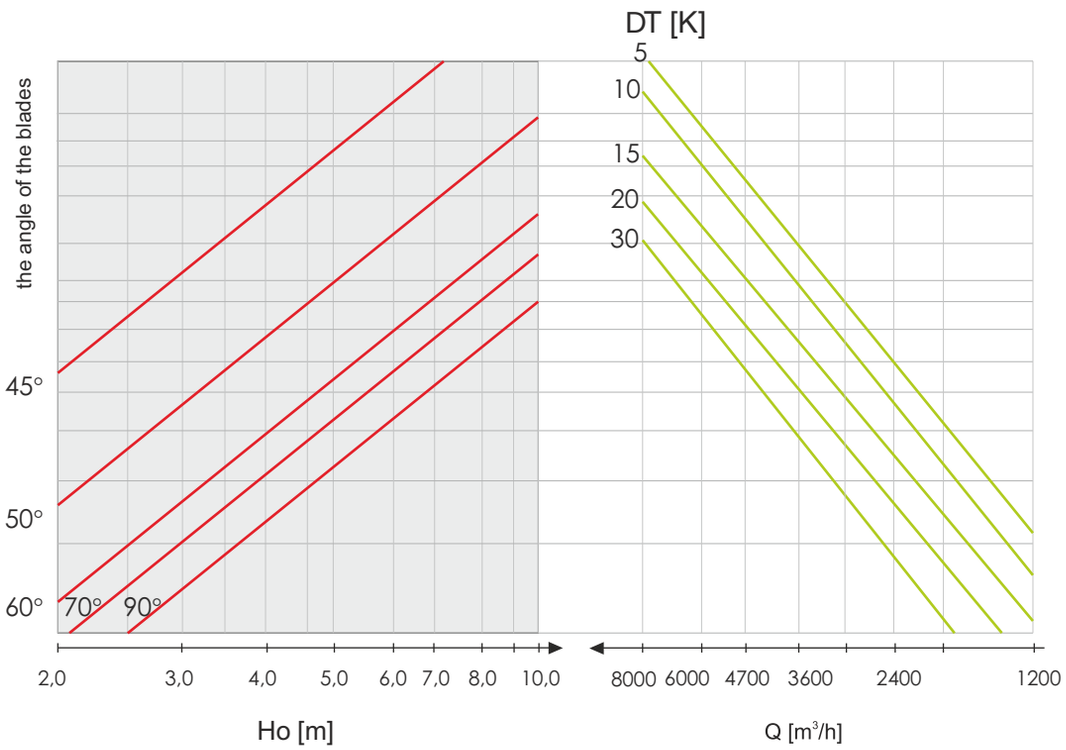
T [K] - difference between supply air temperature and the temperature in the room

Round swirl diffuser NWO-12 Dn-500 HEATING



The angle of the blades depending on the height of the room, temperature and air stream (heating)

Round swirl diffuser NWO-12 Dn-630 HEATING



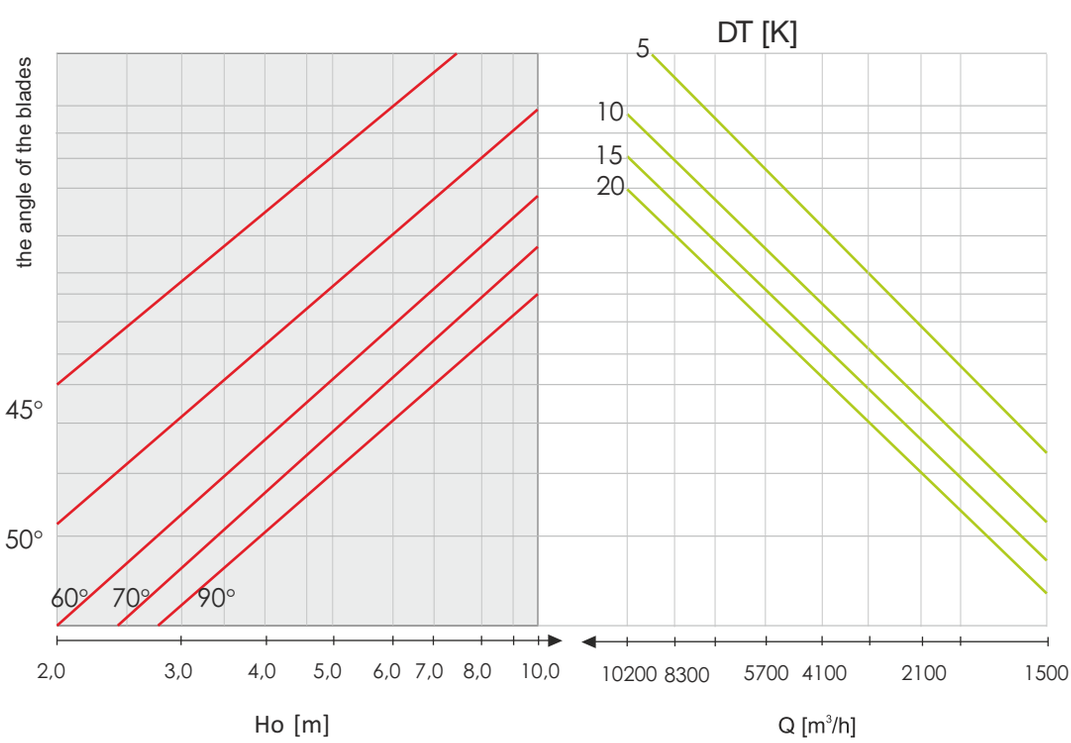
Marking:

Q [m³/h] - air volume flow

Ho [m.] - the distance to the presence of people

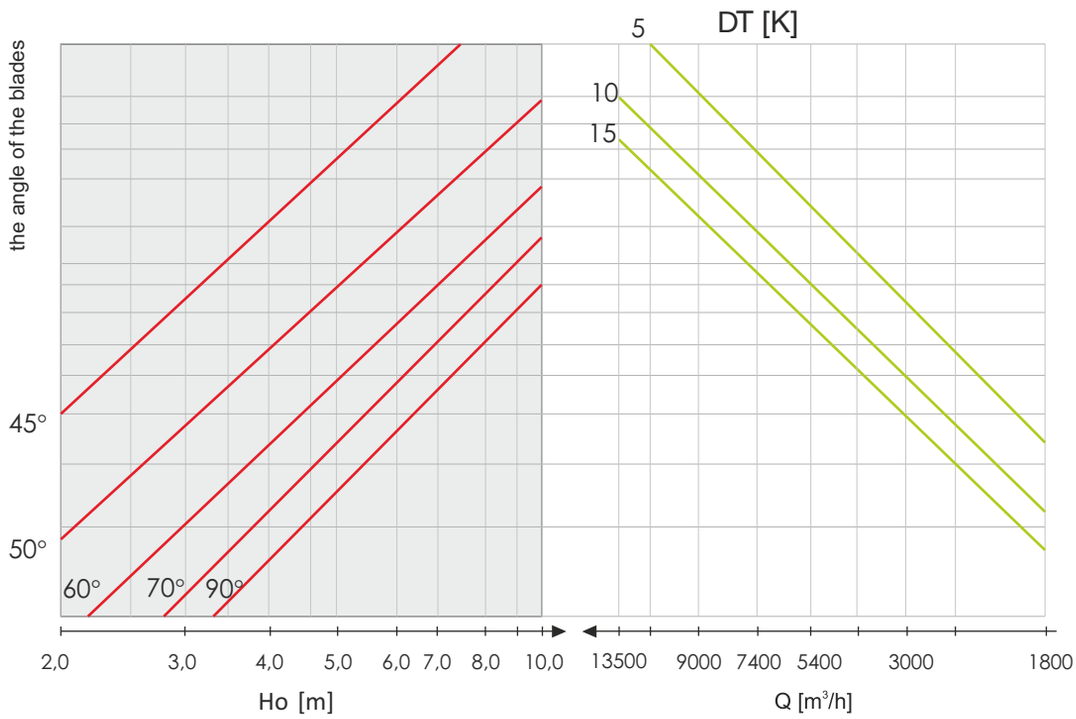
T [K] - difference between supply air temperature and the temperature in the room

Round swirl diffuser NWO-12 Dn-710 HEATING



The angle of the blades depending on the height of the room, temperature and air stream (heating)

Round swirl diffuser NWO-12 Dn-800 HEATING



Marking:

Q [m³/h] - air volume flow

Ho [m.] - the distance to the presence of people

T [K] - difference between supply air temperature and the temperature in the room

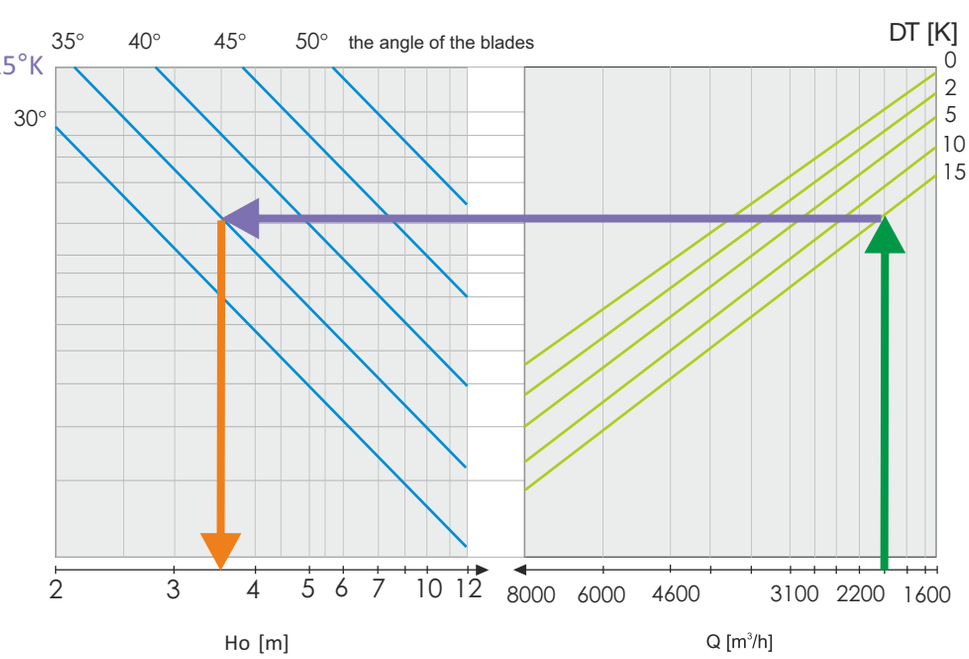
EXAMPLE (for cooling)

- round swirl diffuser NWO-12 (f 630)
- air volume flow Q=2000 m³/h
- difference between the temperature ΔT=15°K
- the angle of the blades 35°

Reading from the graph:

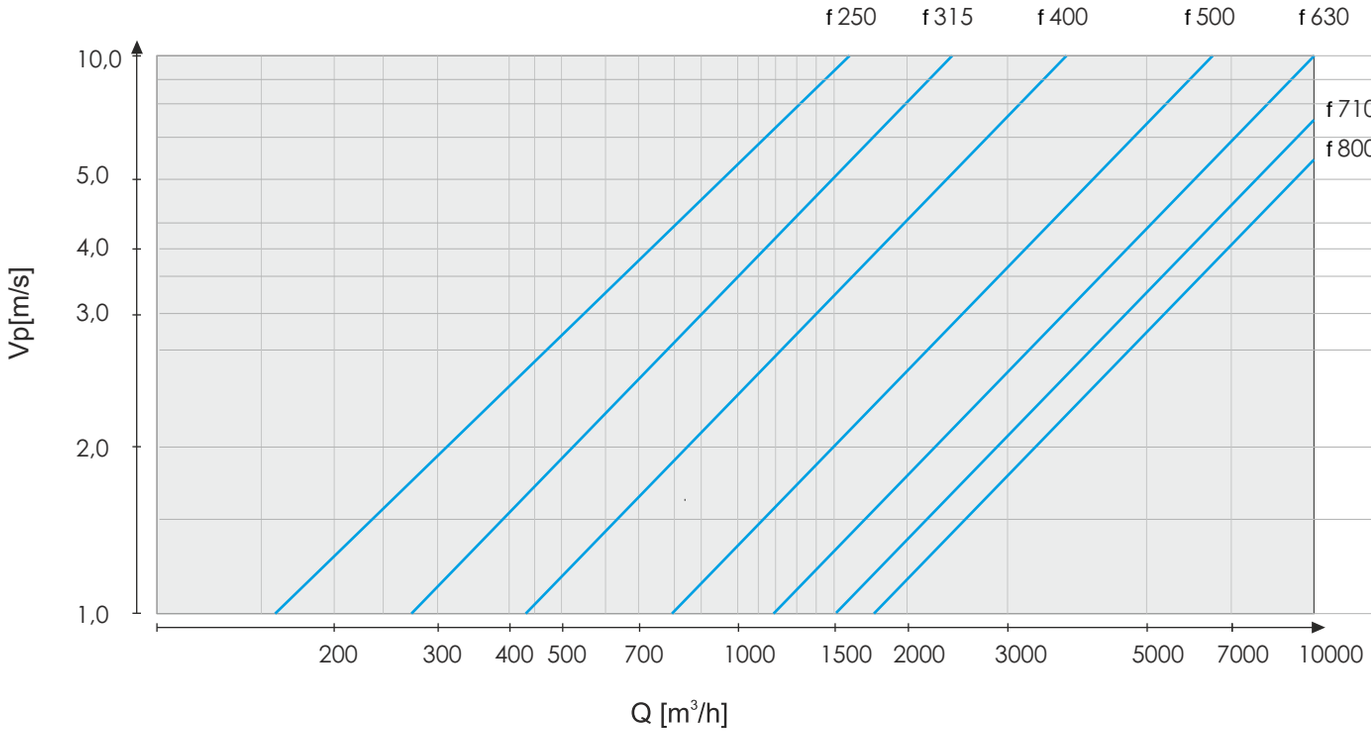
- stream range X=3,5 m (to the presence of people)

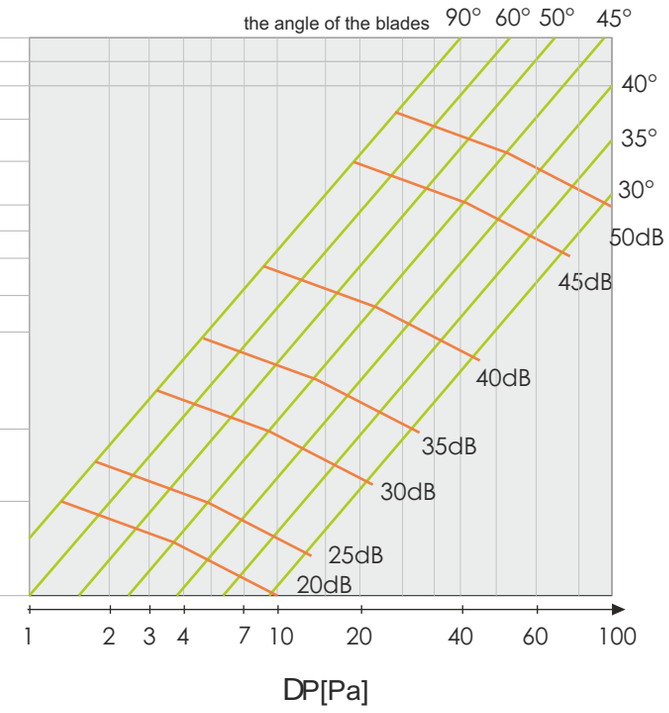
Round swirl diffuser NWO-12 Dn-630 COOLING



Round swirl diffuser NWO-12

PRESSURE LOSS AND ACOUSTIC POWER





Designation:

Q [m³/h] - air volume flow

T [K] - difference between supply air temperature and the temperature in the room

Vp [m/s] - the speed of air flowing from the diffuser

△P [Pa] -pressure drop through the diffuser

LWA[dB(A)] - acoustic power

Marking:

Q [m³/h] - air volume flow

Vp [m/s] - the speed of air flowing from the diffuser

T [K] - difference between supply air temperature and the temperature in the room

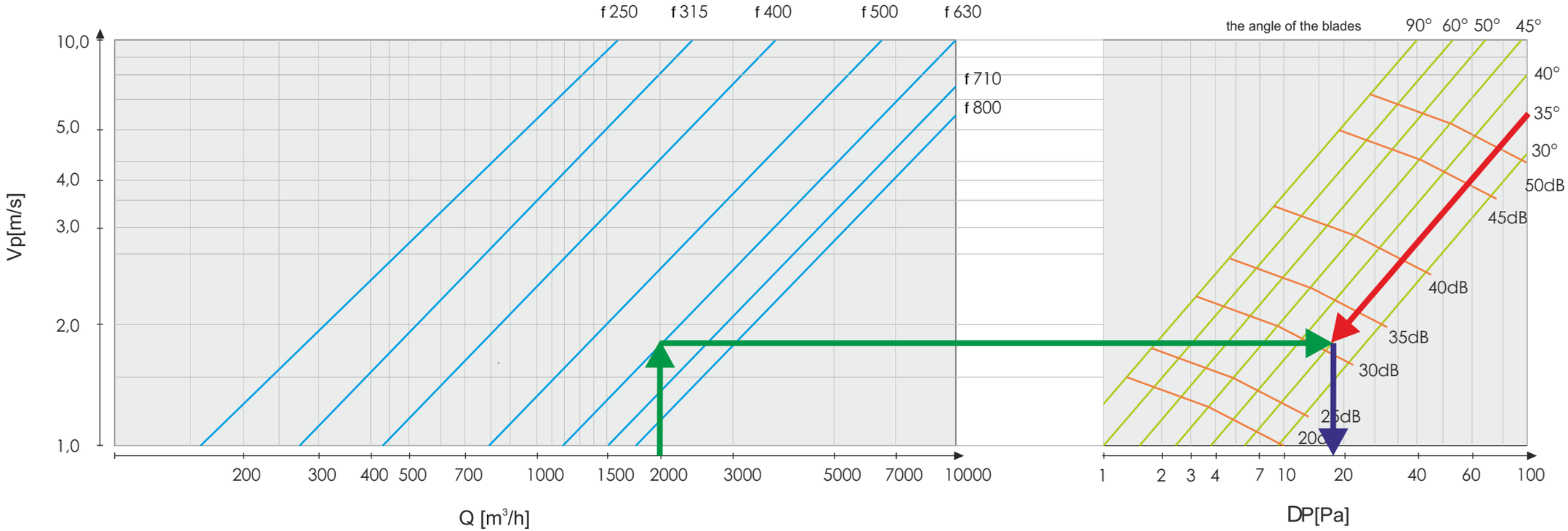
Round swirl diffuser NWO-12

EXAMPLE

- round swirl diffuser NWO-12 (f 630)
- air volume flow Q=2000 m³/h
- the angle of the blades 35°

Reading from the graph:

- pressure drop through the diffuser Δp=18 Pa
- acustic power L_{WA}<35 dB



The method of placing an order

Please make orders according to the following formula:

NWO-12 / 'WW' / 'd' / 'RAL' / 'M' / 'W' + 'SR' / 'I' / 'P' / 'K' / 'H'

'WW'	execution options: **none** - standard **PM** - version with modular plate 595x595 (plate size to be agreed)
'd'	the size of the diffuser **200, 250**, **315**, **355**, **400**, **500**, **630, 710, 800**, **1000**
'RAL'	diffuser color according to RAL palette (standard RAL9016*)
'M'	material: **ST** - powder coated steel* **AL** - aluminum powder coated **KO** - stainless steel / acid proof steel (1.4301 or 1.4404)
'W'	mounting option: **W1** - mounting in duct round or plenum box using self-drilling screws **W2** - invisible assembly to the crossbar mounted in the duct / plenum box **W3** - mounting screws through the mounting holes in the diffuser frame
'SR-2'	plenum box: **SR-G2** - plenum box with top spigot connection **SR-B2** - plenum box with side spigot connection
'I'	insulation: **absence** - plenum box without insulation* **Iz** - outside insulation **Iw** - inside insulation
'P'	control damper at spigot connection: **absence** - no damper* **P** - damper on spigot connection adjustable from the outside **PP** - damper on spigot connection adjustable from the inside
'K'	diameter spigot connection in size mm
'H'	the height of the plenum box in mm*

* - If you do not give the information will be used standard parameters.