



CE Marking to BS EN 12101-3

**300°C/2 Hrs, PWA range
Foot mount motors**

Report Number 54594/3 Edition 2

This report supersedes Report Number 54594/3 dated 14 March 2011

Carried out for
Pitsan

By Mark Roper

25 October 2011



CE Marking to BS EN 12101-3
300°C/2 Hrs, PWA range
Foot mount motors

Carried out for:

Pitsan

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Contract: **Report 54594/3 Edition 2**

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dated 14 March 2011**

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PREFACE

This report supersedes Report Number 54594/3 dated 14 March 2011.

The following amendments have been made:

The client name has been amended to simply read Pitsan throughout the report.

The range of fans covered has been extended. Fan diameters of 400 mm to 500 mm have been incorporated. Changes have been made to the Range Summary tables and to the impeller table on page 13.

SUMMARY

This report contains information to support the CE marking (in accordance with BS EN 12101-3:2002) of the ventilator range shown in Table 1, for the application classes and temperature/time classification listed.

Table 1 Range Summary

Ventilator Range Details	
Ventilator Manufacturer	Pitsan
Ventilator Range Title	PWA Range, Foot Mount Motors
Ventilator Type	Axial
Motor Mounting	Foot
Impeller Range 1	
Impeller Range Details	PWA Impeller Range
Smallest Diameter Fan	400 mm
Largest Diameter Fan	1250 mm
Most Highly Stressed Model	112AX
Motor Range 1	
Motor Manufacturer	Weg
Motor Range	Smoke Extraction Motors, 300°C/2 Hours
Smallest Frame, Largest Output	3~100L-4, 2.2 kW
Largest Frame, Largest Output	3~160L-04, 15kW
Bearing Fit and Type	Standard fit, Metal, Cage
Bearing Lubricant	Krytox GPL 226
Test and Application Classes	
BS EN 12101-3 Test Classes	F200, F300 (300°C, 1Hr), Unclassified (300°C, 2Hr)
Test Temperature	300°C
Test Time (Hours)	2 Hrs
Application Classes	Uninsulated Smoke Reservoir and Non Smoke Reservoir Dual Purpose No Ducted Cooling Air Required Horizontal and Vertical orientation Form A operation

NOTE: Table 1 above is a summary of the major attributes of the declared product range, but does not cover all requirements. The compliance of an individual fan with the above table does not necessarily mean it is part of the approved product range. The definitive range is contained within the manufacturers submission documents in Appendix A, particularly the impeller ranges given on page 13 and the motor ranges given on pages 14-15.

CONTENTS

1	INTRODUCTION.....	7
2	PRODUCT RANGE.....	7
3	SELECTION OF TEST FANS	9
4	CONCLUSION.....	11

APPENDICES

APPENDIX: A	MANUFACTURERS SUBMISSION FILE.....	12
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TABLES

Table 1	Range Summary.....	5
Table 2	Range Summary.....	7
Table 3	Source of information demonstrating compliance with Clause C.5.2. of EN12101-3	8
Table 4	Compliance with clauses of A.1 and B.1 of BS EN 12101-3:2002.....	9
Table 5	Test coverage of fan structure and impeller	10
Table 6	Test and Application Classes	11

1 INTRODUCTION

This report is the summary of all the technical and test performance data for the Pitsan, foot mount motors product range, at 300°C for 120 minutes.

2 PRODUCT RANGE

This report contains information to support the CE marking (in accordance with BS EN 12101-3:2002) of the ventilator range shown in Table 2, for the application classes and temperature/time classification listed.

The data relating to the fans and motors has been reviewed and been found to form ranges as shown in Table 4, in accordance with the following requirements:

- BS EN 12101-3:2002, clause 3.22, defines the requirements for a powered ventilator product range, including materials, impeller, hub, and motor mounting, with variations in, overall dimensions, impeller variation as laid out in standard, and motor size.
- BS EN 12101-3:2002, clause 3.23, defines the requirements for a powered ventilator motor range for motors of the same construction but allowing variation in, frame size, rotational speed, windings related to speed, and motor mounts, i.e. pad and foot.

Table 2 Range Summary

Ventilator Range Details	
Ventilator Manufacturer	Pitsan
Ventilator Range Title	PWA Range, Foot Mount Motors
Ventilator Type	Axial
Motor Mounting	Foot
Impeller Range 1	
Impeller Range Details	PWA Impeller Range
Smallest Diameter Fan	400 mm
Largest Diameter Fan	1250 mm
Most Highly Stressed Model	112AX
Motor Range 1	
Motor Manufacturer	Weg
Motor Range	Smoke Extraction Motors, 300°C/2 Hours
Smallest Frame, Largest Output	3~100L-4, 2.2 kW
Largest Frame, Largest Output	3~160L-04, 15kW
Bearing Fit and Type	Standard fit, Metal, Cage
Bearing Lubricant	Krytox GPL 226
Test and Application Classes	
BS EN 12101-3 Test Classes	F200, F300 (300°C, 1Hr), Unclassified (300°C, 2Hr)
Test Temperature	300°C
Test Time (Hours)	2 Hrs
Application Classes	Uninsulated Smoke Reservoir and Non Smoke Reservoir Dual Purpose No Ducted Cooling Air Required Horizontal and Vertical orientation Form A operation

NOTE: Table 2 above is a summary of the major attributes of the declared product range, but does not cover all requirements. The compliance of an individual fan with the above table does not necessarily mean it is part of the approved product range. The definitive range is contained within the manufacturers submission documents in Appendix A, particularly the impeller ranges given on page 13 and the motor ranges given on pages 14-15.

The information required to comply with the various parts of a to l in Clause C5.2 of BS EN 12101-3:2002 may be found as indicated in Table 3.

Table 3 Source of information demonstrating compliance with Clause C.5.2. of EN12101-3

Annex C Clause 5.2	Variant	Source
a, b, c, d, e	Impeller Range 1	Appendix A, page 13
f	Motor Range	Appendix A, pages 14 to 15
g	Motor Range	Appendix A, pages 14 to 15
h	Motor Range	Appendix A, pages 14 to 15
l	Motor Range	Bearing type, class of fit and lubricant – see motor plates in Reports 54597/1 and 54594/2.
j	Motor Range	Appendix A, page 16
k	Motor Range	Appendix A, page 16
l	Ancillaries	-

3 SELECTION OF TEST FANS

The test fans for the above range were selected in accordance the requirements laid out in Annex A of BS EN 12101-3:2002. These are detailed in Table 4, 5 and 6 below with reference to the relevant BSRIA reports.

Table 4 Compliance with clauses of A.1 and B.1 of BS EN 12101-3:2002

Clause A.1	BS EN requirement	Report	Fan model	Comments
Fan Structure – Pad Mount				
a	Most highly stressed impeller	See Impeller Ranges Below		
b	Not applicable			
c	At least two sizes at their highest rotational speed	54594/1 54594/2	PWA630 PWA1120	All sizes tested at their highest rotational speed
d	Ventilator with smallest motor frame size	54594/1	PWA630	
e	Not Applicable			
f	Sufficient sizes to ensure diameters of range are from 0.63 to 1.26 of those tested	See Table 5		
Impeller Range 1				
a	Most highly stressed impeller	PWA54594/2	PWA1120	
b	Not applicable			
c	At least two sizes at their highest rotational speed	54594/1 54594/2	PWA630 PWA1120	All sizes tested at their highest rotational speed
d	Ventilator with smallest motor frame size	54594/1	PWA630	
e	Not Applicable			
f	Sufficient sizes to ensure diameters of range are from 0.63 to 1.26 of those tested	See Table 5		
Motor Range 1 – Weg, Silicone Varnish				
B.1	Largest and smallest motor Frame size at the highest ratings	54594/1 54594/2	PWA630 PWA1120	Smallest Motor Largest Motor

Table 5 Test coverage of fan structure and impeller

Powered Ventilator Tested	Test Range			Nominal Size mm	Report Number
				250	
				315	
				355	
				400	
				450	
				500	
				560	
630				630	54594/1
				710	
				800	
				900	
				1000	
1120				1120	54594/2
				1250	
				1400	
				1600	
				1800	
				2000	

4 CONCLUSION

The Pitsan, PWA product range, has passed the required performance tests for the application classes and temperature/time classification listed in Table 6, carried out in accordance with BS EN 12101-3:2002 to cover the range shown in Appendix A.

Table 6 Test and Application Classes

BS EN 12101-3 Test Classes	F200, F300 (300°C, 1Hr), Unclassified (300°C, 2Hr)
Test Temperature	300°C
Test Time (Hours)	2 Hrs
Application Classes	Uninsulated Smoke Reservoir and Non Smoke Reservoir Dual Purpose No Ducted Cooling Air Required Horizontal and Vertical orientation Form A operation

APPENDIX: A MANUFACTURERS SUBMISSION FILE

This appendix consists of technical data submitted by the manufacturer. It details the specification of the fan range and its components, as well as providing details of the individual models available.

IMPELLER RANGE

Fan model	40AX	45AX	50AX	56AX	63AX	71AX	80AX	90AX	100AX	112AX	125AX
max.speed(rpm)	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1000
Fan diameter (mm)	400	450	500	560	630	710	800	900	1000	1120	1250
Hub diameter(mm)	150	150	150	180	180	240	240	300	300	300	400
Nominal Tip Gap(mm)	5	5	5	5	5	5	5	5	5	5	5
Nominal Blade Length(mm)	120	145	170	185	220	230	275	295	345	395	420
Max.No of Blades	4	4	4	5	5	6	6	8	10	10	12
Approx. Blade CSA mm²	440	440	440	440	440	440	440	440	440	440	440
Approx. Hub CSA mm²	1600	1600	1600	1800	1800	2000	2000	2000	2100	2100	2100
Max.Hub Stress (N/mm²)	4.353	4.851	5.607	5.74	6.14	6.90	7.73	9.12	9.90	10.10	9.64
Self Induced Stress(N/mm²)	0.371	0.371	0.371	0.54	0.54	0.96	0.96	1.50	1.50	1.50	1.17
Hoop Stress (N/mm²)	1.592	1.79	1.946	2.65	2.919	3.56	4.06	5.54	6.82	6.93	7.06
Bending Stress(N/mm²)	2.39	2.69	3.29	2.55	2.682	2.382	2.715	2.084	1.58	1.67	1.414
Smallest Motor Frame	100	100	100	100	100	100	100	112	132	160	132
Largest Motor Frame	100	100	100	100	100	100	112	132	160	180	160

SMOKE EXTRACTION MOTORS

SINGLE-SPEED MOTORS - 300°C / 1 hour

Output kW	HP	IEC Frame	Full load torque C _n (Nm)	Locked rotor current I _l /I _n	Locked rotor torque T _l /T _n	Break- down torque T _b /T _n	Inertia J kgm ²	Allowable locked rotor time Hot/Cold (s)	Weight (kg)	Sound dB (A)	400V						Full load current I _n (A)	
											Rated speed (rpm)	% of full load			Power Factor Cos φ			
												50	75	100	50	75		100

II Pole - 3000min⁻¹

0,75	1	80	2,55	5,80	2,9	3,1	0,00079	25/55	14	59	2805	75,5	80,0	79,9	0,76	0,84	0,87	1,56
1,1	1,5	80	3,73	5,70	2,7	2,9	0,00091	15/33	15	59	2820	77,1	80,2	79,7	0,70	0,80	0,86	2,32
1,5	2	90S	5,01	6,50	2,6	3,2	0,00206	17/37	20	68	2860	81,7	83,7	83,6	0,72	0,81	0,85	3,05
2,2	3	90L	7,49	6,60	2,8	3,0	0,00242	9/20	22	68	2840	82,2	83,7	83,4	0,67	0,78	0,84	4,53
3	4	100L	9,92	6,80	2,6	2,8	0,00617	9/20	31	67	2890	83,7	85,8	85,6	0,75	0,83	0,87	5,81
4	5,5	112M	13,1	7,80	2,7	3,1	0,00842	16/35	42	64	2910	86,4	87,5	87,5	0,77	0,85	0,88	7,41
5,5	7,5	132S	17,9	8,00	2,7	3,2	0,02056	17/37	61	68	2935	83,9	87,0	88,3	0,75	0,83	0,87	10,3
7,5	10	132S	24,5	6,80	2,4	2,8	0,02430	11/24	67	68	2920	87,0	89,0	89,3	0,78	0,86	0,89	13,6
11	15	160M	35,6	8,30	2,6	3,1	0,04707	15/33	104	78	2950	88,0	90,2	90,3	0,78	0,85	0,88	19,8
15	20	160M	48,7	8,30	2,5	3,2	0,05295	12/26	111	70	2945	89,6	91,3	91,2	0,77	0,85	0,88	26,9
18,5	25	160L	60,0	8,20	2,6	3,3	0,06472	11/24	126	70	2945	90,6	92,0	91,7	0,78	0,85	0,88	32,9
22	30	180M	71,3	8,20	2,8	2,8	0,14364	13/29	172	70	2950	91,1	92,4	92,1	0,75	0,83	0,87	39,5
30	40	200L	96,8	7,90	2,8	2,6	0,20630	19/42	239	74	2960	90,0	92,0	92,7	0,78	0,86	0,88	53,1
37	50	200L	119	7,60	2,8	2,9	0,22424	19/42	253	74	2960	92,4	93,0	93,0	0,80	0,86	0,88	63,8

HIGH-OUTPUT DESIGN

1,5	2	80	5,17	6,00	3,0	2,7	0,00096	6/13	16	59	2770	75,0	75,5	76,9	0,68	0,79	0,86	3,31
2,2	3	90S	7,88	7,00	3,0	3,2	0,00230	8/18	21	68	2850	81,5	83,0	83,1	0,64	0,77	0,84	4,55
4	5,5	109L	13,3	7,50	2,9	3,1	0,00672	7/15	33	67	2870	81,0	82,3	82,5	0,72	0,81	0,86	8,14
5,5	7,5	112M	18,3	7,70	2,5	3,0	0,00995	8/18	45	64	2870	86,5	87,5	87,5	0,82	0,88	0,91	9,97
11	15	132M	35,9	7,00	2,4	3,2	0,03170	13/29	79	68	2925	90,0	90,6	90,2	0,73	0,82	0,86	20,5

IV Pole - 1500min⁻¹

0,55	0,75	80	3,85	5,50	2,5	2,7	0,00243	20/44	14	44	1440	60,0	74,0	75,0	0,58	0,70	0,78	1,36
0,75	1	80	5,98	5,50	2,4	2,6	0,00294	16/35	15	44	1415	78,0	79,6	76,2	0,62	0,74	0,83	1,71
1,1	1,5	90S	7,30	6,50	3,0	2,8	0,00505	16/35	20	47	1440	76,0	80,0	80,6	0,57	0,69	0,77	2,56
1,5	2	90L	10,1	5,90	2,8	2,7	0,00673	14/31	23	47	1420	80,3	82,3	81,7	0,64	0,77	0,83	3,19
2,2	3	100L	14,7	6,70	2,8	3,0	0,00842	9/20	31	51	1430	79,8	82,3	83,0	0,64	0,77	0,83	4,61
3	4	100L	20,2	6,50	2,8	2,7	0,00995	14/31	34	51	1420	83,9	85,4	84,7	0,68	0,79	0,86	5,94
4	5,5	112M	26,5	7,00	2,7	2,8	0,01875	14/31	46	55	1440	86,9	87,8	87,1	0,70	0,81	0,87	7,62
5,5	7,5	132S	35,7	8,00	2,4	3,0	0,04264	10/22	60	58	1470	85,4	87,7	88,5	0,70	0,80	0,85	10,6
7,5	10	132M	48,7	8,00	2,5	2,8	0,05040	7/15	67	58	1470	86,4	88,4	88,6	0,70	0,80	0,86	14,2
11	15	160M	71,5	6,00	2,2	2,5	0,08030	16/35	105	62	1470	87,8	89,4	89,9	0,70	0,79	0,84	21,0
15	20	160L	98,2	6,00	2,2	2,4	0,10037	12/26	121	62	1460	89,0	90,4	90,6	0,72	0,81	0,84	28,4
18,5	25	180M	120	7,50	2,7	3,0	0,16146	14/31	160	64	1475	89,8	91,5	92,1	0,65	0,75	0,82	35,2
22	30	180L	143	7,50	2,7	2,8	0,19733	14/31	183	64	1470	91,6	92,5	92,4	0,68	0,77	0,81	42,4
30	40	200L	194	6,50	2,2	2,5	0,33096	14/31	233	67	1475	91,8	93,0	93,0	0,75	0,82	0,85	54,8
37	50	225S/M	239	7,40	2,3	2,7	0,62988	20/44	350	70	1480	91,6	92,2	92,8	0,76	0,85	0,88	65,4
45	60	225S/M	292	7,00	2,3	2,5	0,76986	12/26	382	70	1475	91,0	92,9	93,5	0,81	0,87	0,88	78,9
55	75	250S/M	356	7,50	2,5	2,6	0,97982	16/35	460	70	1475	92,7	93,1	93,4	0,80	0,86	0,90	94,4
75	100	280S/M	483	6,70	2,1	2,4	2,32859	40/88	735	74	1485	92,4	93,8	94,3	0,83	0,88	0,90	128
90	125	280S/M	579	7,10	2,4	2,7	2,81038	31/68	802	74	1485	92,3	93,7	94,2	0,81	0,87	0,89	155

HIGH-OUTPUT DESIGN

1,1	1,5	80	7,59	5,00	2,3	2,3	0,00294	10/22	15	44	1385	65,0	68,5	69,0	0,55	0,70	0,81	2,84
1,5	2	90S	10,2	5,80	2,6	2,6	0,00504	8/18	21	47	1405	73,0	75,0	76,2	0,62	0,76	0,82	3,46
7,5	10	132S	48,7	7,50	2,5	2,8	0,05040	7/15	65	58	1470	85,5	88,4	88,6	0,72	0,81	0,85	14,4
15	20	160M	98,5	6,00	2,2	2,4	0,10037	13/29	115	62	1455	89,0	90,4	90,6	0,71	0,80	0,84	28,4
22	30	180M	143	7,50	2,8	2,8	0,19733	14/31	181	64	1470	91,0	92,2	92,4	0,67	0,78	0,83	41,4
30	40	200M	194	6,50	2,2	2,5	0,33095	17/37	227	67	1475	91,8	93,0	93,0	0,75	0,82	0,85	54,8
37	50	200L	240	7,00	2,3	2,5	0,38612	10/22	251	67	1470	90,8	92,0	92,1	0,73	0,81	0,86	67,4
55	75	225S/M	356	7,00	2,5	2,6	0,97982	9/20	448	70	1475	92,7	93,3	93,4	0,80	0,88	0,90	94,4
75	100	250S/M	484	7,20	2,4	2,6	1,15475	11/24	510	70	1480	92,5	93,5	93,7	0,79	0,85	0,87	108

For Pad Mounted model frame sizes up to 200.
The motors can also be connected in 60Hz.
The values shown are subject to change without prior notice.

Standard voltage,
connection and frequency:

220-240V Δ 50Hz
380-415V Y 50Hz
440-480V Y 60Hz

380-415V Δ 50Hz
660-690V Y 50Hz
440-480V Δ 60Hz

SMOKE EXTRACTION MOTORS

SINGLE-SPEED MOTORS - 300°C / 1 hour

Output		IEC Frame	Full load torque C _n (Nm)	Locked rotor current I _r /I _n	Locked rotor torque T _r /T _n	Break-down torque T _b /T _n	Inertia J kgm ²	Allowable locked rotor time Hot/Cold (s)	Weight (kg)	Sound dB (A)	400V						Full load current I _n (A)	
											Rated speed (rpm)	% of full load			Power Factor Cos φ			
												Efficiency η			50			75

VI Pole - 1000min⁻¹

0,55	0,75	80	5,71	5,90	2,1	2,2	0,00342	9/20	16	43	920	64,0	66,0	67,0	0,50	0,65	0,74	1,69
0,75	1	90S	7,92	5,20	1,9	2,0	0,00448	12/26	19	45	905	70,0	71,0	70,0	0,54	0,68	0,77	2,01
1,1	1,5	90L	11,4	4,90	2,3	2,2	0,00678	14/31	23	45	920	71,0	73,5	78,5	0,50	0,64	0,75	2,89
1,5	2	100L	15,2	4,80	2,2	2,5	0,01121	18/40	29	44	940	74,0	77,0	77,5	0,53	0,65	0,74	3,78
2,2	3	112M	22,4	5,00	2,2	2,3	0,01683	14/31	35	48	940	77,0	80,5	80,1	0,53	0,66	0,74	5,36
3	4	132S	30,2	5,30	1,9	2,2	0,03489	20/44	53	52	950	80,5	83,0	82,5	0,58	0,70	0,77	6,82
4	5,5	132M	40,7	6,00	2,1	2,2	0,05040	18/40	65	52	940	82,2	85,5	86,0	0,60	0,70	0,77	8,72
5,5	7,5	132M	54,7	6,40	2,2	2,4	0,06203	14/31	73	52	960	84,0	85,8	85,8	0,56	0,69	0,76	12,1
7,5	10	160M	73,9	6,40	2,3	2,9	0,12209	17/37	103	56	970	87,1	88,4	88,0	0,62	0,74	0,81	15,2
11	15	160L	108	6,70	2,4	2,6	0,17596	12/26	129	56	975	86,7	88,3	88,3	0,59	0,72	0,79	22,8
15	20	180L	149	7,50	2,5	2,8	0,36336	10/22	181	56	985	89,1	90,1	89,8	0,78	0,88	0,89	26,9
18,5	25	200L	181	6,00	2,3	2,5	0,37671	25/55	219	58	975	89,3	91,3	89,8	0,70	0,79	0,84	34,8
22	30	200L	216	6,30	2,3	2,6	0,41258	20/44	228	58	975	88,9	90,9	91,3	0,65	0,75	0,81	42,8
30	40	225S/M	291	6,80	2,5	2,6	0,98843	20/44	366	61	985	91,0	91,8	91,8	0,81	0,87	0,88	53,4
37	50	250S/M	361	7,90	2,4	2,4	1,22377	17/37	440	61	980	90,0	92,4	92,5	0,75	0,84	0,87	66,4
45	60	280S/M	437	6,80	2,4	2,5	2,29825	33/73	610	66	985	90,0	92,0	92,6	0,68	0,78	0,84	83,5
55	75	280S/M	534	6,30	2,2	2,5	2,64298	39/66	655	66	985	92,0	93,2	93,5	0,73	0,82	0,86	98,7

HIGH-OUTPUT DESIGN

3	4	112M	29,9	6,30	2,1	2,3	0,02617	10/22	46	48	960	72,0	86,0	84,0	0,55	0,66	0,73	7,06
4	5,5	132S	40,7	6,40	2,3	2,5	0,05040	14/31	64	52	940	82,2	85,5	86,0	0,60	0,71	0,75	8,95
45	60	250S/M	439	8,30	2,6	2,8	1,55325	16/35	490	61	980	90,0	92,2	92,6	0,78	0,83	0,88	79,7
75	100	280S/M	728	6,70	2,1	2,8	3,10263	24/58	762	66	985	92,0	93,4	93,7	0,74	0,81	0,85	130

VIII Pole - 750min⁻¹

0,55	0,75	90L	7,62	5,10	2,3	2,2	0,00617	11/24	22	43	690	56,0	63,5	65,0	0,37	0,46	0,56	2,11
0,75	1	100L	10,2	4,60	2,0	2,1	0,00953	30/66	27	50	700	60,0	67,0	69,0	0,38	0,48	0,59	2,66
1,1	1,5	100L	15,0	4,20	1,5	2,1	0,01289	18/40	31	50	700	64,0	70,0	72,2	0,43	0,56	0,65	3,38
1,5	2	112M	20,2	5,50	2,4	2,9	0,02430	22/48	43	46	710	76,0	81,3	81,6	0,45	0,57	0,65	4,08
2,2	3	132S	29,6	6,20	2,4	2,7	0,07528	32/70	68	48	710	78,5	81,5	83,0	0,53	0,63	0,72	5,31
3	4	132M	40,4	5,80	2,3	2,4	0,08531	21/46	75	48	710	76,5	82,9	83,5	0,52	0,64	0,72	7,20
4	5,5	160M	52,4	5,40	2,3	3,1	0,12209	32/70	105	51	730	81,3	84,3	86,0	0,46	0,57	0,66	10,2
5,5	7,5	160M	72,0	5,40	2,4	3,2	0,14364	24/53	114	51	730	83,0	84,0	85,0	0,43	0,54	0,68	13,7
7,5	10	160L	98,8	5,00	2,1	2,8	0,16519	15/33	127	51	725	84,0	86,0	85,5	0,50	0,63	0,72	17,6
11	15	180L	146	6,90	2,2	2,4	0,99888	10/22	167	51	725	87,0	88,5	88,8	0,70	0,79	0,84	24,4
15	20	206L	198	5,00	2,0	2,1	0,37671	34/75	217	53	725	87,0	88,5	88,9	0,55	0,67	0,74	32,9
18,5	25	225S/M	240	6,90	2,1	2,5	0,84723	18/40	341	56	735	88,3	90,0	89,8	0,70	0,78	0,84	35,2
22	30	225S/M	288	7,50	2,2	2,2	0,98843	19/42	365	56	730	88,8	91,0	91,3	0,70	0,80	0,82	42,4
30	40	250S/M	393	6,80	2,1	2,4	1,22377	17/37	440	56	730	89,0	91,1	91,8	0,70	0,78	0,83	56,7
37	50	280S/M	481	6,80	2,0	2,0	2,29825	23/51	607	59	735	90,0	92,2	92,3	0,68	0,78	0,82	70,6
45	60	280S/M	581	6,90	1,9	2,0	2,64298	26/57	643	59	740	90,4	92,5	93,0	0,68	0,77	0,82	85,2

HIGH-OUTPUT DESIGN

7,5	10	160M	98,8	5,00	2,1	2,8	0,16518	15/33	120	51	725	82,3	84,9	85,2	0,46	0,59	0,68	18,7
37	50	250S/M	484	8,50	2,3	2,6	1,55325	11/24	455	56	730	87,0	89,5	90,0	0,69	0,79	0,84	70,6
55	75	280S/M	715	6,50	1,9	2,0	3,10263	27/59	730	59	735	90,9	93,1	93,8	0,69	0,78	0,82	104

For Pad Mounted model frame sizes up to 200.
 The motors can also be connected in 60Hz.
 The values shown are subject to change without prior notice.

Standard voltage,	220-240V Δ 50Hz	380-415V Δ 50Hz
connection and frequency:	380-415V Y 50Hz	660-690V Y 50Hz
	440-480V Y 60Hz	440-480V Δ 60Hz

SMOKE EXTRACTION MOTORS

WEG RANGE OF SMOKE EXTRACTION MOTORS:

The high quality of the WEG Smoke Extraction Motors is obtained through a strict quality control system and by complying with international standards specific to the product, which have resulted in a modern and reliable motor.

Smoke Extraction Motors can operate at S1 duty (continuous running) at ambient temperature of 40°C and in emergency duty fire condition at S2 duty according to the motor classification of temperature / time combinations. For example, in F400/2 hours classification the motor can operate usually at normal operating conditions (at 40°C) and, on emergency cases, for a period of 2 hours at ambient temperature of 400°C to drive the cooling system fans designed to remove heat and smoke from crowded places.

WEG offers you a complete line of Smoke Extraction motors ranging classes F200, F300 and F400, single-speed or two-speed, TEFC or TEAO, Foot Mounted or Pad Mounted, etc., as per table below:

	F200	F300	F400
Duty	S1 - 40°C	S1 - 40°C	S1 - 40°C
	S2* - 200°C - 2 hours	S2* - 300°C - 1 hour	S2* - 400°C - 2 hours
Standard	EN 12101-3		
Frame Material	Cast Iron		
Pole / Frame Sizes available	II, IV/II pole (frame sizes 80 up to 200) IV, VI, VIII, VIII/IV, VI/IV pole (frame sizes 80 up to 280)		IV, VI, VIII, VIII/IV, VI/IV pole** (frame sizes 90 up to 280)
Construction	TEFC or TEAO (foot or flange mounted / pad mounted for frame sizes up to 200)		
Additional Information	Insulation class H; Temperature rise 80K		

*Continuously rated for normal ambient and emergency duty at rated temperature and time.

**Two-speed motors under request.

APPLICATIONS:

These smoke removal systems are applied in a broad range of applications including large buildings, shopping malls, factories, warehouses, enclosed parking lots, tunnels, among others. In other words, they are used where a large concentration of people in commercial and industrial facilities is present. Additional advantages include reduction of damage and financial loss by preventing smoke logging, reduction of roof temperatures and delay in fire spreading.

STANDARD FEATURES:

ELECTRICAL:

Three Phase

Class "H" insulation - Slot insulation: Nomex

Voltages: multivoltage - 220-240/380-415V or 380-415/690V (only for single-speed motors)

single-voltage - 220/380V; 380/660V or 415/718V

Service Factor (SF): 1.0

Design: N

For 200°C / 2 hours and 300°C / 1 hour motors: thermistors (1/ phase) from frame size 160M and above (except for Pad Mounted motors)

Dip and baked impregnation (frame sizes 63 up to 200)

Resin continuous flow impregnation (frame size 225S/M and above)

For 400°C / 2 hour motors: silicon impregnation.

MECHANICAL:

Squirrel cage rotor (Aluminium die Cast)

Enclosure: TEFC - Totally Enclosed Fan Cooled

TEAO - Totally Enclosed Air Over

Pad Mounted (up to frame sizes 200)

or Foot Mounted (all frame sizes)

Labyrinth seals

Grease nipple system in frame 160M and above

Shaft material: AISI 1045 steel

Drain plug

Metric threaded cable entries

1 meter long flying leads for Pad

Mounted motors (without terminal box)

Grease: Krytox GPL 226

Painting provided with modified Phenolic Resin

Finish paint: aluminium



**400°C / 2 hour Smoke Extraction Motors
certified by CTICM (Centre Technique Industriel
de la Construction Métallique - France)**

