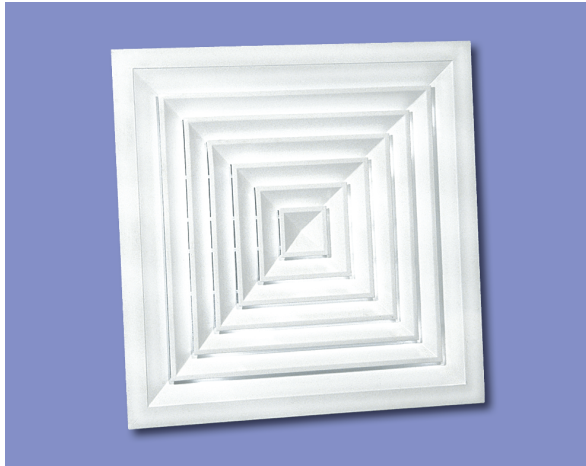


Ceiling diffusers APN, APR



Aluminum ceiling diffusers with 4-way air distribution 4APN (4APR), with 3-way air distribution 3APN (3APR), with 2-way air distribution 2APN (2APR), with single-way air distribution 1APN (1APR) are intended for

supply and exhaust of air in residential, administrative, public and production rooms.

Diffusers 4APN, 3APN, 2APN, 1APN are composed of a rectangular housing in which a set of guiding plates is mounted by means of spring-loaded pivots. Diffusers 4APR, 3APR, 2APR, 1APR are fitted with an airflow rate regulator.

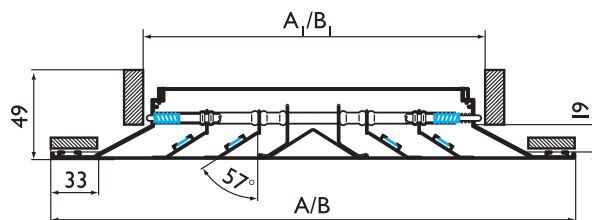
Diffusers APN (APR) are mounted at the level of the suspended ceiling. The make is fixed to the air duct by means of self-tapping screws.

Diffusers are made of aluminum and are powder coated white color (RAL 9016).

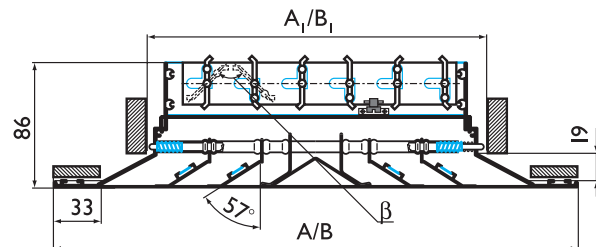
The Customer may order any other color by catalog RAL. Minimal size 225 x 225 mm, maximal 1050 x 1050 mm, spacing – 75 mm, including rectangular ones.

For technical characteristics of standard square diffusers see the tables. The Customer may order any other size.

APN



APR



Characteristics of diffusers APN, APR

| A × B, mm | A ₁ × B ₁ , mm | F ₀ , m ² | F _{eff} , m ² | | | | Mass, kg | |
|--------------|---|---------------------------------|-----------------------------------|--------------|--------------|--------------|----------|-----|
| | | | 4APN 4APR | 3APN 3APR | 2APN 2APR | 1APN 1APR | APN | APR |
| 300 × 300 | 160 × 160 | 0,02 | 0,02 | 0,01 | 0,01 | 0,01 | 0,7 | 1,0 |
| 450 × 450 | 310 × 310 | 0,08 | 0,04 | 0,04 | 0,04 | 0,03 | 1,7 | 2,4 |
| 600 × 600 | 460 × 460 | 0,19 | 0,09 | 0,08 | 0,08 | 0,07 | 3,0 | 4,3 |

Technical characteristics of APN diffusers for supply ventilation systems

When air is supplied into a rooms through APN diffusers recommended flow rates L_0 depending on noise level L_A , loss of total pressure ΔP_{τ} , supply jet range $l_{0,2}$ at $V_x=0,2$ m/s, $l_{0,5}$ at $V_x=0,5$ m/s, $l_{0,75}$ at $V_x=0,75$ m/s are given in the table below.



AIR DISTRIBUTION ELEMENTS PRODUCED BY "ARKTOS"

Data for selection diffusers APN – supply air

| A × B, mm | L _A < 20 dB(A) | | | | L _A = 25 dB(A) | | | | L _A = 35 dB(A) | | | | L _A = 45 dB(A) | | | | |
|--------------|---------------------------------------|-------------------------|---|-----|---------------------------------------|-------------------------|---|-----|---------------------------------------|-------------------------|---|-----|---------------------------|---------------------------------------|-------------------------|---|------|
| | L ₀ , m ³ /h | ΔP _t , Pa | jet range, m at V _x , m/s | | L ₀ , m ³ /h | ΔP _t , Pa | jet range, m at V _x , m/s | | L ₀ , m ³ /h | ΔP _t , Pa | jet range, m at V _x , m/s | | | L ₀ , m ³ /h | ΔP _t , Pa | jet range, m at V _x , m/s | |
| | | | 0,2 | 0,5 | | | 0,2 | 0,5 | | | 0,2 | 0,5 | 0,75 | | | 0,5 | 0,75 |
| 4APN | | | | | | | | | | | | | | | | | |
| 300 × 300 | 50 | 0,8 | 1,1 | 0,4 | 270 | 23 | 6,0 | 2,4 | 380 | 46 | 8,0 | 3,4 | 2,2 | 550 | 97 | 4,9 | 3,2 |
| 450 × 450 | 150 | 0,4 | 1,6 | 0,6 | 950 | 15 | 10,0 | 4,0 | 1300 | 28 | 14,0 | 5,5 | 3,7 | 1800 | 54 | 7,6 | 5,1 |
| 600 × 600 | 350 | 0,4 | 2,5 | 1,0 | 2000 | 13 | 14,0 | 5,6 | 2500 | 20 | 17,0 | 7,0 | 4,6 | 4000 | 50 | 11,0 | 7,4 |
| 3APN | | | | | | | | | | | | | | | | | |
| 300 × 300 | 40 | 0,6 | 1,1 | 0,4 | 200 | 14 | 5,6 | 2,3 | 270 | 26 | 8,0 | 3,0 | 2,0 | 380 | 52 | 4,3 | 2,9 |
| 450 × 450 | 150 | 0,4 | 2,0 | 0,8 | 650 | 8 | 9,0 | 3,5 | 950 | 17 | 13,0 | 5,1 | 3,4 | 1300 | 32 | 7,0 | 4,7 |
| 600 × 600 | 350 | 0,4 | 3,1 | 1,3 | 1300 | 6 | 12,0 | 4,6 | 2000 | 14 | 18,0 | 7,1 | 4,7 | 2500 | 22 | 9,0 | 5,9 |
| 2APN | | | | | | | | | | | | | | | | | |
| 300 × 300 | 35 | 0,5 | 1,6 | 0,6 | 150 | 9 | 6,9 | 2,8 | 220 | 20 | 10,2 | 4,1 | 2,7 | 320 | 42 | 5,9 | 4,0 |
| 450 × 450 | 150 | 0,5 | 3,3 | 1,3 | 500 | 5 | 11,1 | 4,4 | 750 | 12 | 16,6 | 6,7 | 4,4 | 1100 | 26 | 9,8 | 6,5 |
| 600 × 600 | 350 | 0,5 | 5,1 | 2,1 | 1100 | 5 | 16,0 | 6,4 | 1500 | 9 | 21,9 | 8,7 | 5,8 | 2100 | 18 | 12,3 | 8,2 |
| 1APN | | | | | | | | | | | | | | | | | |
| 300 × 300 | 35 | 0,6 | 2,3 | 0,9 | 100 | 5 | 6,5 | 2,6 | 150 | 11 | 9,8 | 3,9 | 2,6 | 220 | 24 | 5,8 | 3,8 |
| 450 × 450 | 150 | 0,6 | 4,7 | 1,9 | 360 | 3 | 11,2 | 4,5 | 500 | 7 | 15,6 | 6,3 | 4,2 | 750 | 15 | 9,4 | 6,3 |
| 600 × 600 | 350 | 0,6 | 7,3 | 2,9 | 750 | 3 | 15,5 | 6,2 | 1100 | 6 | 22,6 | 9,1 | 6,0 | 1500 | 11 | 12,4 | 8,2 |

In the event that APN diffusers are fitted with an airflow rate regulator the data of the table are corrected as follows:

$$\Delta P_t^{APR} = K \cdot \Delta P_t$$

$$L_A^{APR} = L_A + \Delta L_A$$

Values of coefficient K and ΔL_A for APR diffusers

| regulator's opening % | 100% β = 0° | 50% β = 30° | 30% β = 60° |
|--------------------------|----------------|----------------|----------------|
| K | 1,2 | 3,2 | 4,0 |
| ΔL _A , dB(A) | 0 | 5 | 7 |

Application of diffusers APN, APR for exhaust ventilation systems

When air is exhausted out of a rooms through APN, APR diffusers, recommended airflow rates L₀ depending on the level of noise generated L_A and relevant losses of total pressure ΔP_t are given in the table below. The suction flow does not influence on the air parameters in the occupied zone and its velocity is not calculated.

Data for selection of APN diffusers – exhaust air

| A × B, mm | L _A = 25 dB(A) | | | L _A = 35 dB(A) | | | L _A = 45 dB(A) | | | L _A = 25 dB(A) | | | L _A = 35 dB(A) | | | L _A = 45 dB(A) | | |
|--------------|---------------------------------------|-------------------------|-------------------------|---------------------------------------|-------------------------|-------------------------|---------------------------------------|-------------------------|-------------------------|---------------------------------------|-------------------------|-------------------------|---------------------------------------|-------------------------|-------------------------|---------------------------------------|-------------------------|-------------------------|
| | L ₀ , m ³ /h | ΔP _t , Pa | V ₀ , m/s | L ₀ , m ³ /h | ΔP _t , Pa | V ₀ , m/s | L ₀ , m ³ /h | ΔP _t , Pa | V ₀ , m/s | L ₀ , m ³ /h | ΔP _t , Pa | V ₀ , m/s | L ₀ , m ³ /h | ΔP _t , Pa | V ₀ , m/s | L ₀ , m ³ /h | ΔP _t , Pa | V ₀ , m/s |
| 4APN | | | | | | | | | | | | | | | | | | |
| 300 × 300 | 300 | 22 | 4,4 | 420 | 44 | 6,1 | 620 | 95 | 9,1 | 230 | 1,4 | 3,4 | 340 | 31 | 5,0 | 420 | 48 | 6,1 |
| 450 × 450 | 1050 | 14 | 3,5 | 1450 | 27 | 4,9 | 2000 | 52 | 6,7 | 720 | 7 | 2,4 | 1100 | 17 | 3,7 | 1450 | 30 | 4,9 |
| 600 × 600 | 2200 | 12 | 3,2 | 3000 | 22 | 4,3 | 4400 | 47 | 6,4 | 1500 | 6 | 2,2 | 2300 | 14 | 3,3 | 2800 | 21 | 4,1 |
| 2APN | | | | | | | | | 1APN | | | | | | | | | |
| 300 × 300 | 180 | 10 | 2,6 | 250 | 19 | 3,7 | 360 | 40 | 5,3 | 120 | 6 | 1,8 | 170 | 11 | 2,5 | 250 | 24 | 3,7 |
| 450 × 450 | 600 | 6 | 2,0 | 850 | 12 | 2,8 | 1150 | 21 | 3,9 | 420 | 4 | 1,4 | 580 | 7 | 1,9 | 850 | 15 | 2,8 |
| 600 × 600 | 1250 | 5 | 1,8 | 1700 | 9 | 2,5 | 2400 | 17 | 3,5 | 850 | 3 | 1,2 | 1300 | 6 | 1,9 | 1800 | 12 | 2,6 |