



PURE SKIES™ 9000

The world's most advanced air pollution control system



Pure Skies is a next-generation air pollution control technology that effectively covers particle pollutants and certain gaseous pollutants over large areas.

PM2.5 and PM10 are typically reduced by 50% over a 1-3 km radius.

Pure Skies uses pulsed radio waves in the Wi-Fi spectrum (2.4-2.5 GHz) to accelerate the clearance of target pollutants in the atmosphere.¹

Safety profile is similar to Wi-Fi. Pure Skies is designed to meet all international standards for wireless transmission and safety.

¹ Pulsed radio waves create a very weak electric field that affects particle pollutants of very small size (lab tested up to 20-30 microns in diameter), causing their motion to accelerate via dipole effect.

Devic Earth Pvt. Ltd.
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Product Specifications: Pure Skies 9000

TECHNICAL SPECIFICATIONS

CATEGORY	FEATURE	SPECIFICATIONS
AIR POLLUTION CONTROL EQUIPMENT For ambient air quality (outdoors)	Omnidirectional polarized radio antenna with power source, signal source, and associated electronics.	Air quality index improves by minimum 33% throughout target area.
	Frequency	2.4-2.5 GHz (ISM band; Wi-Fi spectrum. Frequency is adjusted by our technicians at your site to ensure no interference with nearby Wi-Fi)
	Gain	3-8 dBi (peak); 1 dBi (band)
	EIRP	100 mW
	Duty cycle	10-80%, depending on pulse sequence algorithm used for different applications/models/product types
	Health and safety	Conformance with CISPR 11 global standards for safety of industrial and other equipment operating in the 0 Hz to 400 GHz range
SMART TECHNOLOGY	Automatically adjusts output to optimize air quality, based on readings from air quality monitor	Requires that Pure Skies 9000 units, extenders, and air quality monitors are powered on 24x7.
MECHANICAL	Dimensions (base station)	46 (H) x 46 (W) x 29 (D) cm
	Dimensions (extender)	29 (H) x 25 (W) x 14 (D) cm
	Weight	22 kg (base station) 3 kg (extender)
MECHANICAL	Enclosure Material	1. Main cabinet:

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		<p>Either fibre reinforced plastic (FRP); IP65 to IP67 rating based on customer requirements; OR temperature rated to 80° C (tested); Mild steel with powder coating for mounting hardware</p> <p>2. Inner cabinet for core technology: ABS plastic IP67 enclosure (dust and waterproof)</p>
	Installation/clamping	Floor or pole mounted (pole mounting hardware included)
	Storage temperature	-20 to 80°C
	Operational temperature	0-70° C
	Operational humidity	5 to 95 RH, non-condensing
CONNECTIVITY	GSM (2G/3G/4G)	<p>850/900/1800/1900 MHz</p> <p>SIM card included</p>
SECURITY	Theft alarm	Door open-close, GPRS tracking (powered by UPS if unit is unplugged)
POWER REQUIREMENT	Power consumption	20 Watts; 220-230 V AC
NOISE LEVEL		0 dB

For technical specifications for the air quality monitors, please see the separate technical specifications sheet provided by Oizom Instruments Pvt. Ltd.

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FUNCTIONAL SPECIFICATIONS

LOCATION SELECTION FOR INSTALLATION

Proper location selection is important for optimal air pollution mitigation. Each Pure Skies system contains one base station, one or more extender units, and one or more air quality monitors. The ideal location for each component varies with local topography and customer requirements.

Devic Earth's technicians are well trained in installation procedures and will identify the ideal location on your property for each component(s).



Pure Skies base station

Preferred Mounting	Rooftop, open to surroundings on all sides. Adequate grounding to earth required by a qualified electrician.
Installation Height	Maximum height available for the customer site but away from heat sources such as kilns or stacks
Power Supply	Constant AC supply within a 5-metre range from the unit
Network Availability	Adequate connectivity to local mobile network required. Devic Earth will carry SIM cards from several mobile carriers during installation.

Pure Skies extenders

Preferred Mounting	Pole or Wall, open to surroundings at 270°
Installation Height	12-15 feet (4-6 meters)
Power Supply	Constant AC supply within a 5-metre range from the unit*
Network Availability	Adequate connectivity to local mobile network required. Devic Earth will carry SIM cards from several mobile carriers during installation.

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* Extender units, due to their small size and variable locations, are not solar powered.

Air quality monitors

Preferred Mounting	Pole or Wall, open to surroundings at 270°
Installation Height	12-15 feet (4-6 meters)
Power Supply	Constant AC supply within a 5-metre range from the unit*
Network Availability	Adequate connectivity to local mobile network required. Devic Earth will carry SIM cards from several mobile carriers during installation.

* All outdoor air quality monitors from Oizom, Devic Earth's monitoring partner, come with solar panels and batteries for power. However, connection to the mains is recommended to ensure 24x7 power during cloudy conditions.

OPERATION

NOTE: The Pure Skies base station, extender units, and the accompany air quality monitor(s) must be powered on continuously for optimal performance.

When the Pure Skies base station and extender units are powered on, they will broadcast in the Wi-Fi spectrum at pre-specified intervals 24x7. Operation and modification of the equipment is done by Devic Earth using secure cloud-based Internet of Things (IoT) hardware built into each base station and extender unit.



Our Smart Technology automatically selects the optimum set of algorithms for your location based on real time data from your air quality monitors.



Our engineers provide human oversight of system performance and also evaluate parameters outside your location that affect your air quality (meteorological data, nearby crop burning or fires, upwind point sources of pollution etc.).

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CLEANING AND MAINTENANCE

Pure Skies is very robust, with uptime of the air pollution control units averaging 98% or more.

Cleaning: Periodic cleaning is important to ensure optimal device performance, particularly for the air quality monitors. Depending on the ambient dust load, routine cleaning should be done monthly or at least quarterly. This includes cleaning the outer cabinet of the air pollution control units and monitor, the solar panels, and – for the air quality monitor – the light sensor, air inlet, and outlet mesh.

IoT hardware: The IoT hardware in the air pollution control equipment must be replaced every 6 years (predicted life expectancy with normal use – 8 years). This will be performed by a Devic Earth technician.

Sensor replacement for the air quality monitor(s): Sensors are replaced annually by a Devic Earth or Oizom technician.

Spot-calibration of the air quality monitor(s): Spot calibration can be performed using reference equipment or a recently calibrated Oizom device. This will be performed by a Devic Earth or Oizom technician.

--End of Specifications--

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