

BLE Smoke & Fire Curtains

SPECIFICATION - Model HC1 Fire Curtain (European Standards)

OVERVIEW

The BLE Model HC1 active fire curtains are manufactured from a woven glass fibre fabric with stainless steel wire reinforcement. The fabric is coated on each side with silver polyurethane. The complete curtain assembly is rated at 1000°C for a period of up to 180 minutes for Integrity (E). See Table 1 for size limitations.



The C41000WK fabric is wound onto a 127mm tubular steel roller assembly that incorporates a 24V permanent magnet motor. The roller assembly is fitted inside a galvanised steel head box that can be fixed directly to the structure of the building.

A second roller assembly housed in a galvanised steel flange box at the opposite side of the curtain is used to enable the curtain deployment and retraction. Sides guides, 100mm deep x 50mm wide, incorporating a fabric retaining mechanism are used to limit the deflection of the curtain under the pressure created in a fire and to minimise smoke leakage. A standard bottom bar consisting of 18swg (1.2mm) Mild Steel Octagonal Tube is used to ensure the curtain deploys in a controlled manner. The curtain headbox, side guides and bottom bar can be powder coated in any RAL colour as an optional extra, or can be supplied in stainless steel.

PRODUCT PERFORMANCE

The complete HC1 Fire Curtain system has been tested and assessed by Exova Warringtonfire to BSEN1634 - Part 1: Fire resistance test for door and shutter assemblies and openable windows. The C4100WK fabric has a class 1 surface spread of flame rating when tested to BS 476: Part 7 and a fire propagation index I = 4.4 when tested to BS 476: Part 6. These tests demonstrate compliance with the requirements for Class 0, as defined Approved Document B of the Building Regulations in England.

Table 1 - Designations, size limitations and Fire Resistance Periods for HC1 Fire Curtain

Designation	Single Roller	Multi Roller	Max Width (M)	Max Drop (M)	Fire Resistance (mins)		Test Standard	Certificate / Reports
					Integrity (E)	Irradiance (W)		
Horizontal HC1	Yes	No	6.0	6.0	180	-	BSEN 1634	WF333819 WF333952 WF337802

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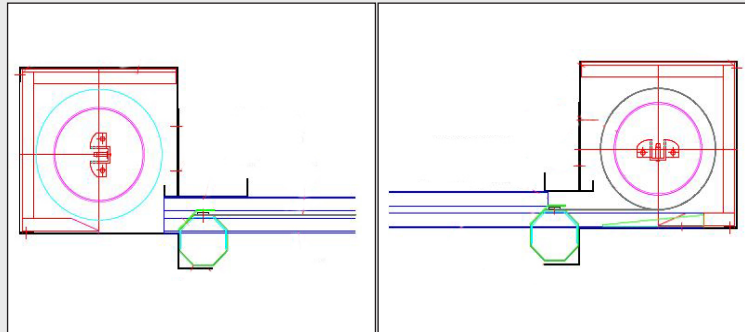


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HEADBOX SIZING

Table 2 gives details of the curtain headbox and flange box sizes required for the HC1 fire curtain.

Table 2 - HC1 Fire Curtain, Headbox sizing guide



Curtain Drop	Single Roller (2N ^o Per Curtain)
< 6m	230mm x 230mm

CONTROL SYSTEMS

A Multi-Function Group Control Panel (GCP) is used to operate each HC1 Fire Curtain, in conjunction with Multi-Function Motor Control Circuits (MCC). 2N^o 24V permanent magnet motors are required to control the deployment and retraction of the curtain.

In normal conditions the GCP provides a 24V supply to the motors and the curtain is held in the closed position in the curtain headbox. When a fire alarm is activated the contact in the GCP is opened, power is removed from the motor in the curtain headbox and applied to the motor in the flange headbox. This drives the controlled deployment of the curtain. When the fire alarm system is reset the GCP reverses the 24v supply to the motors and the curtain is retracted to their normal position in the curtain headbox. The MCC detects when the curtain has fully retracted and the supply voltage to the motor is stepped down to a holding voltage.

In the event of a mains power failure the 2N^o 12v 7ah back-up batteries supplied with the GCP can maintain full control of the system for up to 4-hours. If a fire alarm signal is activated during a mains power failure the Fire Curtains will deploy in a controlled manner as normal.

GROUP CONTROL PANEL (GCP) - FEATURES & OPTIONS

LED status Indicators - LEDs on the front of the Multi-Function GCP display the status of the mains supply, battery charge, alarm and any fault in the CPU. As well as whether any delay timer or override function is active.

Manual override - Facility to temporarily open all the curtains connected to the GCP after deployment, for emergency egress.

Delayed deployment - Programmable timer delay of up to 90 seconds after the fire alarm signal is activated before full deployment of the curtain.

Delayed retraction - Programmable timer delay of up to 90 seconds after the fire alarm signal is reset before retraction of the curtain.

GCP interlinking - Enables multiple GCP's to be connected when more than 6 motors are controlled by one alarm signal, to ensure synchronisation of curtain descent and retraction.

Heat or Smoke detector - Can be used in place of, or in combination with, the main fire alarm signal (Requires a manual reset button).

AV facility - An Audio Visual Unit that activates to warn that the curtains are descending. Sounder beacons can also be used.

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BMS connection - The GCP can be linked to a Building Management System to show the status of mains power, battery charge, alarm, timer delays and manual override.

Table 3 - Horizontal Group Control Panel Options

Feature	Multi-Function GCP
2 x 12v 7ah backup batteries	Yes
Test key switch	Yes
LED status indicators	Yes
Manual override (requires push button)	Yes
Delayed deployment	Yes
Delayed retraction	Yes
GCP interlinking	Yes
Heat or smoke detector with manual reset button	Option
AV connection facility	Option
Building Management System (BMS) connection	Option

GCP SPECIFICATION

Power Input	230Vac 50Hz
Alarm Input	Normally closed. Open on fire alarm activation. Configured to be fail safe.
Dimensions and finish	Hinged door, white painted mild steel enclosure 396mm High x 334mm Wide x 105mm Deep

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HORIZONTAL MOTOR CONTROL CIRCUIT (MCC) - FEATURES

45 / 90 second ascent run timer - For longer curtain drops the run timer can be set to 90 seconds to ensure the curtain retracts fully into the headbox.

Current controlled ascent - When the curtain has fully retracted the motor voltage is reduced. No limit switches are required.

Table 4 - Horizontal Motor Control Circuits

Feature	Multi-Function MCC
45 or 90 second ascent run timer	Yes
Current controlled ascent (no limit switches)	Yes

MCC SPECIFICATION

Input voltage	27Vac / 24Vdc
Output voltage	24Vdc
Dimensions and finish	White painted mild steel enclosure 145mm High x 250mm Wide x 50mm Deep

WARRANTY

A manufacturer's warranty is provided for a period of one year. Exclusions may apply if any element is sublet to an unauthorised party.

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