BHC – High Capacity Barrel Diffuser

Model: **BHC**

The Holyoake BHC (Barrel High Capacity) is a high capacity barrel diffuser that has been developed to provide a solution when large open areas are to be conditioned. Applications include large retail outlets, gymnasiums, conference centres and factories, or any large space requiring high capacity and long throw diffusion.

The BHC Diffuser has the ability to direct conditioned air to where it is needed. Individually adjustable blades allow the throw direction and spread of the supply jet to be altered. The rotating barrel allows the direction of the supply to be altered vertically. This function can be motorised to provide more efficient heating and cooling functions, as the jet can be directed downwards when the system is in heating mode.

Construction

The BHC diffuser is constructed from aluminium. Two standard sizes are available but longer units may be supplied, if requested. Consult with your local Holyoake branch.

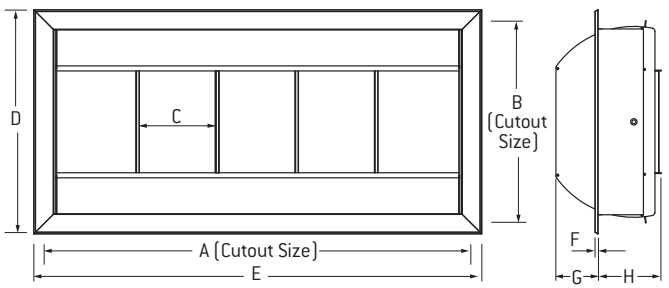
The BHC can be supplied in an anodized, mill or powdercoated finish.

Installation

The BHC is designed to be mounted into a plenum box that may contain a number of the units pointing in different directions.

The 30mm flange allows the unit to be mounted to a plenum using screw fixings through the flange.

Dimensions



Size	Dimension (mm)							
	A	B	C	D	E	F	G	H
635 x 300	672	320	125	352	710	5	67	100
1270 x 300	1308	320	125	352	1342	5	67	100

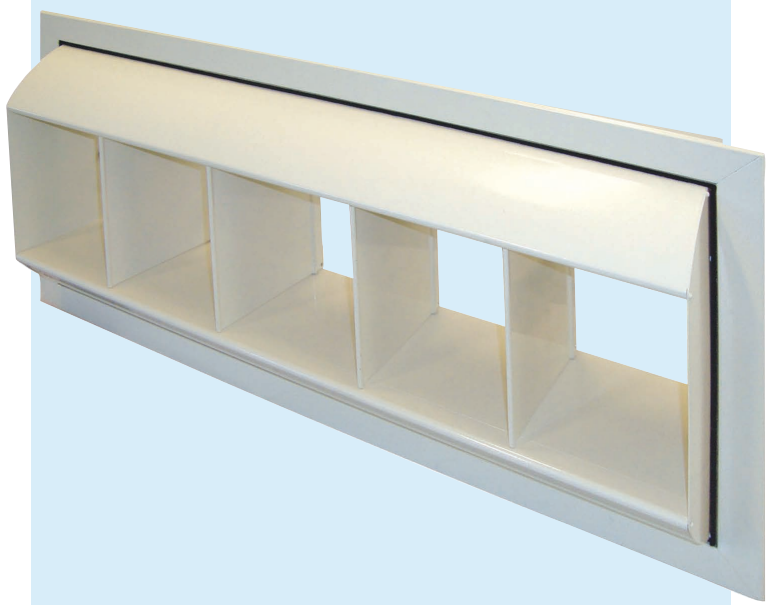
Other sizes may be available, please contact your local Holyoake branch for more information.

Options

Motorised – The facility to electrically rotate the barrel from horizontal, to downwards angled throws, (when in heating mode), can be achieved with either 24, or 230 V AC actuators, fitted internally to the mounting flange, concealing them within the supply plenum.
Thermal – A Thermal Power Pill, can be fitted to achieve the same adjustment as above, without the requirement of an electrical supply. Both options providing greater heating efficiencies.

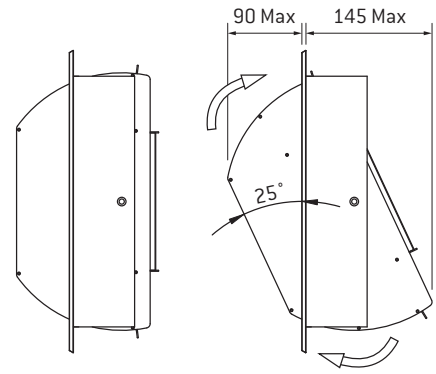
BHC SIZE	Approximate Weight in Kg.
635 x 300	3.08
1270 x 300	6.20
If Motorised add 2 Kg.	

High Capacity Barrel Diffuser



Changing the Direction of Throw

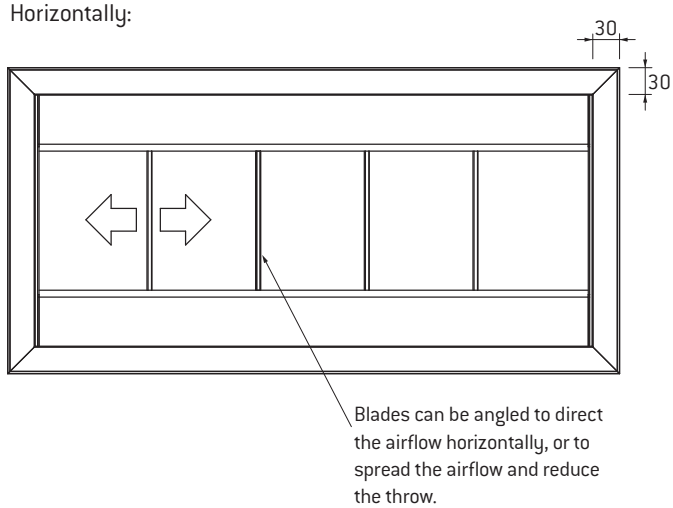
Vertically:



Airflow Horizontal

Angled Downwards or Upwards

Horizontally:



Blades can be angled to direct the airflow horizontally, or to spread the airflow and reduce the throw.

Due to a policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication.

	Size	635 x 300			1270 x 300		
	Deflection	0°	15°	25°	0°	15°	25°
Flow (m^3/s)	Free Area (m^2)	0.091	0.072	0.059	0.100	0.085	0.072
0.280	Velocity at outlet (m/s)	3.5	4.0	4.7			
	Throw to 0.75m/s (m)	4.9	4.3	3.4			
	Pt (Pa)	7	10	14			
	NC	-	-	-			
0.380	Velocity at outlet (m/s)	4.2	5.3	6.4			
	Throw to 0.75m/s (m)	6.7	5.8	4.6			
	Pt (Pa)	13	17	24			
	NC	-	-	-			
0.470	Velocity at outlet (m/s)	5.8	6.6	7.9	2.9	3.3	4.1
	Throw to 0.75m/s (m)	8.5	7.3	6.1	6.4	5.5	4.6
	Pt (Pa)	20	26	38	5	7	10
	NC	-	21	26	-	-	-
0.570	Velocity at outlet (m/s)	7.0	7.9	9.5	3.5	4.0	4.9
	Throw to 0.75m/s (m)	10.1	8.5	7.0	7.0	5.8	4.9
	Pt (Pa)	29	38	55	8	10	14
	NC	22	26	31	-	-	-
0.660	Velocity at outlet (m/s)	8.2	9.2	11.1	4.1	4.6	5.7
	Throw to 0.75m/s (m)	11.3	9.4	7.9	7.6	6.4	5.2
	Pt (Pa)	40	51	74	10	13	20
	NC	27	31	36	-	-	22
0.750	Velocity at outlet (m/s)	9.3	10.5	12.7	4.7	5.3	6.6
	Throw to 0.75m/s (m)	13.1	11.0	9.1	9.1	7.6	6.4
	Pt (Pa)	53	67	97	13	17	26
	NC	31	35	40	-	-	23
0.850	Velocity at outlet (m/s)				5.3	6.0	7.4
	Throw to 0.75m/s (m)				11.6	9.8	8.2
	Pt (Pa)				17	21	33
	NC				-	21	26
0.940	Velocity at outlet (m/s)				5.9	6.6	8.2
	Throw to 0.75m/s (m)				12.5	10.7	8.8
	Pt (Pa)				21	26	40
	NC				20	24	29
1.060	Velocity at outlet (m/s)				6.6	7.5	9.2
	Throw to 0.75m/s (m)				14.0	11.9	9.8
	Pt (Pa)				26	34	51
	NC				24	28	33
1.180	Velocity at outlet (m/s)				7.3	8.3	10.2
	Throw to 0.75m/s (m)				15.2	12.8	10.7
	Pt (Pa)				32	41	63
	NC				27	31	36
1.420	Velocity at outlet (m/s)				8.8	10.0	12.3
	Throw to 0.75m/s (m)				18.3	15.5	12.8
	Pt (Pa)				47	60	91
	NC				32	36	41

Performance Notes

1. All pressures are in pascals. To obtain static pressure subtract velocity pressure from the total pressure data provided.
2. Throw figures are to a terminal velocity of 0.75m/s.
3. The NC values are based on a room absorption of 10dB re 10^{-12} watts.

Corrections To Listed Data.			
Throw in m	0.75m/s	0.50m/s	0.25m/s
Multiplier	1.0	1.5	2.0
Deflection	0°	15°	25°
Multiplier	1.00	0.84	0.70

BHC, DFR, DS & JD

Product Ordering Key and Suggested Specifications

BHC	–	SIZE	–	OPTIONS	–	FINISH
High Capacity Barrel Diffuser		635 x 300 or 1270 x 300		24 V AC or, 230 V AC Actuators / Thermal Power Pill		Mill Aluminium Anodized Aluminium Holyoake White Powder Coat

High Capacity Barrel Diffusers shall be Holyoake Series BHC. They shall be designed to be mounted into a supply plenum that may contain a number of BHC units, which will provide high capacity and long throw diffusion. Adjustment is available to change the vertical and horizontal throw and spread.

Series BHC shall be finished in Mill Aluminium and fitted with accessories where indicated.

All shall be as manufactured by Holyoake.

DFR	–	FINISH
Displacement Floor Mounted Round Diffuser		Black Holyoake White Powder Coat

Displacement Floor Mounted Round Diffusers shall be Holyoake Series DFR. They shall be designed to mount into a supply plenum at floor level and to provide an even distribution of air flow at low velocity, thereby creating a draft-less environment. Pressure drop through the displacement diffusers will be such to provide balance within the supply plenum, while being low enough to generate very low noise levels.

Series DFR Displacement Diffusers shall be circular.

All shall be as manufactured by Holyoake.

DS	–	W x H	–	FLANGE	–	OPTION	–	FINISH
Displacement Step Mounted Diffuser		Hole Size		17mm 25mm		RC Removable Core (25 mm flange only).		Powder Coat Mill Aluminium

Displacement Step Mounted Diffusers shall be Holyoake Series DS. They shall be designed to mount into a supply plenum at floor level and to provide an even distribution of air flow at low velocity, thereby creating a draft-less environment. Pressure drop through the displacement diffusers will be such to provide balance within the supply plenum, while being low enough to generate very low noise levels.

Series DS Displacement Step Mounted Diffusers are designed to be face fixed, or supplied with the Holyoake Removable Core System (25 mm flange only).

All shall be as manufactured by Holyoake.

JD	–	250	–	OPTIONS	–	FINISH
Jet Diffusers		Nominal Size		Mounting Plate (Type 1, 2, 3 or 4)		Holyoake White Mill Aluminium Powder Coat

Circular Jet Diffusers shall be Holyoake Model JD constructed from spun aluminium cones. JD Jet Diffusers shall be capable of operating in either diffused, or jet air pattern configurations. The air patterns shall be achieved by rotating the cone assembly through 180 degrees. JD Jet Diffusers shall be complete with a mounting system suitable for wall, or ceiling applications.

Series JD shall be finished in powder coat and fitted with accessories where indicated.

All shall be as manufactured by Holyoake.

Note

For ceiling applications of JD Diffusers, Seismic Restraints would be required, but not supplied.

JND, EL, EL-P, FSD & TLC-EL

Product Ordering Key and Suggested Specifications

JND – SIZE – FINISH

- JND: Jet Nozzle Diffuser
- SIZE: 160, 200, 250, 360, 400
- FINISH: Powder coat white, special colours available on request

Holyoake Jet nozzle diffusers shall be of spun aluminium construction with a steel concealed mounting system. They shall be designed to supply large air quantities over large throws.

Series JND shall be finished in powder coat and all shall be as manufactured by Holyoake.

FSD — Floor Swirl Diffuser

OPTIONS — Die Cast Aluminium Mill Finish, or, Die Cast Aluminium Powder Coat Finish

Circular floor diffusers shall be Holyoake FSD Series manufactured in glass filled polycarbonate, in self-coloured grey, or black, as standard. Nominal FSD diffuser size shall be 220mm in diameter. The FSD diffuser shall contain a flow regulation damper and the fascia is complete with 'Min/Max' indication.

Series FSD mounting clamp and trim ring shall also be manufactured in glass filled polycarbonate.

FSD diffusers shall contain a dust/dirt collection basket.

All Series FSD materials used are fire retardant and the diffusers shall resist permanent deformation when subject to point loads up to 500 Kg.

All shall be as manufactured by Holyoake.

EL – 2 – S – 300 x 300 – ACCESSORIES – OPTIONS – FINISH

- EL: Series "Eyelash"
- 2: Core Model
- S: Style
- 300 x 300: Duct Size
- ACCESSORIES: OBD-1 Opposed Blade damper
- OPTIONS: RC 25, RC 50, CMF — Removable Core Frame Option
- FINISH: Holyoake White Mill Aluminium Powder Coat

Surface Mounted Eyelash Type

EL surface mounted diffusers shall be of the "Eyelash", or curved blade type. They shall be of extruded aluminium construction, with each blade individually adjustable from the face. Optional opposed blade damper can be adjusted through the face of the diffuser.

All shall be as manufactured by Holyoake

EL – P – 2 – S – 300 x 150 – 600 x 600 – ACCESSORIES – FINISH

- EL: Series "Eyelash"
- P: Panel Lay-in
- 2: Core Model
- S: Style
- 300 x 150: Duct Size
- 600 x 600: Module Size
- ACCESSORIES: OBD-1 Opposed Blade damper
- FINISH: Holyoake White Mill Aluminium Powder Coat

Panel Lay-in Eyelash Type

EL-P Panel Lay-in diffusers shall be of the "Eyelash", or curved blade type. They shall be of extruded aluminium construction, with each blade individually adjustable from the face. Optional opposed blade damper can be adjusted through the face of the diffuser.

All shall be as manufactured by Holyoake.

TLC-EL – 2 – L – 400 x 150 – ACCESSORIES – FINISH

- TLC-EL: Series Curved Frame "Eyelash"
- 2: Core Model
- L: Style
- 400 x 150: Nominal Duct Size
- ACCESSORIES: OBD-1 Opposed Blade damper
- FINISH: Holyoake White Mill Aluminium Powder Coat

Curved Frame Eyelash Type

TLC-EL diffusers shall be of the "Curved Frame Eyelash" type, with curved blades. They shall be of extruded aluminium construction, with each blade adjustable from the face. Optional opposed blade damper can be adjusted through the face of the diffuser.

All shall be as manufactured by Holyoake.

Note

For ceiling applications of EL Diffusers, Seismic Restraints would be required, but not supplied.