

ENGINEERING
TOMORROW

Danfoss

Case story | SEM-SAFE® high-pressure water mist system

Philipps University in Germany

High-pressure water mist fire protection system for the BSL 4 Laboratory

Danfoss Fire Safety A/S



The BSL 4 (biological safety level 4, the highest safety level for laboratories) laboratory at the Philipps University in Marburg, Germany, researches in viruses and bacteria from ebola, sars and bird flu. A total of 32 different companies have been involved in the development of the new laboratory, and a variety of new technologies, including the SEM-SAFE® high-pressure water mist fire fighting system, have been used in the construction of the building.

In October 2005, the German fire protection company HOENIG Wandhydranten GmbH contacted Danfoss regarding a high-pressure water mist installation for the new laboratory.

The laboratory has a surface of 285 m² inside the building and it is hermetically sealed from the outside world. In December 2007, the laboratory was ready for operation.



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SEM-SAFE®

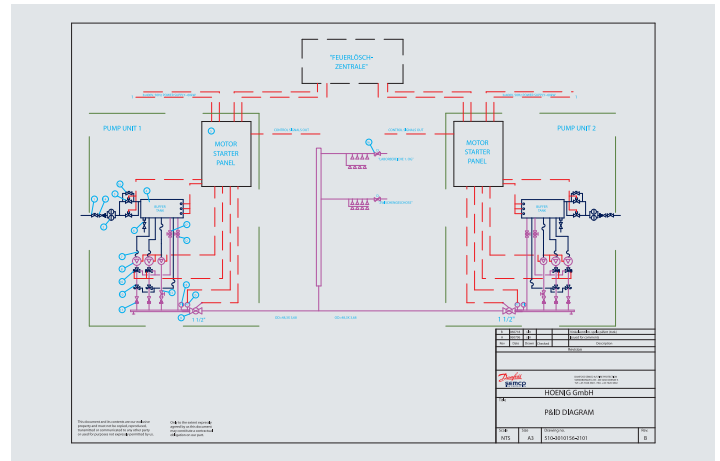
SEM-SAFE® high-pressure water mist system

The SEM-SAFE® system for the building was designed from our full-scale fire tests for public space areas in accordance with the fire suppression tests described in IMO Res. A800 (19). Hence, our type approved water mist nozzle heads were used for this application.

A total of 86 public space SEM-SAFE® high-pressure water mist closed nozzle heads with glass bulbs were supplied and installed at two storeys in the laboratories and surrounding areas.

It was requested that the water mist system should be designed to cover an area of maximum 150 m². Thus, our pump unit should have the capacity to serve a total of 13 SEM-SAFE® nozzle heads released simultaneously. Furthermore, the SEM-SAFE® pump unit should be 100% redundant. Two identical pump units were therefore supplied and installed.

Our corporation with HOENIG Wandhydranten GmbH was a success. In October 2007, the water mist system was approved by the government approval authority Ingenieur- und Sachverständigenbüro für Brandschutz.



P & I Diagram for the system.

SEM-SAFE® pump units, 100% redundancy.