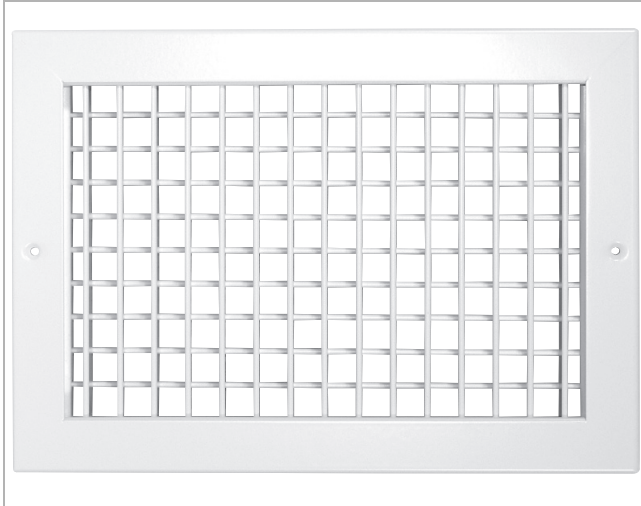




# Grilles

# DDG



## Description

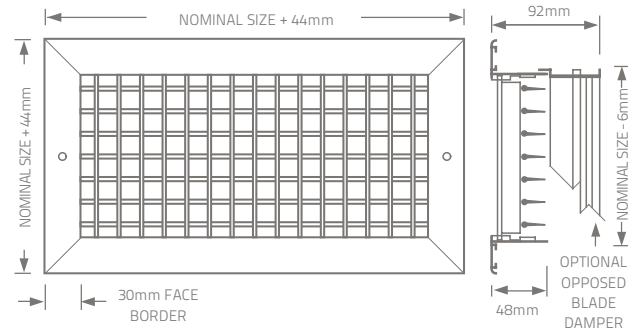
Double Deflection Grilles are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern where as horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

## Features

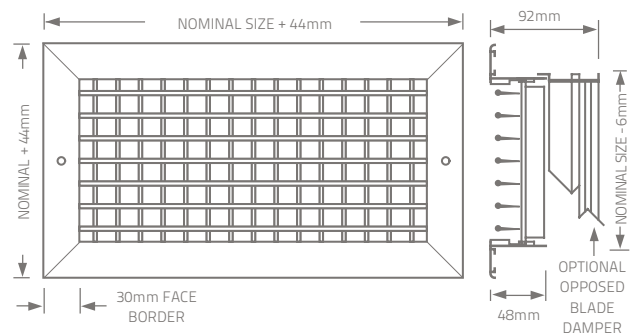
- High quality, extruded aluminium construction.
- 30mm wide face border with a 25mm overlap margin standard, supplied with countersunk screw holes and mounting screws. NF Narrow Frame with 25mm face border optional. Concealed mounting is optional.
- Rigid extruded aluminium frames with reinforced mitred corners.
- Streamlined shaped extruded blades on 19mm centres. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Integral dampers - aluminium. Opposed blade design with a screwdriver slot operator.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- White polyester powder finish RAL 9010 semi-gloss is standard. Other finishes are available.
- Standard sizes are available from 100mm x 100mm to 1200mm x 1200mm in single section construction. Other sizes, including multiple section assemblies, are available on request but are subject to manufacturing limitations.
- Mullions are fitted to grilles above 450mm on both height and width

## Dimensions

### Vertical



### Horizontal



Available in sizes 100 - 600mm

## Ordering example

DDGW - Double deflection grille in white  
 DDGS - Double deflection grille in silver  
 DDGD - Double deflection grille with damper in silver  
 DDGDW - Double deflection grille with damper in white



# Grilles

# DDG

## Performance Data

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (m <sup>2</sup> )	Core Velocity (m/s)								
			1.5	2	2.5	3	3.5	4	5		
			0°	4	7	10	15	20	27	41	
			Pressure Drop (Pa)								
			22.5°	4	8	12	17	23	31	48	
			45°	7	12	18	26	36	47	72	
150x150	200x100 250x100	0.02	Flowrate (l/s)	28	38	47	57	66	76	94	
			NC Level	—	—	—	14	19	23	29	
			Throw (m)	0°	1.1 - 3.0	1.7 - 3.9	2.7 - 4.5	3.3 - 5.1	3.6 - 5.4	3.9 - 6.0	4.5 - 6.6
			22.5°	0.8 - 2.0	1.1 - 3.0	2.0 - 3.3	2.4 - 3.9	2.7 - 4.2	3.0 - 4.5	3.3 - 5.1	
			45°	0.2 - 1.1	0.5 - 1.4	0.8 - 1.7	1.1 - 2.0	1.4 - 2.4	1.4 - 2.7	1.7 - 3.0	
200x150	250x125 300x100	0.03	Flowrate (l/s)	38	51	64	76	89	102	127	
			NC Level	—	—	10	15	20	24	30	
			Throw (m)	0°	1.4 - 3.6	2.7 - 4.5	3.3 - 5.1	3.9 - 6.0	4.5 - 6.6	4.8 - 7.2	5.4 - 8.1
			22.5°	0.8 - 2.7	2.0 - 3.3	2.4 - 3.9	3.0 - 4.5	3.3 - 5.1	3.6 - 5.7	4.2 - 6.3	
			45°	0.2 - 1.4	0.8 - 1.7	1.1 - 2.0	1.4 - 2.7	1.7 - 3.0	2.0 - 3.3	2.4 - 3.6	
250x150	300x125 400x100	0.03	Flowrate (l/s)	50	66	83	99	116	132	165	
			NC Level	—	—	11	16	21	25	31	
			Throw (m)	0°	1.7 - 4.5	3.0 - 5.4	3.9 - 6.3	4.8 - 6.9	5.1 - 7.5	5.4 - 8.1	6.0 - 9.1
			22.5°	1.1 - 3.3	2.0 - 4.2	3.0 - 4.8	3.6 - 5.4	3.9 - 5.7	4.2 - 6.3	4.5 - 6.9	
			45°	0.5 - 1.7	1.1 - 2.4	1.4 - 2.7	2.0 - 3.0	2.0 - 3.3	2.4 - 3.6	2.7 - 4.2	
200x200	350x125	0.04	Flowrate (l/s)	54	72	90	108	126	143	179	
			NC Level	—	—	12	17	22	26	32	
			Throw (m)	0°	1.7 - 4.8	3.3 - 5.7	3.9 - 6.6	4.8 - 7.2	5.4 - 7.8	5.7 - 7.8	6.3 - 9.4
			22.5°	1.1 - 3.6	2.4 - 4.5	3.0 - 5.1	3.6 - 5.7	4.2 - 6.0	4.5 - 6.9	4.8 - 7.2	
			45°	0.5 - 2.0	1.1 - 2.4	1.4 - 3.0	2.0 - 3.3	2.4 - 3.6	2.4 - 3.9	2.7 - 4.2	
300x150	450x100	0.04	Flowrate (l/s)	59	79	99	119	139	159	198	
			NC Level	—	—	12	17	22	26	32	
			Throw (m)	0°	1.7 - 5.8	3.3 - 5.7	3.9 - 6.6	4.8 - 7.2	5.4 - 8.1	5.7 - 8.8	6.3 - 9.4
			22.5°	1.1 - 4.6	2.4 - 4.5	3.0 - 5.1	3.6 - 5.7	4.2 - 6.3	4.5 - 6.9	4.8 - 7.2	
			45°	0.5 - 3.0	1.1 - 2.4	1.4 - 3.0	2.0 - 3.3	2.4 - 3.6	2.4 - 3.9	2.7 - 4.2	
350x150	250x200	0.05	Flowrate (l/s)	71	94	118	142	165	189	236	
			NC Level	—	—	13	18	23	27	33	
			Throw (m)	0°	2.4 - 5.1	3.6 - 6.0	4.5 - 6.6	5.1 - 7.5	5.7 - 8.4	6.0 - 9.1	6.6 - 10.0
			22.5°	1.7 - 3.9	2.7 - 4.5	3.3 - 5.1	3.9 - 5.7	4.5 - 6.6	4.5 - 6.9	5.1 - 7.8	
			45°	0.8 - 2.0	1.4 - 2.7	1.7 - 3.0	2.0 - 3.3	2.4 - 3.9	2.7 - 4.2	3.0 - 4.5	
300x200	400x150 600x100	0.05	Flowrate (l/s)	82	109	137	164	192	219	274	
			NC Level	—	—	14	19	24	28	34	
			Throw (m)	0°	2.4 - 5.4	3.6 - 6.3	4.8 - 7.2	5.4 - 8.1	6.0 - 8.8	6.3 - 9.4	7.2 - 10.6
			22.5°	1.7 - 4.2	2.7 - 4.8	3.6 - 5.7	4.2 - 6.3	4.5 - 6.9	4.8 - 7.2	5.7 - 8.1	
			45°	0.8 - 2.4	1.4 - 2.7	2.0 - 3.3	2.4 - 3.6	2.7 - 3.9	2.7 - 4.2	3.3 - 4.8	
250x250	350x175 650x100	0.06	Flowrate (l/s)	86	115	144	173	202	230	241	
			NC Level	—	—	14	19	24	28	34	
			Throw (m)	0°	2.4 - 5.4	3.9 - 6.3	4.8 - 7.5	5.4 - 8.1	6.0 - 8.8	6.3 - 9.7	7.5 - 10.9
			22.5°	1.7 - 4.2	3.0 - 4.8	3.6 - 5.7	4.2 - 6.3	4.5 - 6.9	4.8 - 7.5	5.7 - 8.4	
			45°	0.8 - 2.4	1.4 - 2.7	2.0 - 3.3	2.4 - 3.6	2.7 - 3.9	2.7 - 4.5	3.3 - 5.1	
300x250	500x150 600x125	0.07	Flowrate (l/s)	105	140	175	210	244	279	349	
			NC Level	—	—	15	20	25	29	35	
			Throw (m)	0°	3.0 - 6.3	4.2 - 7.2	5.4 - 8.4	6.3 - 9.1	6.9 - 10.0	7.2 - 10.9	8.4 - 12.1
			22.5°	2.0 - 4.8	3.3 - 5.7	4.3 - 6.6	4.8 - 6.9	5.4 - 7.8	5.7 - 8.4	6.6 - 9.4	
			45°	1.1 - 2.7	1.7 - 3.3	2.4 - 3.9	2.7 - 4.2	3.0 - 4.5	3.3 - 5.1	3.9 - 5.7	
550x150	400x200 700x125 900x100	0.07	Flowrate (l/s)	113	151	189	227	264	302	378	
			NC Level	—	—	16	21	26	30	36	
			Throw (m)	0°	3.0 - 6.6	4.5 - 7.5	5.7 - 8.8	6.6 - 9.7	7.2 - 10.6	7.5 - 11.5	8.8 - 12.7
			22.5°	2.0 - 5.1	3.3 - 5.7	4.5 - 6.9	5.1 - 7.5	5.7 - 8.1	5.7 - 9.1	6.9 - 10.0	
			45°	1.1 - 3.0	1.7 - 3.3	2.4 - 3.9	3.0 - 4.5	3.3 - 5.4	3.3 - 5.4	3.9 - 6.0	
300x300	350x250 450x200 600x150 950x100	0.08	Flowrate (l/s)	127	170	212	255	297	340	425	
			NC Level	—	—	16	21	26	30	36	
			Throw (m)	0°	3.3 - 6.9	4.5 - 7.8	6.0 - 9.1	6.9 - 10.0	7.2 - 10.9	7.8 - 11.8	9.1 - 13.3
			22.5°	2.4 - 5.4	3.3 - 6.0	4.5 - 6.9	5.4 - 7.8	5.7 - 8.4	6.0 - 9.4	6.9 - 10.6	
			45°	1.1 - 3.0	1.7 - 3.6	2.7 - 4.2	3.0 - 4.5	3.3 - 5.1	3.6 - 5.4	4.2 - 6.3	
450x250	750x150	0.10	Flowrate (l/s)	160	213	267	320	373	427	533	
			NC Level	—	10	17	22	27	31	37	
			Throw (m)	0°	3.6 - 7.8	5.1 - 9.1	6.6 - 10.0	7.8 - 11.2	8.1 - 12.1	9.1 - 13.0	10.0 - 14.5
			22.5°	2.7 - 6.0	3.9 - 6.9	5.1 - 7.8	6.0 - 8.8	6.3 - 9.4	6.9 - 10.3	7.8 - 11.5	
			45°	1.4 - 3.6	2.0 - 4.2	3.0 - 4.5	3.6 - 5.1	3.6 - 5.7	4.2 - 6.0	4.5 - 6.9	
350x350	400x300 500x250 600x200 850x150	0.12	Flowrate (l/s)	176	234	293	351	410	468	585	
			NC Level	—	10	17	22	27	31	37	
			Throw (m)	0°	4.5 - 9.1	6.6 - 10.9	7.8 - 11.8	9.1 - 13.3	10.0 - 14.5	10.9 - 15.5	11.8 - 17.3
			22.5°	3.3 - 6.9	5.1 - 8.4	6.0 - 9.4	6.9 - 10.6	7.8 - 11.5	8.4 - 12.1	9.4 - 13.6	
			45°	1.7 - 4.2	3.0 - 5.1	3.6 - 5.4	4.2 - 6.3	4.5 - 6.9	5.1 - 7.2	5.4 - 8.1	



## Grilles

## DDG

## Performance Data

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (m <sup>2</sup> )	Core Velocity (m/s)							
			1.5	2	2.5	3	3.5	4	5	
			Pressure Drop (Pa)							
			0°	4	7	10	15	20	27	41
			22.5°	4	8	12	17	23	31	48
			45°	7	12	18	26	36	47	72
450x300	400x350	0.13	Flowrate (l/s)	194	259	323	388	453	517	647
			NC Level	—	11	18	23	28	32	38
	Throw (m)		0°	4.5 - 9.1	6.6 - 10.9	8.1 - 12.1	9.1 - 13.3	10.0 - 14.5	7.8 - 15.5	12.1 - 17.6
			22.5°	3.3 - 6.9	5.1 - 8.4	6.3 - 9.4	6.9 - 10.6	7.8 - 11.5	8.4 - 12.1	9.4 - 13.9
550x250 700x200 950x150	0.14	45°	1.7 - 4.2	3.0 - 5.1	3.6 - 5.7	4.2 - 6.3	4.5 - 6.9	5.1 - 7.2	5.7 - 8.4	
		Flowrate (l/s)	215	287	359	430	502	574	717	
		NC Level	—	11	18	23	28	32	38	
600x254	500x300	0.14	Flowrate (l/s)	215	287	359	430	502	574	717
			NC Level	—	11	18	23	28	32	38
	Throw (m)		0°	4.8 - 9.7	6.6 - 11.5	8.8 - 12.7	9.7 - 14.2	10.6 - 15.2	11.5 - 16.4	11.5 - 18.5
			22.5°	3.6 - 7.5	5.1 - 9.1	6.9 - 10.0	7.5 - 11.2	8.1 - 11.8	9.1 - 13.0	10.0 - 14.5
750x200	0.15	45°	2.0 - 4.5	3.0 - 5.4	3.9 - 6.0	4.5 - 6.6	4.8 - 7.2	5.4 - 7.8	6.0 - 8.8	
		Flowrate (l/s)	232	310	387	464	542	619	774	
		NC Level	—	11	18	23	28	32	38	
400x400	450x350	0.15	Flowrate (l/s)	232	310	387	464	542	619	774
			NC Level	—	11	18	23	28	32	38
	Throw (m)		0°	5.1 - 10.6	6.9 - 11.8	8.8 - 13.3	10.3 - 14.5	11.2 - 16.1	11.8 - 17.0	13.3 - 19.4
			22.5°	3.9 - 8.1	5.4 - 9.4	6.9 - 10.6	8.1 - 11.5	8.8 - 12.7	9.4 - 13.3	10.6 - 15.5
550x300 750x200	0.17	45°	2.0 - 4.8	3.0 - 5.4	3.9 - 6.3	4.8 - 6.9	5.1 - 7.5	5.4 - 8.1	6.3 - 9.4	
		Flowrate (l/s)	262	349	437	524	611	698	873	
		NC Level	—	12	19	24	29	33	39	
600x300	450x400	0.17	Flowrate (l/s)	262	349	437	524	611	698	873
			NC Level	—	12	19	24	29	33	39
	Throw (m)		0°	5.1 - 10.6	7.2 - 12.4	9.1 - 13.6	10.6 - 15.5	11.2 - 16.7	12.4 - 17.9	13.6 - 20.0
			22.5°	3.9 - 8.1	5.7 - 9.7	6.9 - 10.6	8.1 - 12.1	8.8 - 13.0	9.7 - 14.2	9.7 - 15.8
550x300 750x250 900x200	0.20	45°	2.0 - 4.8	3.3 - 5.7	4.2 - 6.3	4.8 - 7.2	5.1 - 7.8	5.7 - 8.4	6.3 - 9.7	
		Flowrate (l/s)	297	396	495	595	694	793	991	
		NC Level	—	12	19	24	29	33	39	
450x450	500x400	0.20	Flowrate (l/s)	297	396	495	595	694	793	991
			NC Level	—	12	19	24	29	33	39
	Throw (m)		0°	5.4 - 11.2	7.8 - 13.3	10.0 - 14.8	11.2 - 16.4	12.1 - 17.9	13.3 - 19.1	14.8 - 21.6
			22.5°	4.2 - 8.8	6.0 - 10.6	7.8 - 11.8	8.8 - 13.0	9.4 - 14.2	10.6 - 15.2	11.8 - 17.0
600x350 700x300 800x250	0.22	45°	2.4 - 5.1	3.6 - 6.3	4.5 - 6.9	5.1 - 7.8	5.7 - 8.4	6.3 - 9.1	6.9 - 10.3	
		Flowrate (l/s)	328	438	547	657	766	876	1095	
		NC Level	—	13	20	25	30	34	40	
750x300	500x450	0.22	Flowrate (l/s)	328	438	547	657	766	876	1095
			NC Level	—	13	20	25	30	34	40
	Throw (m)		0°	6.0 - 12.1	8.4 - 14.2	10.9 - 16.1	12.1 - 17.6	13.3 - 19.4	14.2 - 20.6	16.1 - 23.1
			22.5°	4.5 - 9.4	6.6 - 11.2	8.4 - 12.7	9.4 - 13.9	10.6 - 15.5	11.2 - 16.4	12.7 - 18.2
550x400 650x350 900x250	0.23	45°	2.7 - 5.7	3.9 - 6.6	5.1 - 7.5	5.7 - 8.4	6.3 - 9.4	6.6 - 10.0	7.5 - 11.2	
		Flowrate (l/s)	354	472	590	708	826	944	1180	
		NC Level	—	13	20	25	30	34	40	
600x400	800x300	0.23	Flowrate (l/s)	354	472	590	708	826	944	1180
			NC Level	—	13	20	25	30	34	40
	Throw (m)		0°	6.3 - 12.7	8.8 - 14.8	11.2 - 16.7	12.7 - 18.5	13.9 - 19.7	14.8 - 21.6	16.7 - 24.0
			22.5°	4.8 - 10.0	6.9 - 11.8	8.8 - 13.0	10.0 - 14.5	10.9 - 15.5	11.8 - 17.0	13.0 - 19.1
500x500	NC Level	0.24	45°	2.7 - 6.0	3.9 - 6.9	5.1 - 7.8	6.0 - 8.8	6.6 - 9.4	6.9 - 10.3	7.8 - 11.5
			Flowrate (l/s)	369	493	616	739	862	985	1232
			NC Level	—	13	20	25	30	34	40
500x500	550x450	0.24	Flowrate (l/s)	369	493	616	739	862	985	1232
			NC Level	—	13	20	25	30	34	40
	Throw (m)		0°	6.3 - 13.0	8.8 - 14.8	11.5 - 16.7	13.0 - 18.8	14.2 - 20.3	15.2 - 21.9	17.0 - 24.6
			22.5°	4.8 - 10.3	6.9 - 11.8	8.8 - 13.0	10.3 - 14.8	11.2 - 16.1	11.8 - 17.3	13.3 - 19.4
650x400 750x350	0.26	45°	2.7 - 6.0	3.9 - 7.2	5.4 - 8.1	6.0 - 9.1	6.6 - 9.7	7.2 - 10.6	8.1 - 11.8	
		Flowrate (l/s)	395	527	658	790	922	1053	1317	
		NC Level	—	13	20	25	30	34	40	
900x300	550x500	0.26	Flowrate (l/s)	395	527	658	790	922	1053	1317
			NC Level	—	13	20	25	30	34	40
	Throw (m)		0°	6.6 - 13.6	9.4 - 15.8	11.8 - 17.6	13.6 - 19.7	14.5 - 21.3	15.8 - 22.5	17.6 - 25.2
			22.5°	5.1 - 10.6	7.2 - 12.4	9.4 - 13.9	10.6 - 15.5	12.4 - 17.9	12.4 - 17.9	13.9 - 20.0
600x450 650x400 750x350	0.29	45°	3.0 - 6.3	4.2 - 7.5	5.4 - 8.4	6.3 - 9.4	7.5 - 10.9	7.5 - 10.9	8.4 - 12.1	
		Flowrate (l/s)	449	598	748	898	1047	1197	1496	
		NC Level	—	14	21	26	31	35	41	
550x550	600x500	0.29	Flowrate (l/s)	449	598	748	898	1047	1197	1496
			NC Level	—	14	21	26	31	35	41
	Throw (m)		0°	7.2 - 14.2	10.0 - 16.7	12.7 - 18.8	14.2 - 20.6	15.5 - 22.5	16.7 - 24.0	18.8 - 27.0
			22.5°	5.7 - 11.2	7.2 - 12.4	9.4 - 13.9	10.6 - 15.5	11.2 - 16.4	12.1 - 17.9	13.0 - 19.1
750x400 1000x300	0.33	45°	3.3 - 6.6	4.5 - 7.8	6.0 - 9.1	6.6 - 10.0	7.2 - 10.9	7.8 - 11.5	9.1 - 13.0	
		Flowrate (l/s)	501	668	835	1002	1169	1336	1671	
		NC Level	—	14	21	26	31	35	41	
750x450	600x550	0.33	Flowrate (l/s)	501	668	835	1002	1169	1336	1671
			NC Level	—	14	21	26	31	35	41
	Throw (m)		0°	7.5 - 15.2	10.3 - 17.6	13.3 - 20.0	15.2 - 21.9	16.4 - 23.7	17.6 - 25.2	20.0 - 28.6
			22.5°	5.7 - 11.8	8.1 - 13.9	10.6 - 15.8	11.8 - 17.3	13.0 - 18.8	13.9 - 20.0	15.8 - 22.8
850x400 1000x350	0.35	45°	3.3 - 7.2	4.8 - 8.4	6.3 - 9.7	7.2 - 10.6	7.8 - 11.5	8.4 - 12.1	15.2 - 13.9	
		Flowrate (l/s)	537	715	894	1073	1252	1431	1789	
		NC Level	—	13	20	25	30	34	40	
600x600	650x550	0.35	Flowrate (l/s)	537	715	894	1073	1252	1431	1789
			NC Level	—	13	20	25	30	34	40
	Throw (m)		0°	7.8 - 15.8	10.9 - 17.9	13.6 - 20.3	15.8 - 22.5	17.0 - 24.3	17.9 - 26.1	20.3 - 29.2
			22.5°	6.0 - 12.4	8.4 - 14.2	10.6 - 16.1	12.4 - 17.9	13.3 - 19.1	14.2 - 20.6	16.1 - 23.1
700x500 800x450 650x400	0.35	45°	3.6 - 7.5	5.1 - 8.4	6.3 - 9.7	7.5 - 10.9	8.1 - 11.8	8.4 - 12.7	9.7 - 14.2	



# Grilles

# DDG

## Opposed Blade Dampers

These Opposed Blade Dampers are manufactured from extruded aluminum blades and frame with miscellaneous steel components.

The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 25mm centres.

The Opposed Blade Damper mounts directly on the neck of the grille and fits most grilles. Steel barbed S-clips are used for easy site mounting or removal when ordered separately. Supplied as standard with a screwdriver slot operator (Type SL) on supply grilles and a screwdriver pivot lever operator (Type PL) on fixed, angled deflection return grille. Type SL operator is standard if damper is ordered separately from grille.

Can be specified as an integral part of the grille by adding a OA suffix to the grille model.

Min. Size = 100mm x 64mm Max. Size = 600 x 600mm

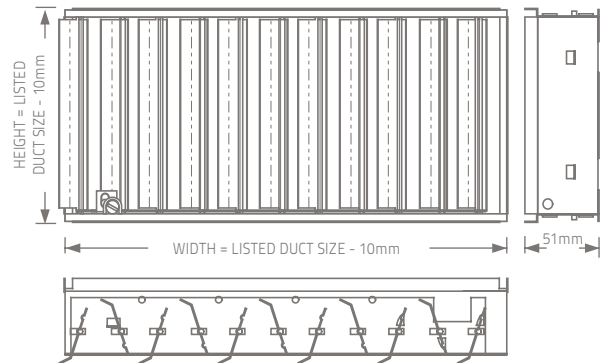
### Type SL Operator

The SL Operator incorporates a screwdriver slot, which adjusts from the face of the grille. This operator is the standard supplied with supply air grilles such as the single and double deflection adjustable blade.

### Type PL Operator

The PL Operator is a concealed pivot lever, which is adjusted from the face of the grille using a screwdriver. This operator is for use only on fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille.

### SL



### PL

