

# DF-48 spherical diffuser

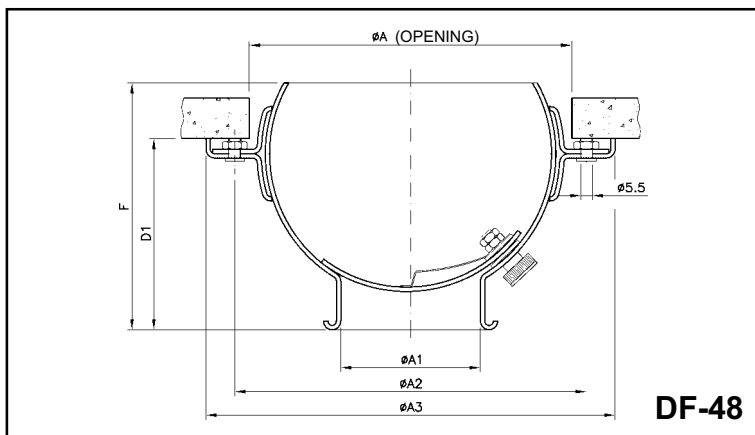
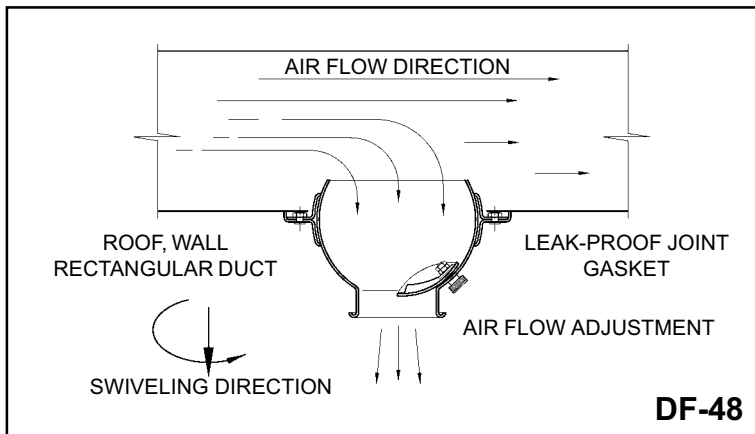


## Description

The **DF-48** long-throw, spherical diffuser in its standard version is manufactured entirely of anodised aluminium with a natural finish. By special order, the diffuser can be painted in any RAL colour. The diffuser has a volume control damper at the outlet.

## Application

The **DF-48** diffusers allow long throws with an acceptable noise level. The diffuser releases an occasional air jet with a throw of over 30 metres. They can be used for spot cooling and are especially appropriate for sport centres, industrial warehouses, clean rooms, recording studios, discotheques and large premises, as well as any area requiring precisely targeted air jets. The configuration allows the diffuser to be swiveled in any direction up to a maximum of  $\pm 35^\circ$  in the horizontal or vertical direction.



## Dimensions and mounting

The diffusers must be attached by screws. The units can be supplied with plenum boxes or a plate fitted in an assembly of up to six units. See dimensions on page 17.

## Identification

Six sizes. The motor drive swivels the diffuser vertically (up and down) within an angle of approximately  $35^\circ$ . For motor-driven operation, a separate motor is required for each diffuser, even in assemblies containing several units.

**DF-48** Spherical long-throw diffuser, manual operation.

**DF-48-C** Spherical long-throw diffuser, manual operation with direct coupling collar to flexible duct.

**3, 5, 8, 12  
16 y 20** Six sizes (see page 19).

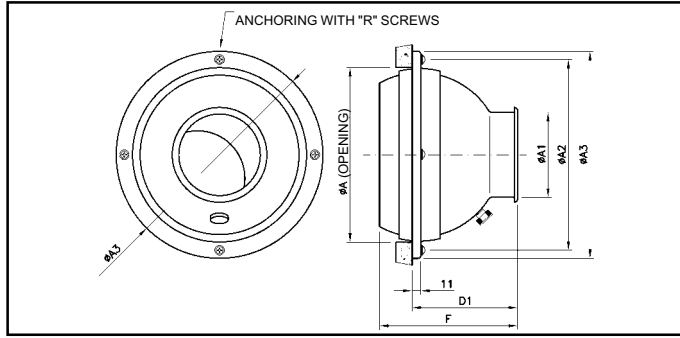
**DF-48-AE** Motor drive.

**AC** Plenum box or mounting plate.

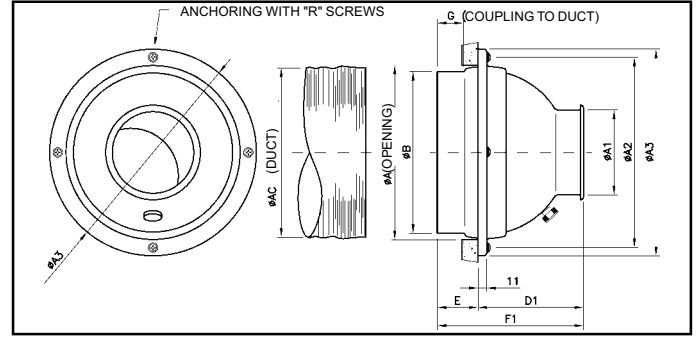
# DF-48 spherical diffuser

# Dimensions

## DF-48 dimensions



## DF-48-C dimensions



### DF-48

MODEL	$\phi A$	$\phi A1$	$\phi A2$	$\phi A3$	D1	F	R
3	80	40	107	133	44	50	3
5	142	65	162	184	91	115	4
8	209	100	232	253	129	169	4
12	318	165	336	358	201	265	6
16	425	230	444	474	249	353	8
20	500	300	526	554	296	421	8

### DF-48-C

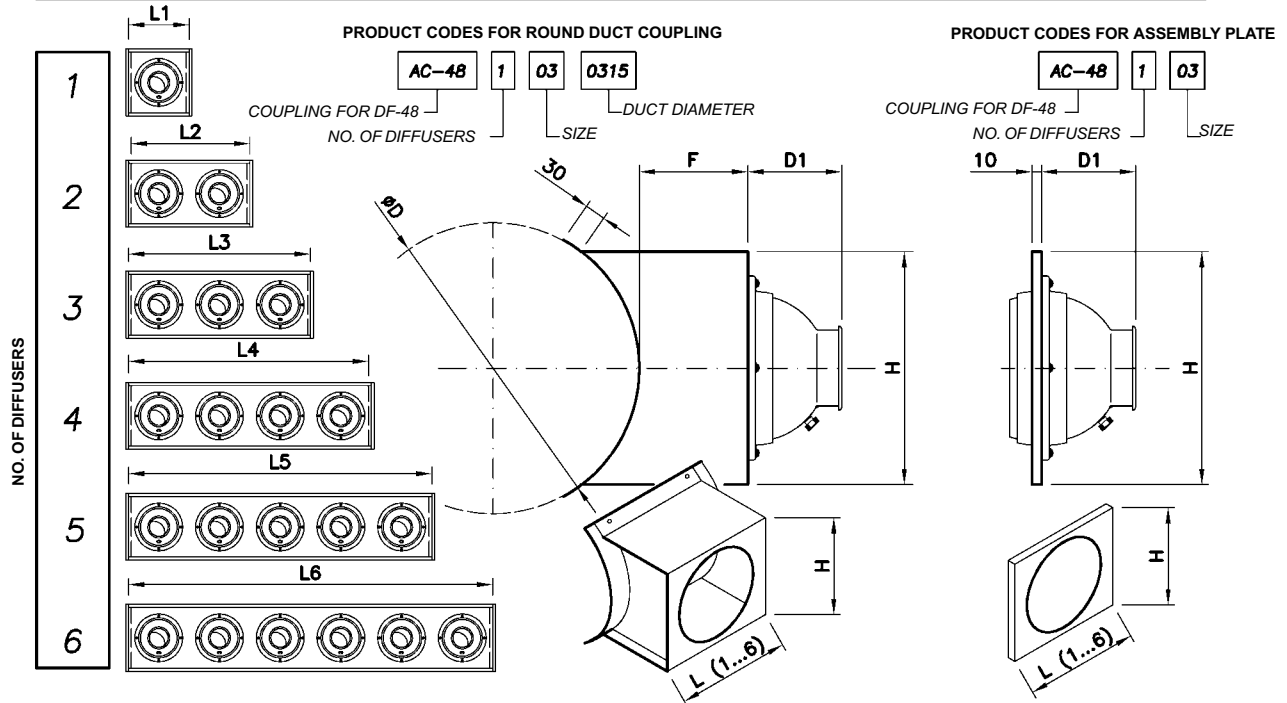
MODEL	$\phi A$	$\phi A1$	$\phi A2$	$\phi A3$	$\phi AC$	D1	E	F1	G	R
3	80	40	107	133	63	44	26	70	25	3
5	142	65	162	184	125	91	49	140	30	4
8	209	100	232	253	200	129	50	179	34	4
12	318	165	336	358	315	201	74	275	50	6
16	425	230	444	474	400	249	114	363	61	8
20	500	300	526	554	500	296	136	432	61	8

## Dimensions of plenum boxes for connection to round duct

## Dimensions of plates with diffuser assemblies

■ — DIAMETERS FOR WHICH THE EQUIPMENT IS MANUFACTURED

MODEL	DUCT DIAMETER											OVERALL DIMENSIONS											
	250	315	355	400	450	500	560	630	710	800	900	1000	1200	1500	L1	L2	L3	L4	L5	L6	F	D1	H
3"	■	■	■	■	■	■	■	■	■	■	■	■	■	■	200	400	600	800	1000	1200	100	44	200
5"		■	■	■	■	■	■	■	■	■	■	■	■	■	250	500	750	1000	1250	1500	120	91	250
8"			■	■	■	■	■	■	■	■	■	■	■	■	360	720	1080	1440	1800	2160	150	129	360
12"				■	■	■	■	■	■	■	■	■	■	■	470	940	1410	1880	2350	2820	180	201	470
16"					■	■	■	■	■	■	■	■	■	■	630	1260	1890	2520	3150	3780	220	249	630
20"						■	■	■	■	■	■	■	■	■	700	1400	2100	2800	3500	4200	250	296	700



# DF-48 selection table

Q		Size	3	5	8	12	16	20										
(m <sup>3</sup> /h)	(l/s)	A <sub>k</sub> (m <sup>2</sup> )	0,0013	0,0033	0,0079	0,0214	0,0415	0,0707										
25	6,9	V <sub>k</sub> (m/s)	5,3			2,1												
		X <sub>0,3</sub> X <sub>0,5</sub> X <sub>1,0</sub> (m)	3,3	2,0	1,0	2,1	1,3	0,6										
		ΔP <sub>t</sub> (Pa)	17			3												
		L <sub>wA</sub> - dB(A)	<15			<15												
50	13,9	V <sub>k</sub> (m/s)	10,7			4,2												
		X <sub>0,3</sub> X <sub>0,5</sub> X <sub>1,0</sub> (m)	6,7	4,0	2,0	4,2	2,5	1,3										
		ΔP <sub>t</sub> (Pa)	68			11												
		L <sub>wA</sub> - dB(A)	25			<15												
100	27,8	V <sub>k</sub> (m/s)	21,4			8,4			3,5									
		X <sub>0,3</sub> X <sub>0,5</sub> X <sub>1,0</sub> (m)	13,4	8,0	4,0	8,4	5,0	2,5	5,4 3,3 1,6									
		ΔP <sub>t</sub> (Pa)	274			43			7									
		L <sub>wA</sub> - dB(A)	46			22			<15									
250	69,4	V <sub>k</sub> (m/s)			21,0	8,8			3,2									
		X <sub>0,3</sub> X <sub>0,5</sub> X <sub>1,0</sub> (m)			21,0	12,6	6,3	13,5	8,1	4,1	8,2	4,9	2,5					
		ΔP <sub>t</sub> (Pa)			266			46			6							
		L <sub>wA</sub> - dB(A)			50			27			<15							
500	138,9	V <sub>k</sub> (m/s)				17,6			6,5			3,3						
		X <sub>0,3</sub> X <sub>0,5</sub> X <sub>1,0</sub> (m)				27,1	16,3	8,1	16,5	9,9	4,9	11,8	7,1	3,5				
		ΔP <sub>t</sub> (Pa)				185			25			7						
		L <sub>wA</sub> - dB(A)				48			22			<15						
750	208,3	V <sub>k</sub> (m/s)							9,7			5,0			2,9			
		X <sub>0,3</sub> X <sub>0,5</sub> X <sub>1,0</sub> (m)							24,7	14,8	7,4	17,7	10,6	5,3	13,6	8,1	4,1	
		ΔP <sub>t</sub> (Pa)							57			15			5			
		L <sub>wA</sub> - dB(A)							34			17			<15			
1250	347,2	V <sub>k</sub> (m/s)							16,2			8,4			4,9			
		X <sub>0,3</sub> X <sub>0,5</sub> X <sub>1,0</sub> (m)							>30	24,7	12,3	29,5	17,7	8,9	22,6	13,6	6,8	
		ΔP <sub>t</sub> (Pa)							158			42			14			
		L <sub>wA</sub> - dB(A)							50			33			19			
2000	555,6	V <sub>k</sub> (m/s)										13,4			7,9			
		X <sub>0,3</sub> X <sub>0,5</sub> X <sub>1,0</sub> (m)										>30	28,4	14,2	>30	21,7	10,9	
		ΔP <sub>t</sub> (Pa)										108			37			
		L <sub>wA</sub> - dB(A)										47			33			
2750	763,9	V <sub>k</sub> (m/s)														10,8		
		X <sub>0,3</sub> X <sub>0,5</sub> X <sub>1,0</sub> (m)													>30	29,9	14,9	
		ΔP <sub>t</sub> (Pa)													70			
		L <sub>wA</sub> - dB(A)													43			
3500	972,2	V <sub>k</sub> (m/s)														13,8		
		X <sub>0,3</sub> X <sub>0,5</sub> X <sub>1,0</sub> (m)													>30	>30	19,0	
		ΔP <sub>t</sub> (Pa)													113			
		L <sub>wA</sub> - dB(A)													50			

## Notes

- This selection table is based on laboratory tests as per ISO 5219 (UNE 100.710) and ISO 5135 and 3741 standards.
- Δt is equal to 0°C (isothermal air).
- The behaviour of the air jet with different Dt is shown in the following charts.

## Symbols

- Q = Air flow
- V<sub>k</sub> = Effective velocity
- A<sub>k</sub> = Effective area
- ΔP<sub>t</sub> = Total pressure drop
- L<sub>wA</sub> = Sound power
- X<sub>0,3</sub> - X<sub>0,5</sub> - X<sub>1,0</sub> = Throw for a terminal air velocity of 0.3, 0.5 and 1.0 m/s, respectively.

# DF-48 model

## Selection charts

DF-48-1.- Maximum vertical penetration.

