

SPECIFICATION - Model SD / FC Fire Protective Curtains (UL)

OVERVIEW

The BLE Model SD and Model FC active fire protective curtains are UL recognised and labelled. The system comprises of glass fibre fabric, wound around a steel tube which incorporates a 24V permanent magnet roller. The roller assembly is encased in a galvanised steel headbox, which can then be fixed directly to the structure of the building.

A standard bottom bar consisting of twin 20mm x 20mm x 3mm steel angles is used to ensure the curtain deploys under gravity in a controlled manner (Gravity Fail Safe). Heavier bottom bars may be required for some curtains to ensure correct deployment or to reduce deflection of the curtain due to variations in air pressure.

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.

SD & FC VARIATIONS

All Model FC curtains are supplied with 100mm deep x 50mm wide side guides as standard. These incorporate a fabric retaining mechanism to limit the deflection of the curtain under the pressure created in a fire and to minimise smoke leakage.

Model SD curtains can be supplied with or without side guides. When supplied with side guides Model SD curtains are identical in performance to Model FC curtains. See Table 1 for fire ratings and size limitations.

The SD60 and FC60 curtains use the X32K fabric, which is manufactured with woven glass fibre, coated on each side with a micronised aluminium polymer.

The SD240 and FC240 curtains use the C41000WK fabric, which is manufactured with a stainless steel wire reinforced woven fibre coated on each side with silver polyurethane.

Model FC240 curtains are also available with an egress door, designated FC240ES, with full UL approval. The FC240ES utilises a split bottom bar and partial fastening between the fabric overlaps to allow safe egress through the curtain when the curtain is in the deployed position.

See Table 1 for fire ratings and size limitations.



FC240ES curtain with Egress Door

PERFORMANCE

Integrity options at 1000°C

- 60 minute
- 120 minutes
- 180 minutes

Tested and approved by Underwriters Laboratories LLC to Standards

- UL10D: Fire Tests of Fire Protective Curtain Assemblies
- UL1784: Air Leakage Tests of Door Assemblies and Other Opening Protectives
- UL864: Control Units and Accessories for Fire Alarm Systems
- UL723: Test for Surface Burning Characteristics of Building Materials

ICC Evaluation Report for SD60, for use in elevator hoistway doors and elevator lobbies

- ESR-3322

Table 1 - Designations & Size Limitations

Model	Single Roller	Multi Roller	Max Width (m)	Max Drop (m)	Classification	Test Standard	Certificate / Reports
SD60	Yes	Yes	45.0	12.0	60 mins fire rating	UL 10D UL 1784	20151020-R26410 20120808-R26410 ICC-ESR-3322
SD240	Yes	Yes	45.0	12.0	120 mins fire rating in gypsum	UL 10D UL 1784	20151020-R26410 20120808-R26410
					180 mins fire rating in masonry		
FC60	Yes	Yes	45.0	12.0	60 mins fire rating	UL 10D UL 1784	20151020-R26410 20120808-R26410
FC240	Yes	Yes	45.0	12.0	120 mins fire rating in gypsum	UL 10D UL 1784	20151020-R26410 20120808-R26410
					180 mins fire rating in masonry		
FC240ES with Egress Door	No	Yes	45.0	6.0	120 mins fire rating in gypsum	UL 10D UL 1784	20151020-R26410 20120808-R26410
					180 mins fire rating in masonry		

HEADBOX SIZING

The size of the curtain roller housing (headbox), depends on the curtain drop and width.

Table 2a gives details of the full range of headbox sizes for the Model SD60 and FC60 curtains.

Table 2b gives details of the full range of headbox sizes for the Model SD240 and FC240 series fire protective curtains.

Table 2a - 2018 UL Headbox Sizes SD60 & FC60

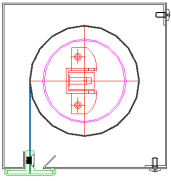
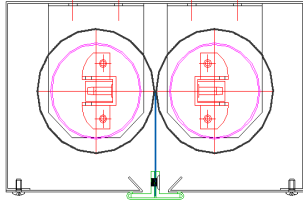
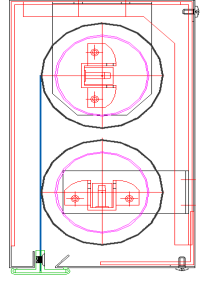
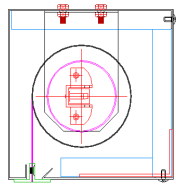
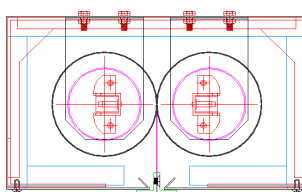
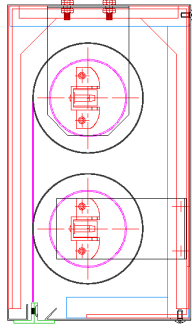
Curtain Drop	 Type A			 Type B			 Type C		
	Single Roller Headbox (Max width 5m)	Side by Side Headbox (Up to 45m)	Over Under Headbox (Up to 45m)	Roller Width (Up to 5m)	Roller Width (Up to 5m)	Roller Width (Up to 5m)			
Up to 1.5m	150x125mm	250x125mm	150x250mm	150x125mm	250x125mm	150x250mm			
1.501m - 3.0m	150x150mm	250x150mm	150x250mm	180x180mm	310x180mm	180x310mm			
3.001m - 6.0m	180x180mm	310x180mm	180x310mm	210x210mm	350x210mm	210x350mm			
6.001m - 9.0m	210x210mm	350x210mm	210x350mm	230x230mm	390x230mm	230x390mm			
9.001m - 12.0m	230x230mm	390x230mm	230x390mm						

Table 2b - 2018 UL Headbox Sizes SD240 & FC240 (For FC240ES contact BLE)

	 Type A		 Type B		 Type C	
	Single Roller Headbox (Max Width 5m)		Side by Side Headbox (Up to 45m)		Over Under Headbox (Up to 45m)	
	Roller Width		Roller Width		Roller Width	
Curtain Drop	Up to 2.5m	Up to 5.0m	Up to 2.5m	Up to 5.0m	Up to 2.5m	Up to 5.0m
Up to 1.5m	150x125mm	150x150mm	250x125mm	250x150mm	150x250mm	150x250mm
1.501m - 3.0m	150x150mm	180x180mm	310x180mm	310x180mm	180x310mm	180x310mm
3.001m - 6.0m	180x180mm	210x210mm	350x210mm	350x210mm	210x350mm	210x350mm
6.001m - 9.0m	210x210mm	230x230mm	390x230mm	390x230mm	230x390mm	230x390mm
9.001m - 12.0m	230x230mm	250x250mm	450x250mm	450x250mm	250x450mm	250x450mm

CONTROL SYSTEMS

A UL Standard Group Control Panel (GCP) is used in conjunction with UL Standard Motor Control Circuits (MCC) to operate up to 5N⁰ 24V permanent magnet motors.

In normal conditions the GCP provides a 24V supply to the motors and the curtains are held in the headbox. When a fire alarm is activated the power is removed from the motors, releasing the curtains to deploy under gravity in a controlled manner (Gravity Fail Safe).

When the fire alarm system is reset the GCP reinstates the 24v supply to the motors and the curtains retract to their normal position in the headbox. Current limiting circuitry 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 2N⁰ 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 curtains will deploy in a controlled manner as normal.

GCP SPECIFICATIONS

Power Input

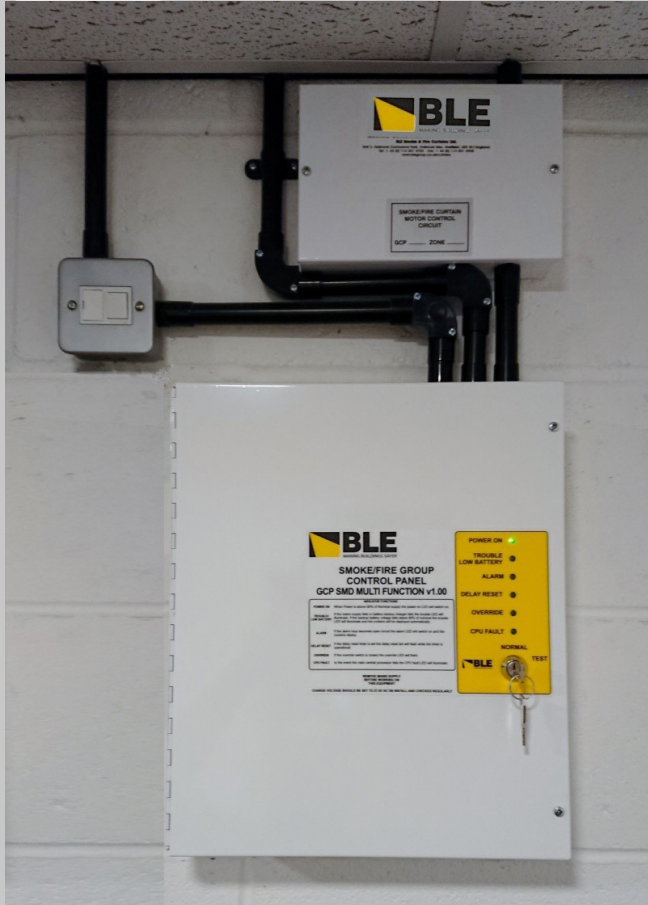
- 120V ac 60Hz
- 230V ac 50Hz

Alarm Input

- Normally closed (Open on fire alarm activation)
- Configured to be fail safe

Finish

- Appliance white painted mild steel enclosure, with hinged door
- 396 x 334 x 105mm (H x W x D)



GCP FEATURES & OPTIONS

LED status Indicators - Displays the status of the mains supply, battery charge, alarm and any fault in the CPU on the Standard GCP. The Multi-Function GCP has extra LEDs that display if a delay timer or override function is active.

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

Two stage descent - Programmable timer delay that deploys the curtain in two stages to allow egress before full deployment of the curtain.

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

Delayed ascent - 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 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.

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.

Curtain released signal - Signal to the BMS to confirm that the curtain has been released.

Table 3 - UL GCP Features

Feature	UL GCP
Controls up to 5 motors	Yes
2x 12V 7Ah Backup Batteries	Yes
Test Key Switch	Yes
LED Status Indicators	Yes
Manual Override (Requires Push Button)	Yes
Two Stage Descent (Requires Brake Motor)	Yes
Delayed Descent	Yes
Delayed Ascent	Yes
GCP Interlinking	Yes
Heat or Smoke Detector (with Manual Reset)	Option
AV Connection Facility	Option
Building Management System (BMS) Facility	Option

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OVERVIEW

Controlled curtain descent - Back electromotive force (EMF) of the curtain motor ensures the controlled gravity fail safe deployment of the curtains.

Ascent run timer - For longer curtain drops the run timer can be set to 90 seconds instead of the normal 45, 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.

Individual Override Interface - Manual override for an individual curtain on a GCP loop which contains multiple curtains. The period of time the curtain remains raised after the IOI is activated can be controlled from 0 -90 seconds.

MCC SPECIFICATIONS

Input Voltage

- 27Vac / 24Vdc

Output Voltage

- 24Vdc

Finish

- Appliance white painted mild steel enclosure, with screwed cover.
- 145 x 250 x 50 (H x W x D)

Table 4 - Standard Motor Control Circuits

Feature	UL MCC
Controlled Curtain Descent	Yes
45 or 90 Second Ascent Run Timer	Yes
Current Controlled Ascent (No Limit Switches)	Yes
Two Stage Descent Facility (requires Brake Motor)	Yes
Individual Override Interface (IOI) (requires Push Button)	Yes

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.

CONTACT

BLE Smoke & Fire Curtains Ltd.
 Unit 3, Holbrook Commerce Park
 Holbrook Rise
 Sheffield
 S20 3FJ
 United Kingdom

E-mail: enquiries@blecurtains.com
 Web: www.ble-smokeandfirecurtains.com



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