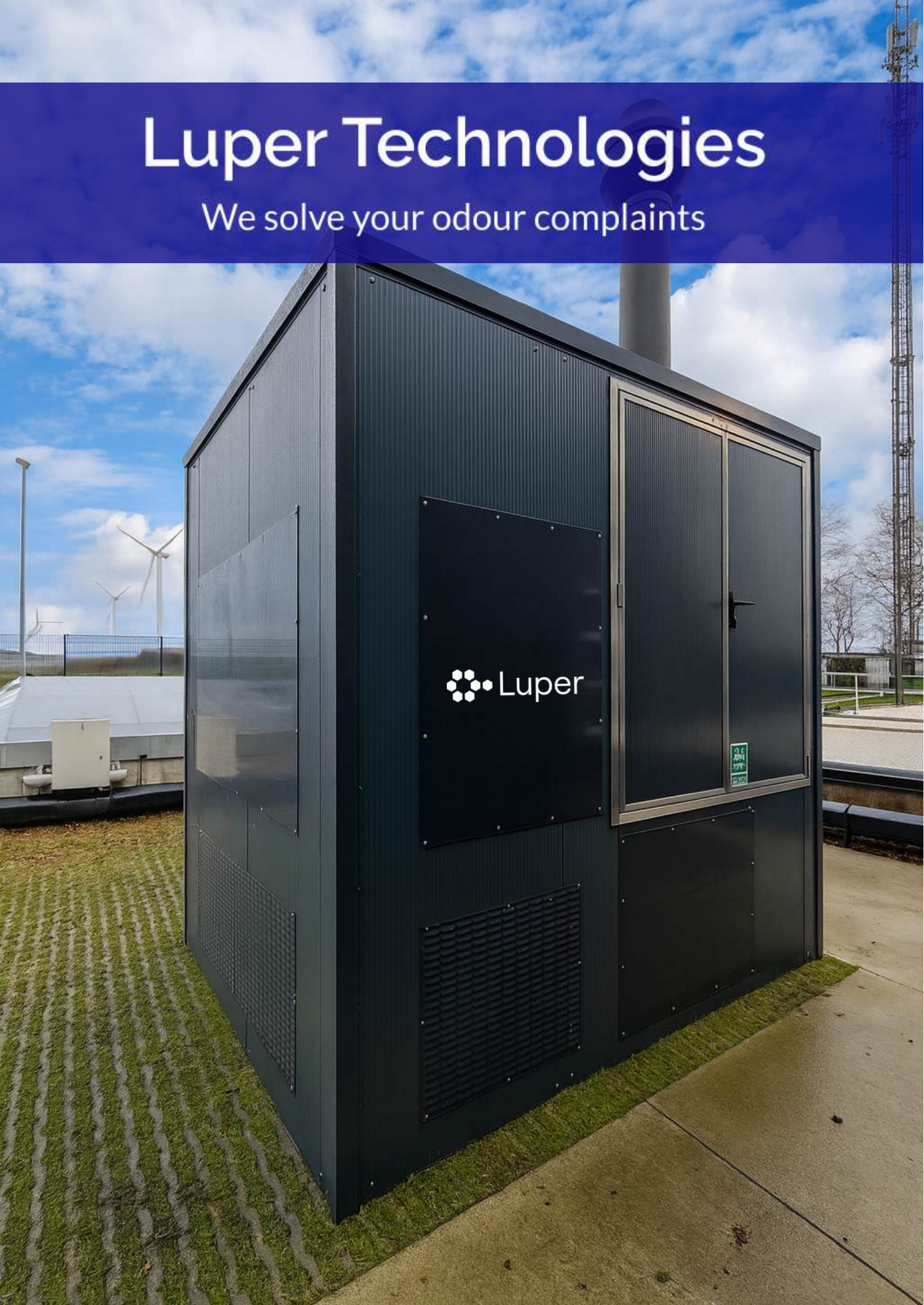
Luper Technologies

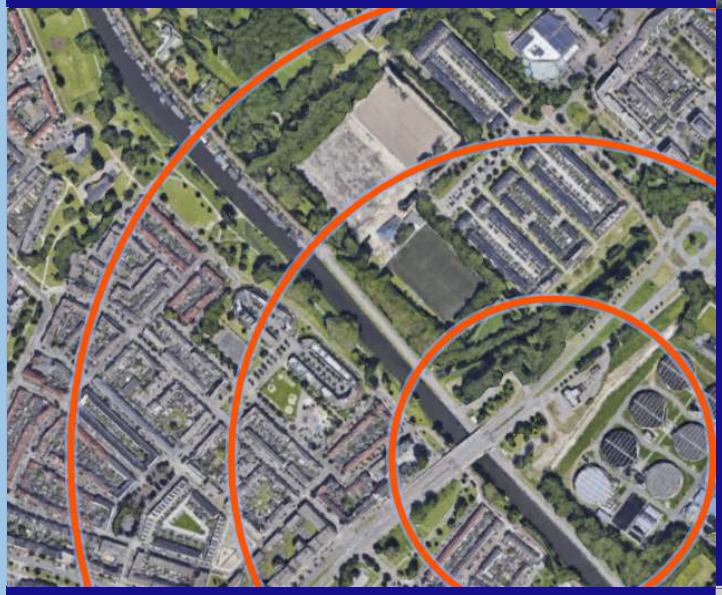
We solve your odour complaints



Luper AirShield

High-performance gas-phase advanced oxidation (GPAO) engineered
for wastewater authorities and process experts who demand robust performance

Air cleaning for odor-sensitive facilities



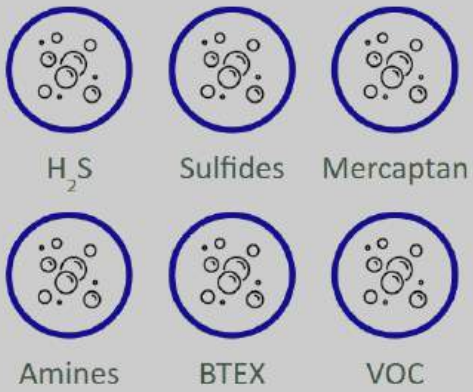
"Traditional systems are unable to respond to peak loads and changing gas compositions."

Wastewater authorities face a constant challenge: odor emissions are not static. When breakthrough occurs, community complaints rise and regulatory compliance is threatened. You need an active response, not a passive filter.

The AirShield addresses critical failures:

- Media saturation: in humid environments carbon filters lose efficiency rapidly
- Passive treatment: lava and biofilters fail to react to and eliminate peak emissions
- Slow kinetics: UV-C and ozone lack the reactivity to handle all odors

Target gas spectrum



99%+

Removal of malodorous & toxic compounds

10 X

Lower residual emissions

60%

Reduction of total cost of ownership

Ultra-high removal

Third-party accredited measurements show >99.5% removal of all odors, including 100% of malodorous sulfur compounds (such as DMS, DMDS, mercaptans and H_2S).

Eliminates peak loads

Our AirShield actively monitors these source emissions and automatically adjusts cleaning capacity to prevent breakthrough emissions.

Operational value

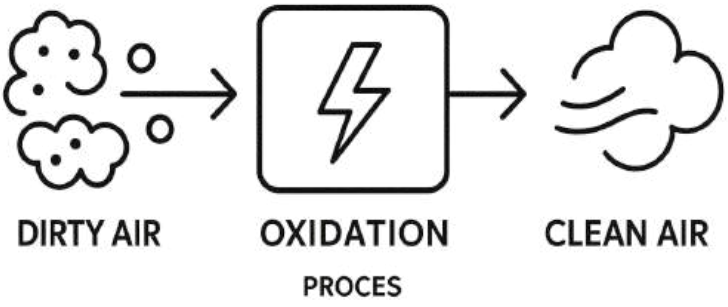
Our AirShield reduces the lifetime cost for air cleaning by 60% and the CO_2-eq footprint by 80%

The GPAO Advantage

Hydroxyl radicals neutralize pollution in milliseconds

The AirShield One is our end-of-pipe air cleaning system that provides year-round reliable cleaning. It combines our patented GPAO technology with a sensor-suite to provide data-enabled services like predictive maintenance, energy optimization and emission monitoring that improve operational stability at lower cost. Real-time power control ensures surrounding areas remain odor-free, even during intense bursts of odorous emissions.

We clean air with the power of nature



Our AirShield uses GPAO to clean process air in four steps:

1. Generate: Use electricity to create hydroxyl on demand
2. Neutralize: oxidize toxic and odorous gases with hydroxyl
3. Form: Turn neutralized gases into particles
4. Remove: filter particles from the air

Our offering in a nutshell:

- The AirShield - when zero odor is the only option
- Automatic sensor-driven power control
- Optional service contracts by certified local partners
- Transparent and reliable; every interaction, every delivery

How is hydroxyl different from ozone or UV-C?
The fundamental difference lies in reactivity.

Hydroxyl radicals are up to one billion times more reactive than ozone, enabling rapid destruction of a far broader spectrum of contaminants. Rather than relying on exposure time or accumulation, GPAO neutralizes pollutants at molecular level within milliseconds.

A head-to-head comparison on emissions from the sludge treatment of a wastewater plant shows that while ozone or UV-C alone removes 15% of VOCs, hydroxyl achieved a removal of 99.9%, providing a substantial leap in performance.

AirShield One	Specifications
Size	2.3 x 3.2 x 3.1 m^3 (ex. chimney)
Airflow	300 - 1000 m^3/h
Modes	Up to four in parallel
Gases (selection of)	H_2S, VOC, sulfides, amines
Concentration	0 - 750 ppm

Request a site assessment

Curious what our AirShield can do for you?
We're here to answer your questions.

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