

## Father Christmas Meets High-tech: Clean Air in the Arctic Circle thanks to ozone-generating UV Lamps

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### Ozone Generating Lamps Eliminate Odours in Finnish, Santa Theme Park

Every year in the time running up to Christmas, Santa is visited by many children and their parents in the Santa Park theme park close to the Arctic Circle in Lapland/Finland. Santa Park is housed in a mountain and, in a large central hall, the visitors are entertained by a number of activities. For example, elves learn in a school how to prepare and pack the children's presents; in an ice gallery, visitors can marvel at many animals sculpted in ice; and, being Finland, there is naturally an ice bar, where cocktails can be enjoyed in ice glasses at the bar on an imaginary beach.

The Santa Park is open only once a year during advent. During the rest of the year the site is shut. Consequently, moulds are formed as well as associated unpleasant smells and these are controlled by means of UV lamps from Heraeus Noblelight.

The physical method UV radiation is an economical and environmentally friendly alternative to chemical treatments. By using special Heraeus UV lamps ozone is generated from the oxygen in the environmental air. To do this, the emitted wavelength of 185nm is used. The longer wavelength of 254 nm photolysis the ozone to excited oxygen, which oxidises the long chain molecules.

The company BonAir manufactures and sells ozone-generating equipment in Finland and this equipment is fitted out with UV lamps from Heraeus Noblelight. The systems are fitted with four ozone-generating, U-shaped 120 Watt lamps. The capacity of the large BonAir Ozonator allows the generation of 64 grammes of ozone per hour.

This system has been used to treat the 35,000 cubic metres of air in the tunnel system and the main hall at Santa Park, which has been treated two and half days. In addition, three smaller pieces of equipment are also used with a capacity of 3.2 gramme of ozone per hour. Finally, 300 metre long channels of the air conditioning system were supplied with ozone-containing air for six hours.

"The end result was fantastic. I destroyed all the mould and at the end there was no trace of the previous bad smells!" commented Raimo Vartiainen, managing director of BonAir in Finland. When the project was finished, Santa himself thanked Raimo Vartiainen and his wife personally.

Following on from the development of UV lamp technology by Richard Küch in 1904, Heraeus Noblelight can look back on

over 100 years experience in the development, production and application of UV lamps. Through innovations such as Longlife technology Heraeus continues to set milestones in lamp technology to increase the productivity of industrial processes. Heraeus Noblelight is the original equipment manufacturer and preferred partner of system builders providing equipment for the disinfection of water, air and surfaces, as well as for industrial photochemical processes and oxidation.

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Heraeus Noblelight GmbH with its headquarters in Hanau and with subsidiaries in the USA, Great Britain, France, China, Australia and Puerto Rico, is one of the technology- and market-leaders in the production of specialist light sources. In 2006, Heraeus Noblelight had an annual turnover of 88 Million € and employed 651 people worldwide. The organisation develops, manufactures and markets infrared and ultraviolet emitters for applications in industrial manufacture, environmental protection, medicine and cosmetics, research, development and analytical laboratories.

Heraeus, the precious metals and technology group headquartered in Hanau, Germany, is a global, private company in the business segments of precious metals, sensors, dental and medical products, quartz glass and specialty lighting sources. With revenues of more than EUR 10 billion and more than 11,000 employees in over 100 companies, Heraeus has stood out for more than 155 years as one of the world's leading companies involved in precious metals and materials technology.

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