RENSON®
Creating healthy spaces

test report
ORIGINAL REPORT in attachment

TESTRAPPORT 54763/1 — ENGLISH TRANSLATION

According to EN 13030: 2001: "Ventilation of buildings - Grilles - Performance testing of air grilles subjected to simulated rain"

Linius L.050W, mesh 2,3x2,3 and sill
en afgeleide types :
louvres 450, mesh 2,3x2,3 and water gutter

carried out by : BSRIA Ltd
Old Bracknell West, Bracknell
Berkshire RG12 7AH (Engeland)

commissioned by : nv RENSON Sunprotection-Projects sa
Maalbeekstraat 10
8790 Waregem (België)

Date of issue : 31 august 2018

TEST INFORMATION

Contract	**54763A**
Date	April 2011
Manufacturer	N.V. Renson Projects
Louvre Model	L.050W
Material	Aluminium
Painted	No
Blade Height	965 mm
Blade Width	960 mm
Blade Depth	129 mm
Frame Depth	160 mm
No.of Blades	19
Blade Pitch	50 mm
No.of Banks	1
Guard Type	insect
Guard Spacing	0 mm
Side Channels	none
Water Drip Tray	yes
Blade Orientation	horizontal

CLASSIFICATION OF WEATHER LOUVRES

Weather louvres shall be classified by their ability to reject simulated rain.

- **Penetration Classification**

Table 1 shows the different classifications based on the maximum simulated rain penetration per square metre of louvre. The classification is determined in accordance with section 8.2 of EN 13030:2001.

Water penetration rating at a given louvre face velocity is determined by the water penetration while the louvre is subjected to a 13 ms-1 simulated wind velocity and a simulated rain fall at the nominal rate.

Table 1 Penetration classification

classe	Effectiveness	Maximum allowed penetration of simulated rain l.h-1.m-2
A	1,00 - 0,99	0,75
B	0,989 - 0,95	3,75
C	0,949 - 0,80	15,0
D	< 0,80	> 15,0

These classifications apply to various core velocities.

- **Discharge and Entry Loss Coefficient**

The discharge and entry loss coefficient given in Table 2, shall be determined in accordance with section 8.3 of test standard EN13030:2001.

Classe	Discharge and Entry Loss Coefficient
1	> 0,4
2	0,3 - 0,399
3	0,2 - 0,299
4	< 0,199

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test report

Summary Report 54763/1 **Issue No: 1** **Date of issue: 31 August 2018**

This Summary Report confirms that BSRIA Ltd has tested a sample of the product described below in accordance with the test methods contained within EN 13030:2001 and have determined the item met the detailed classification shown on pages 3 to 5. For further details of the test item see Page 2 of this Summary Report.

Manufacturer/Agent	N.V. Renson Projects IZ 2 Vijverdam Maalbeekstraat 6 B-8790 Waregem
Product	L.050W
Test location	BSRIA Old Bracknell West Bracknell Berkshire RG12 7AH
Date of test	14 – 28 April 2011
Date of issue	31 August 2018
Test engineer	A Freeth
Quality approved	Mark Roper Principal Test Engineer

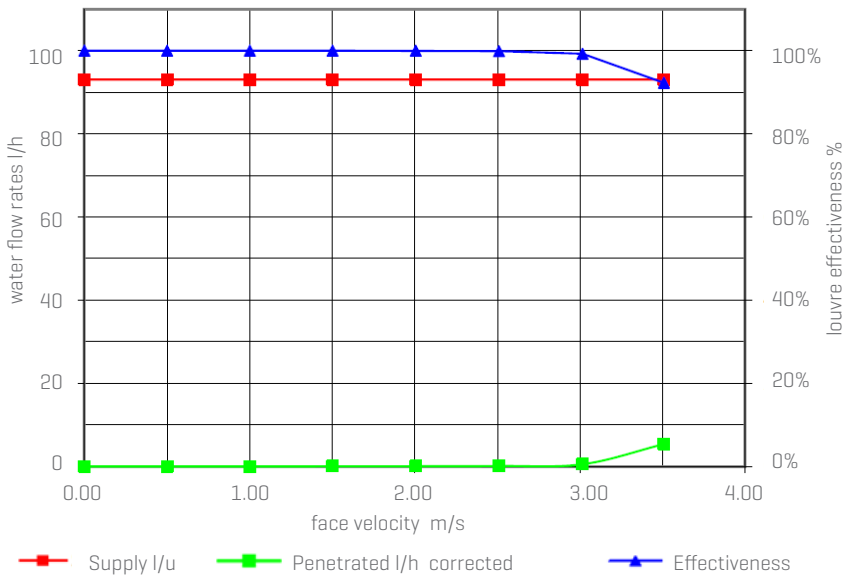
This summary report supersedes certificate 54763/1 Ed 2 This up-date was carried out under BSRIA contract reference 61223.

RAINWATER PENETRATION

MANUFACTURER	Renson	Date	14-28/04/2011
MODEL	L.050W	Contract	54763
		louvre height	1000 mm
Simulated rainfall	75 mm/hr	louvre width	998 mm
Wind speed	13.0 m/s	louvre area	0,998 m2

VENTILATION RATE		WATER FLOW RATES		Effectiveness	Class
Volume m3/s	Velocity m/s	Supply l/u	Penetrated l/u		
0.00	0.00	93.0	0.0	100.0%	A
0.46	0.50	93.0	0.0	100.0%	A
0.93	1.00	93.0	0.0	100.0%	A
1.39	1.50	93.0	0.0	100.0%	A
1.86	2.01	93.0	0.0	99.9%	A
2.33	2.51	93.0	0.1	99.9%	A
2.79	3.02	93.0	0.5	99.2%	A
3.25	3.51	93.0	5.4	92.2%	C

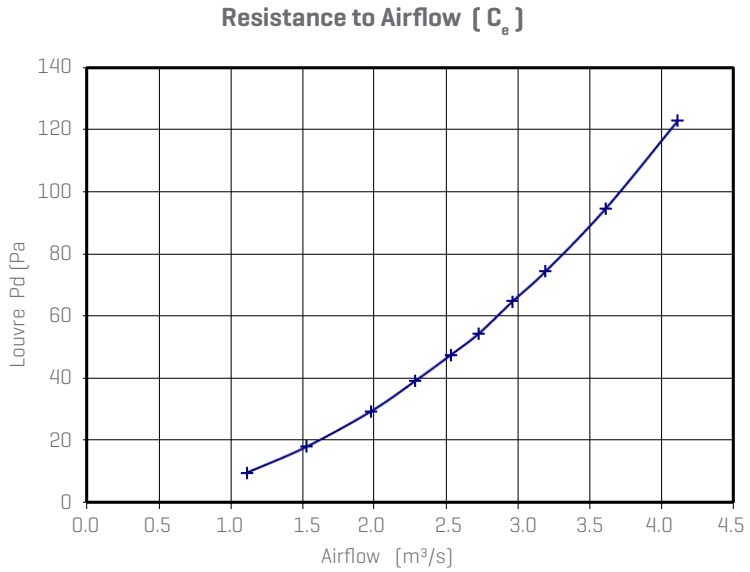
Effectiveness of Louvre with Simulated Wind and Rain



COEFFICIENT OF ENTRY

MANUFACTURER	Renson	Date	26/04/2011
MODEL	L.050W	Contract	54763
air temperature	17°C	louvre height	965 mm
barometer	1016 mbar	louvre width	960 mm
air density	1.215 kg/m3	louvre area	0,926 m2

	louvre face velocity	air flow rate		
louvre pd Pascal	**m/s**	**Test m³/s**	**theoretical m³/s**	**Coëfficiënt Ce**
9.5	1.20	1.12	3.66	0.304
17.8	1.65	1.53	5.01	0.305
29.3	2.14	1.98	6.43	0.308
39.0	2.47	2.29	7.42	0.308
47.4	2.74	2.53	8.18	0.310
54.3	2.95	2.73	8.76	0.312
64.6	3.20	2.96	9.55	0.310
74.3	3.45	3.19	10.25	0.312
94.6	3.90	3.61	11.56	0.313
122.8	4.44	4.11	13.17	0.312
			mean Ce	0.309
			Class	2



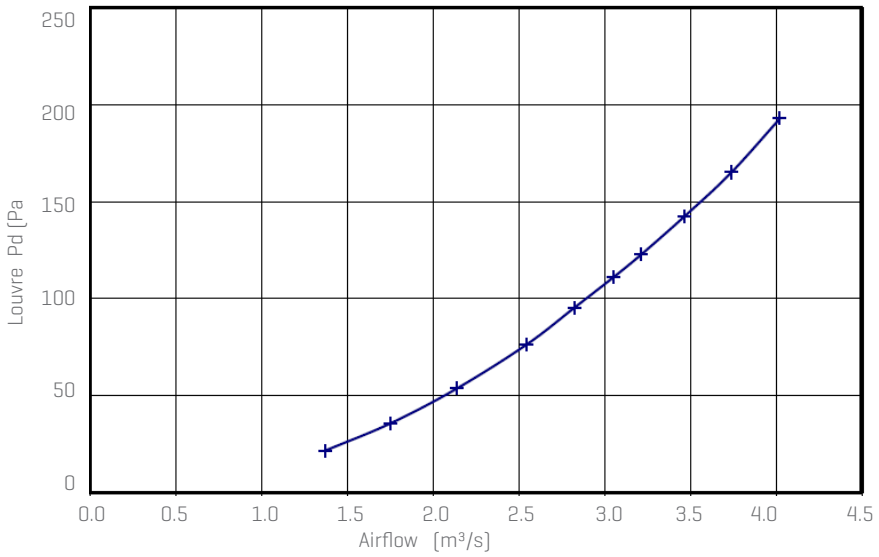
COEFFICIENT OF DISCHARGE

MANUFACTURER	Renson	Date	27/04/2011
MODEL	L.050W	Contract	54763

air temperature	16,8 °C	louvre height	965 mm
barometer	1021 mbar	louvre width	960 mm
air density	1.222 kg/m3	louvre area	0,926 m2

	louvre face velocity	air flow rate		
Louvre pd Pascal	**m/s**	**Test m³/s**	**theoretical m³/s**	**coefficient Ce**
21.6	1.48	1.370	5.509	0.249
35.7	1.89	1.752	7.082	0.247
53.7	2.31	2.139	8.686	0.246
76.4	2.75	2.547	10.360	0.246
95.3	3.05	2.824	11.571	0.244
111.0	3.29	3.051	12.487	0.244
122.7	3.47	3.213	13.129	0.245
142.5	3.74	3.467	14.149	0.245
165.0	4.04	3.739	15.225	0.246
192.8	4.34	4.022	16.457	0.244
			mean Cd	0.246
			Class	3

Resistance to Airflow (C_e)



Summary Report

www.bsria.co.uk

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Louvre Model	L.050W	
Material	Aluminium	
Painted	No	
Blade Height	965	mm
Blade Width	960	mm
Blade Depth	129	mm
Frame Depth	160	mm
No.of Blades	19	
Blade Pitch	50	mm
No.of Banks	1	
Guard Type	Insect	
Guard Spacing	0	mm
Side Channels	None	
Drip Tray	Yes	
Blade Orientation	Horizontal	

Front view of louvre

Note: Certificate 54763/1 Edition 1 described the louvre as having 2 banks of blades. The louvre has a single bank of blades, with a profile which extends almost the full depth of the unit. The test item information above has been amended. No other changes have been made.

RAINWATER PENETRATION

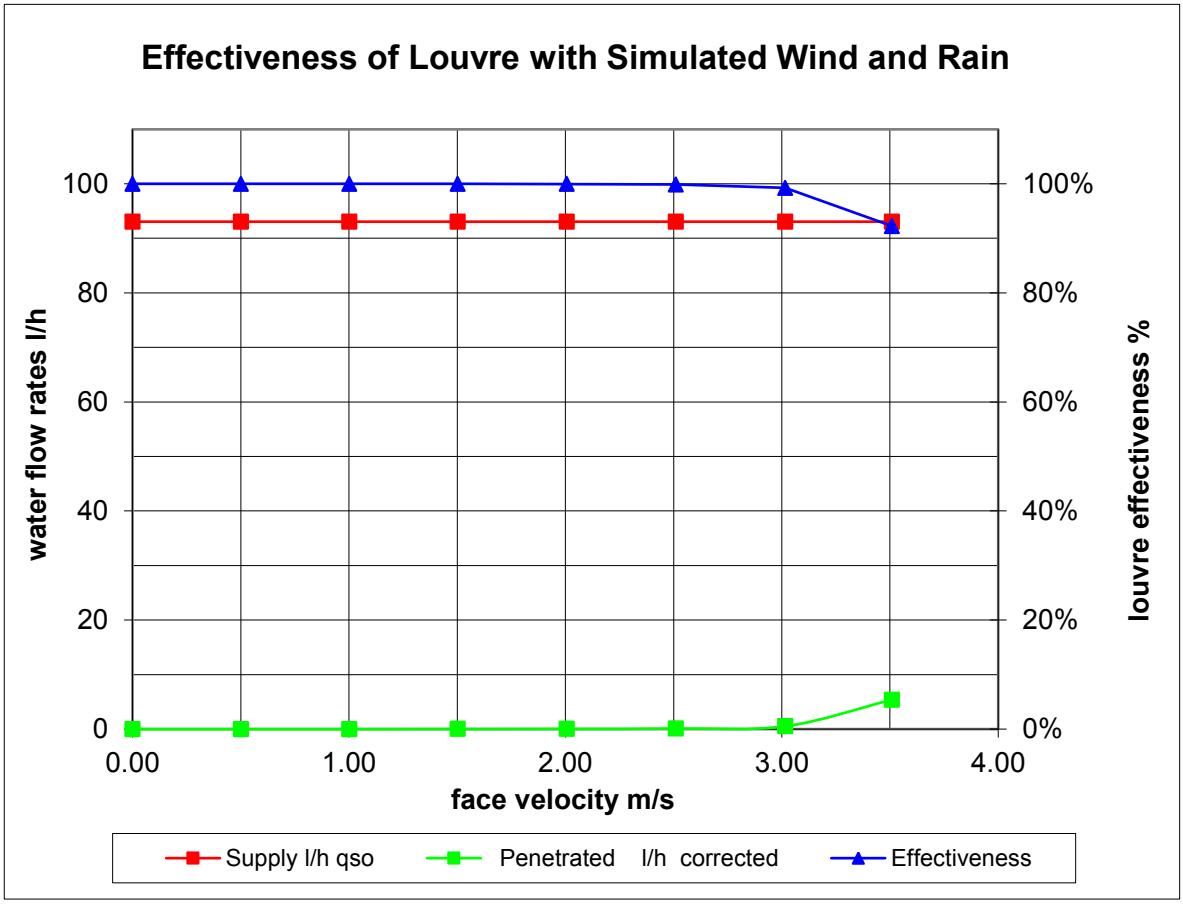
MANUFACTURER Renson
MODEL L.050W

Date 14-28/04/2011
Contract 54763

Simulated rainfall 75 mm/hr
Wind speed 13.0 m/s

louvre height 965 mm
louvre width 960 mm
louvre area 0.926 m^2

VENTILATION RATE		WATER FLOW RATES		Effectiveness	Class
Volume m^3/s	Velocity m/s	Supply l/h	Penetrated l/h		
0.00	0.00	93.0	0.0	100.0%	A
0.46	0.50	93.0	0.0	100.0%	A
0.93	1.00	93.0	0.0	100.0%	A
1.39	1.50	93.0	0.0	100.0%	A
1.86	2.01	93.0	0.0	99.9%	A
2.33	2.51	93.0	0.1	99.9%	A
2.79	3.02	93.0	0.5	99.2%	A
3.25	3.51	93.0	5.4	92.2%	C



COEFFICIENT OF ENTRY

MANUFACTURER Renson
MODEL L.050W

Date 26/04/2011
Contract 54763

air temperature	17	°C	louvre height	965	mm
barometer	1016	mbar	louvre width	960	mm
air density	1.215	kg/m^3	louvre area	0.926	m^2

	louvre face velocity	air flow rate		
louvre pd Pascals	m/s	test m^3/s	theoretical m^3/s	coefficient C_e
9.5	1.20	1.12	3.66	0.304
17.8	1.65	1.53	5.01	0.305
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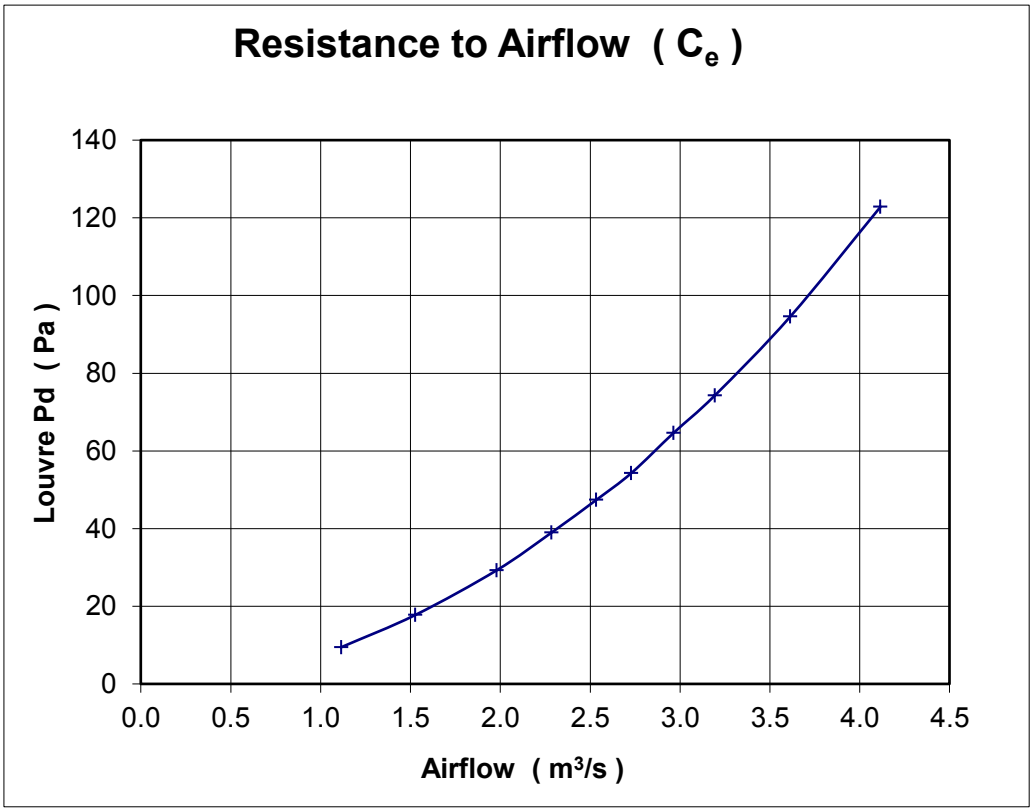
			mean C_e	0.309
			Class	2



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MANUFACTURER Renson — Date 27/04/2011
MODEL L.050W — Contract 54763

air temperature	16.8	°C	louvre height	965	mm
barometer	1021	mbar	louvre width	960	mm
air density	1.222	kg/m^3	louvre area	0.926	m^2

	louvre face velocity	air flow rate		
louvre pd Pascals	m/s	test m^3/s	theoretical m^3/s	coefficient Cd
21.6	1.48	1.370	5.509	0.249
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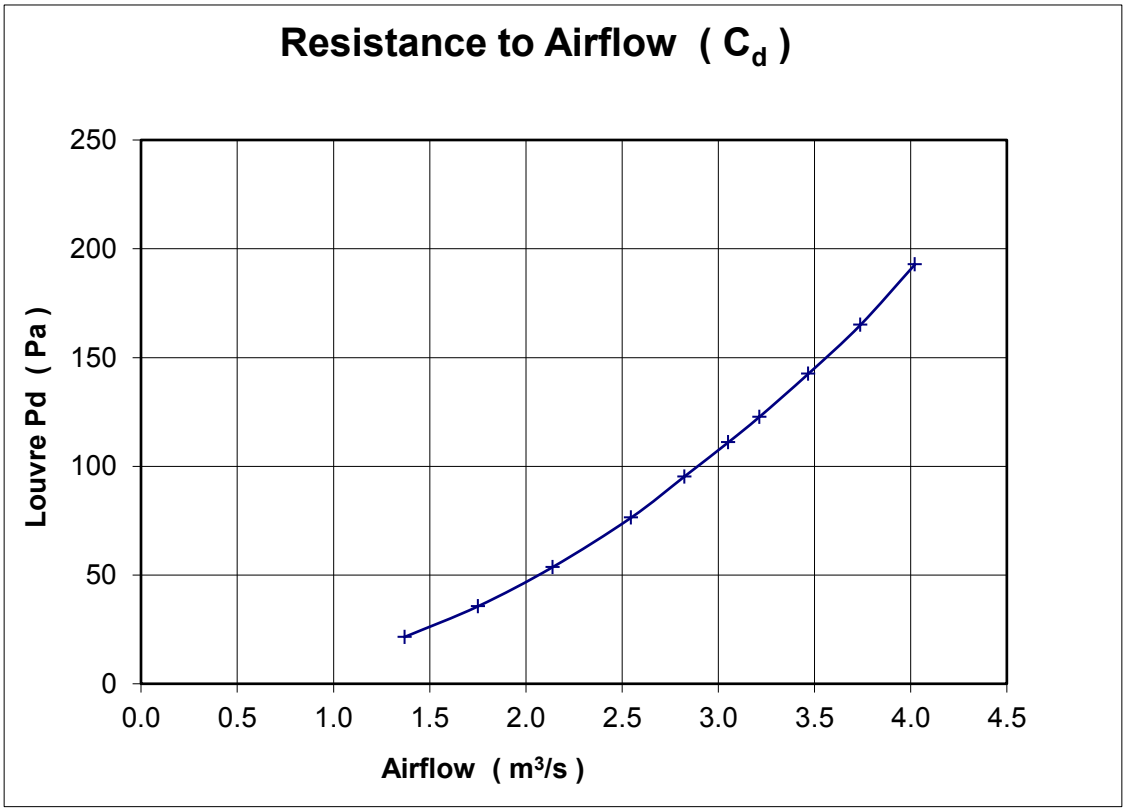

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These classifications apply to various core velocities.

Discharge and Entry Loss Coefficient

The discharge and entry loss coefficient given in Table 2, shall be determined in accordance with section 8.3 of test standard EN13030:2001.

Table 2 - Discharge and Entry loss coefficient classification

Class	Discharge and Entry Loss Coefficient
1	0,4 and above
2	0,3 to 0,399
3	0,2 to 0,299
4	0,199 and below