

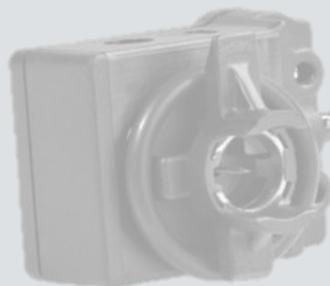


Air Quality Improver Ionair



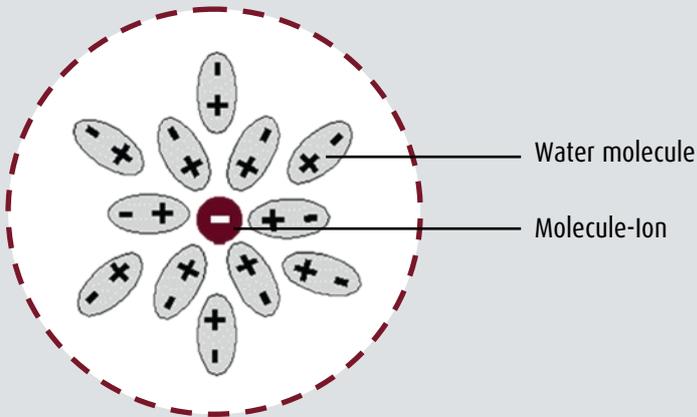
The Air Quality Improver system Ionair employs a special technique to provide for the well-being, safety and health of the occupants. The system purifies the air in the vehicle's interior to produce a fresh-air effect.

This Ionair system employs artificial ionization to actively improve air quality in the vehicle's interior. The natural concentration of N-ions, comparable to the fresh air found near a waterfall, greatly adds to a sense of wellbeing while reducing harmful particles and airborne germs.



The Ionair Principle

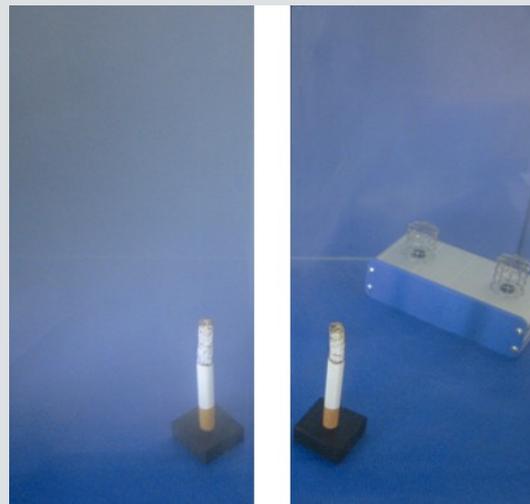
Minor ion



The Ionair system employs the principle of corona discharge to produce the desired effect. Electrons are accelerated in a highly inhomogeneous electrical field so that the gas molecules in the ambient air ionize. The ions (predominantly O₂) attract water molecules, giving rise to a complex consisting of 20 to 40 molecules, known as a minor ion. This technology helps generate up to 12 billion N-ions per second, whose beneficial effects have long been known to science.

The minor ions deposit themselves on dust particles, causing them to take on a charge (aerosols). When particles with opposite charges collide, they attract each other, forming larger particles that quickly sink to the ground due to their weight.

This principle makes it possible to trap smoke particles such those produced by cigarette, cigar or pipe smoke, and dust particles. Removal of dust from the air by minor ions quite efficiently eliminates harmful particles that normally cling to aerosol particles and thus spread. Among them are numerous allergens such as household dust and pollen. The Ionair effectively reduces the exposure of vehicle occupants to fine dust particles.



Status 60 seconds after Ionair has been switched on. The purifying effect is readily recognizable.

Ionair Ionization

The Ionair system generates ions at a high rate, but with negligible ozone emissions. The result is due to a special combination of electrode arrangement and lower emitter voltage (corona discharge).

Measurements of the air in a vehicle's interior resulted in a concentration of up to 50,000 N-ions/cm³ while the ozone concentration was less than 1 µg/m³ (< 0.5 ppb). The odor of ozone first becomes noticeable at 40.2 µg/m³; the average natural concentration of ozone in the air in summer is approximately 60 µg/m³. According to EU guidelines, concentrations below 120 µg/m³ pose no health hazard.

Ionair Data

The Ionair system's performance will vary according to the conditions (such as air flow, mounting location, surfaces) encountered in different applications. Typical performance figures are given in the table below.

Parameter	Value	Note
Operating voltage	9 V bis 16,5 V DC	
Power consumption	< 100 mA	
Power input	< 0,8 W	
Dimensions	110 x 40 x 25 mm	E-box
Weight	60 g	
Rate of ion generation	approx. 12 billion per second	At 20°C and 50% rH
N-ion concentration	> 4.000.000 pro cm ³	At 20°C and 50% rH
P-ion concentration	approx. 20.000 pro cm ³	At 20°C and 50% rH
Maximum ozone concentration in the vehicle	< 1µg/m ³	At 20°C and 50% rH measured between the front headrests
Operating temperature	-40° C bis +85° C	
Storage temperature	-40° C bis +105° C	
Type of protection	IP5K0	In the vicinity of the Emitter
	IP6K0	In the vicinity of the E-box

Ionic concentration in the vehicle measured at different locations

Middle dashboard vent: 100.000 (ions/cm³)

Between the front headrests: 50.000 (ions/cm³)

Back seats: 20.000 (ions/cm³)

Measurements were taken with the fan speed on low.

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The Benefits of Ionair

- Increased sense of well-being
- Effectively prevents allergies
- Antibacterial effect
- Reduces stress and fatigue
- Heightens attention

Ionair Integration

The modular design of the Ionair system allows for mounting wherever the type of vehicle requires it. Separation of the emitter and electronic components saves space and allows for flexible installation. Possible installation sites could be the dashboard vents or the roof assembly. The preferred location is the dashboard vents because this will ensure active, even distribution throughout the vehicle.

