

# HD/LL and HD/LL/R

## Heavy-Duty Low-Leakage Damper for Rectangular and Round Duct

HD/LL Open and Closed Blades



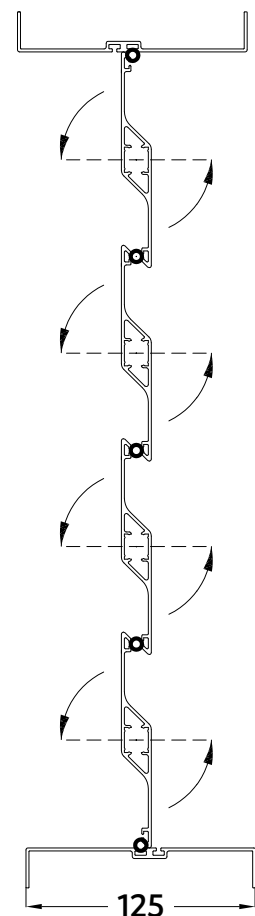
HD/LL/R



### Description

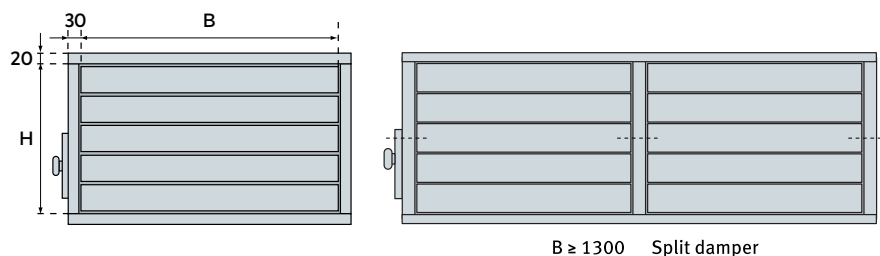
- ▶ Damper mechanism is completely covered inside the side profile
- ▶ The dampers are produced in manually operated (HC) or actuator powered version (EM)
- ▶ Multi blade damper with  $B \geq 1300\text{mm}$  is produced as sections up to 3900mm
- ▶ Due to transportation limits, one of the dimensions (B or H) cannot exceed 2000mm
- ▶ Operating temperature range:  $-20^{\circ}\text{C} \div + 80^{\circ}\text{C}$

Assembly Drawing



### Dimensions

<b>Damper Height (mm)</b>	110mm – 1310mm (max single section)
<b>Damper Width (mm)</b>	100mm – 3900mm (up to 3 sections)
<b>HC (hand control)</b>	Multi-leaf damper with manual mechanism (standard)
<b>EM (electric motor)</b>	Actuator-powered multi-leaf damper
<b>Spindle (mm)</b>	19mm × 19mm (aluminium)



$B \geq 1300$  Split damper

"Innovation distinguishes between a leader and a follower."

— Steve Jobs

Air Movement Supplies, Unit 23,  
Second Avenue, Cookstown Ind. Estate,  
Tallaght, Dublin 24, D24 FP95.

[www.airmovementsupplies.ie](http://www.airmovementsupplies.ie)

**AMS**  
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## Product Characteristics

- ▶ Heavy Duty
- ▶ Low leakage
- ▶ Rubber (gaskets)
- ▶ H ≥ 1300mm – equipped with additional handle

**Note:** Height Adjustment. In case of orders for full dimensions H (e.g. 200, 300, 400 etc.) the actual size will be increased by 10mm.

## Material

- ▶ Aluminium frame
- ▶ Aluminium blades
- ▶ Aluminium handle + shaft

## Performance and Torque Data

CASE LEAKAGE					
Nominal pressure [Pa]	Test pressure [Pa]	Measured flow rate [Pa]	Flow Rate [l/s]	Reference area [m <sup>2</sup> ]	Damper leakage l/(l-m <sup>2</sup> )
10	10	0.5	0.14	0.5	0.29
20	20	0.9	0.25		0.49
30	30	1.2	0.33		0.65
40	40	1.4	0.4		0.8
50	50	1.7	0.47		0.94
100	100	2.6	0.73		1.47
200	200	4.2	1.17		2.34
300	301	5.4	1.49		2.98
400	400	6.4	1.77		3.54
500	501	7.2	2.01		4.01
1000	1007	10.4	2.88		5.77
2000	2000	14.6	4.06		8.12

LEAKAGE THROUGH CLOSED BLADES					
Nominal pressure [Pa]	Test pressure [Pa]	Measured flow rate [Pa]	Flow Rate [l/s]	Reference area [m <sup>2</sup> ]	Damper leakage l/(l-m <sup>2</sup> )
50	51	12.6	3.5	1	3.5
100	100	17.3	4.8		4.8
200	200	26.5	7.4		7.4
500	502	30.7	8.5		8.5
1000	1000	46	12.8		12.8
2000	2010	75.4	20.9		20.9

Test report No. 331552

HD-LL-VCD meets the requirements of standard EN 1751:2014 for class A relating to case leakage and class 3 relating to leakage through closed blade(s).

## Torque Chart for Motor Selection

Actuating Force Class 2 EN 1751

5 Nm
10 Nm
15 Nm

Height	100/700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	
110/700	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
810	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
910	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1010	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1110	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1210	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1310	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1410	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1510	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1610	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1710	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1810	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1910	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
2010	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
2210	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
2310	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5