

CASE STUDY

CONSTRUCTION



CompAir's innovative Quantima compressors chosen for world's tallest performing fountain

A package of 11 CompAir compressors, including 4 Quantima units, is powering water jets up to 50 storeys high at The Dubai Fountain, the world's tallest performing fountain.

Overview

▶ Client

Emaar Properties

▶ Location

Downtown Burj Dubai

▶ Application

Power water jets up to 50 storeys high at The Dubai Fountain

▶ Products

11 x CompAir compressors, including 4 x Quantima units

Application Details

Developed by Emaar Properties, one of the world's leading property developers, this prestigious attraction "demands a high standard of equipment innovation, coupled with proven reliability and quality assurance and the CompAir compressors met this stringent criteria fully," said Florian Braehler, Product Manager Oil-free Compressors.

Over 900 ft (275 metres) in length and capable of shooting water sprays to heights of over 150 metres, the fountain is spectacular. "With sound and light shows running up to 16

times each evening, compressed air availability and quality are key to its successful operation," explained Florian Braehler.

The compressed air is used to propel the water through the jet nozzle, and it is therefore important that it is completely clean. Dirty or oil-laden air could not only block the nozzle but could also contaminate the lake, potentially resulting in an expensive clean-up operation. The Quantima units are engineered to provide completely oil-free air to eliminate this risk, within a package that would ensure an uninterrupted supply of compressed air and fit easily in to the confines of the plant room, situated underneath the lake.

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Benefits at a glance

- ▶ Oil free air - will not block the nozzle or contaminate the lake
- ▶ Capable of shooting water sprays over 150 meters
- ▶ Fits easily in to the confines of the plant room
- ▶ High reliability - ensuring compressed air availability

Florian Braehler concludes, "As with any development of this scale, the impressive design of the fountain is dependent on the engineering and mechanics that make it work. We believe this is a testament to the high reliability and innovative engineering inherent in our compressor portfolio."

About Quantima

Quantima differs to other oil-free compressor technologies thanks to its Q-drive, centrifugal compression assembly. This high-speed motor incorporating direct-driven compression impellers operates with the rotor levitated by active electromagnetic bearings and spinning at up to 60,000 revolutions per minute.

Unlike conventional compressors therefore, Quantima's Q-drive assembly has only one moving part, the rotor shaft, which has no contact and no wear. In addition, Quantima's induction motor design and high frequency inverter mean that no gearbox is required and that the compressor can operate without any oil lubrication.

There are also no contacting parts in the entire Q-drive compression assembly, so, with fewer components and no friction wear, reliability is improved.

About The Dubai Fountain

The Dubai Fountain is the world's tallest performing fountain, located in Downtown Burj Dubai, described as the 'new heart of the city.'

This stellar attraction is located on the 30-acre Burj Dubai Lake, overlooking Burj Dubai, the world's tallest building, and

opening to the Waterfront Promenade of The Dubai Mall, the world's largest shopping and entertainment destination.

The fountain has a unique design made up of five circles of varying sizes and two arcs. It features powerful water nozzles that will shoot water sprays to heights of over 500 ft (150 metres) – equivalent to that of a 50-storey building. Over 6,600 WET Superlights – the most advanced incandescent large fountain lights available today – and 25 colour projectors will create a visual spectrum of over 1,000 different water expressions that will appeal to visitors.

Different combinations of water-forms of The Dubai Fountain perform to selected musical pieces – chosen from a range of classical to contemporary Arabic and world music.



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Florian Braehler
Product Manager Oil-free Compressors