

Hangar Fire Test Facility

CAPABILITY SHEET · LARGE-SCALE FIRE SIMULATION & VALIDATION · ENGINEERED TO ORDER

THE FACILITY

WHAT	A large-scale fire simulation and validation facility in which real, metered, fully instrumented fires are raised so that hangar fire-fighting systems can be validated and performance-evaluated before they are relied on.
STATUS	Engineered to order. Reference design, not yet built. Designed to an Indian government fire-safety research laboratory's specification and passed technical evaluation against it; no order followed, so no commissioned facility is claimed.
SCOPE	Structural design and reinforced-concrete platform, fabrication and erection of the chamber, fuel and ignition train, ventilation, lighting, imaging, instrumentation and control, through commissioning and an evaluation campaign.

SIMULATION CHAMBER

CHAMBER	Cuboidal steel enclosure 40 m x 15 m x 10 m (LxBxH), about 6,000 cubic metres. Rolled-channel support structure, square-framed angle-iron walls with mild-steel panelling, inclined roof, high-temperature fire-resistant coating inside and out.
FOUNDATION	Reinforced-concrete platform with drainage layout, covered channels and sub-floor pop-up nozzles (low and high pressure) - a suppression test discharges a large volume that must be collected.
ACCESS	Two-way motorised insulated doors about 6 m wide x 8.5 m high; toughened-glass viewing windows; 1 m observation and access platform at 5 m height along three sides with stair access.

FIRE, AIR & MEASUREMENT

FUEL & IGNITION	Dual fuel - light diesel oil and LPG. Separate metered legs - liquid via in-line turbine meter and totaliser, gas on its own metering; pressure transmitters 0-16 bar(g) 4-20 mA, glycerine-filled gauges, needle, ball and solenoid valves, stainless wetted parts, steel fire trays and spray nozzles.
VENTILATION	Extraction 2 x 15,000 cfm high-pressure centrifugal with fresh-air supply deliberately set below it at 2 x 12,000 cfm, holding the chamber slightly negative; blower house noise not exceeding 75 dB; fire-proof thermally protected cabling.
IMAGING & DATA	Flame imaging through toughened viewing windows with protected high-output lighting; pressure, flow and temperature channels logged against a common time base, with nominal heat release rate derived from metered fuel flow.

CONTROL & ENGAGEMENT

CONTROL	PLC/SCADA in an insulated, climate-controlled control chamber - test sequencing, interlocks and logging, run from behind observation glass so the operator is never in the enclosure.
SUPPORT FACILITIES	Environmental protection facility for the system under evaluation; assembly and data-analysis chamber 15 x 10 x 3.5 m; lightning protection and dedicated instrument earthing; 36-month warranty from acceptance.
ENGAGEMENT	Send protected volume, fire scenarios and fuels, systems to be evaluated, instrumentation and site services to sales@neometrixgroup.com - compliance matrix within two working days.

PROJECTS DESK

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Reference configuration. Chamber size, fire load, fuel train, ventilation capacity and instrumentation are scoped to the customer's fire scenarios and protected volume, and settled at design review.