



TEST REPORT

NUMBER: 5-15

CUSTOMER: KAFFE S.A.

SAMPLE: See page 2

PROCEDURE: ANSI/AMCA STANDARD 210-99 Fig.15

COMMENTS:

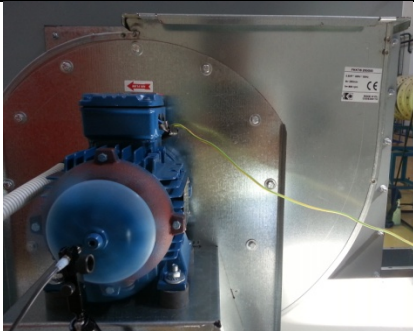


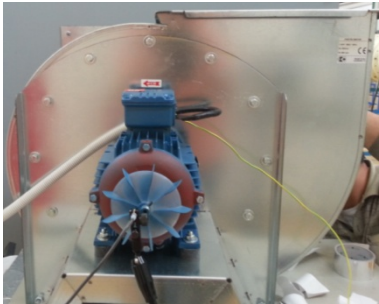


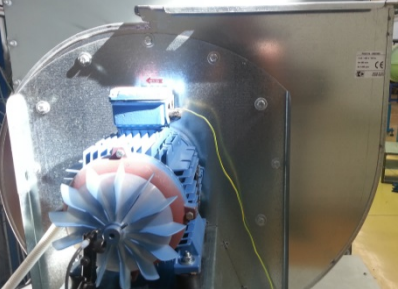
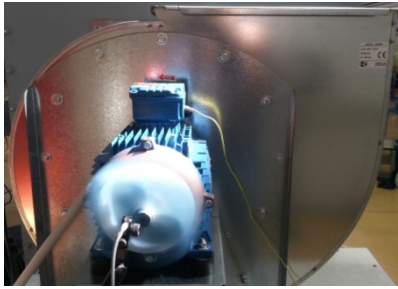
APPROVED BY: Prof. K. Mathioudakis Head of Laboratory of Thermal Turbomachines	DATE OF ISSUE: Athens, 27/11/2015
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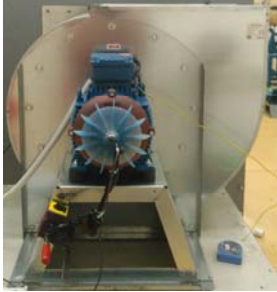

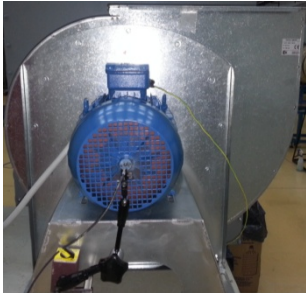

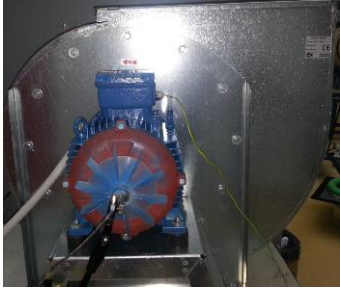
The results are in a confidence level of 95%

This report refers only to the tested sample and may not be reproduced in part without laboratory's approval

Complete information on the tests is available to the customer

SAMPLES LIST

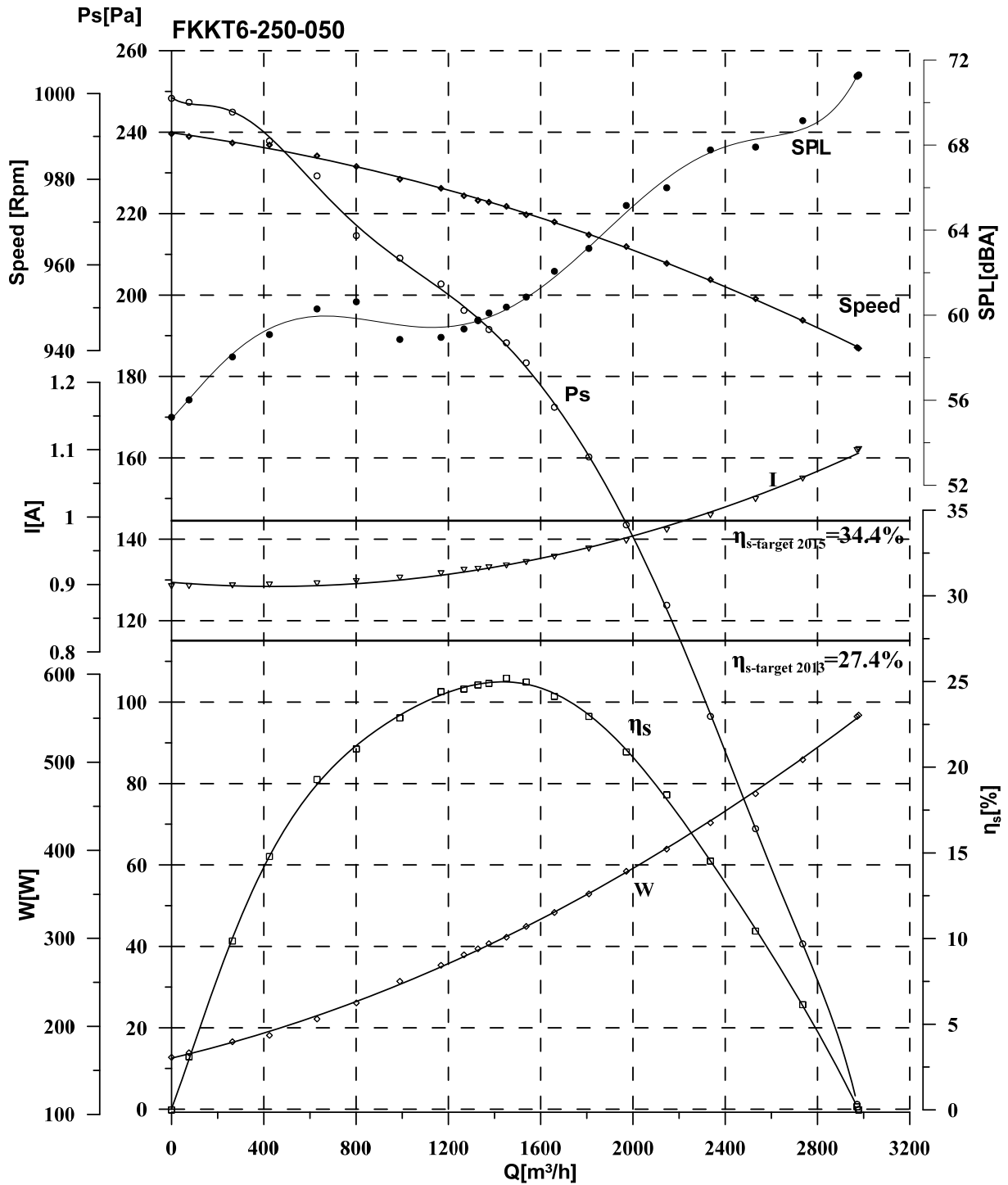
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NOMENCLATURE

Symbol	Description	Units
K_p	Compressibility Coefficient	-
I	Motor Current	A
P_s	Fan Static Pressure	Pa
Q	Fan Airflow Rate	m ³ /h
SPL	Sound pressure level, A-Weighted @1.5 m distance from motor	dB(A)
W	Power Input to Motor	W
$W_{\eta_{smax}}$	Power Input to Motor for Maximum Overall Static Efficiency	kW
η_s	Overall Static Efficiency $\eta_s = \frac{Q \cdot P_s \cdot K_p}{W \cdot 36}$	%
$\eta_{s \text{ target } 2013}$	Overall Static Efficiency Target for 2013 (EU No 327/2011) (centrifugal forward curved, installation type C) $\eta_{s \text{ target } 2013} = 2.74 \ln(W_{\eta_{smax}}) - 6.33 + 37$	%
$\eta_{s \text{ target } 2015}$	Overall Static Efficiency Target for 2015 (EU No 327/2011) (centrifugal forward curved, installation type C) $\eta_{s \text{ target } 2015} = 2.74 \ln(W_{\eta_{smax}}) - 6.33 + 44$	%
MC	Measurement Category	-
EC	Efficiency Category	-
VSD	Speed Control: supplied with fan	-
SR	Specific Ratio	-
N	Efficiency Grade for 2015 target	%
[SFP]	Specific Fan Power @ max efficiency	W/(m ³ /s)
$\varnothing D1$	Impeller Diameter	m
z	Nr of impeller blades	-

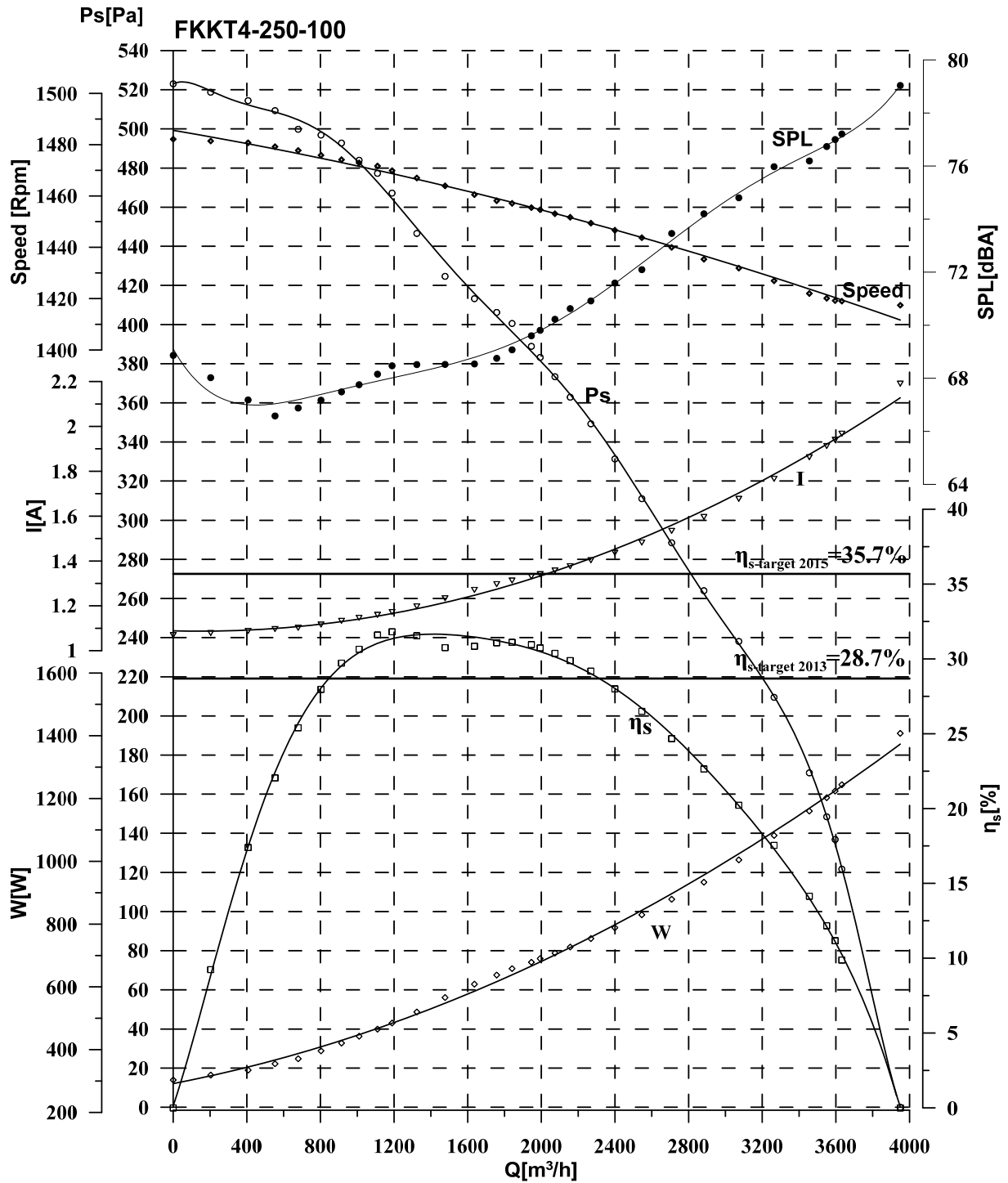


MC	EC	VSD	SR	N	@max efficiency					
					η _s [%]	[kW]	[m ³ /h]	[Pa]	[RPM]	[SFP]
C	Static	NO	1	44	25.2	0.301	1451.6	188.3	973.7	746.5

FKKT6- 250-050
 CENTRIFUGAL FORWARD CURVED
 WEG AL80-06 (67.1%)
 400V 50Hz 370W 1.05A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

ØD1 = 0.34m
 z = 16

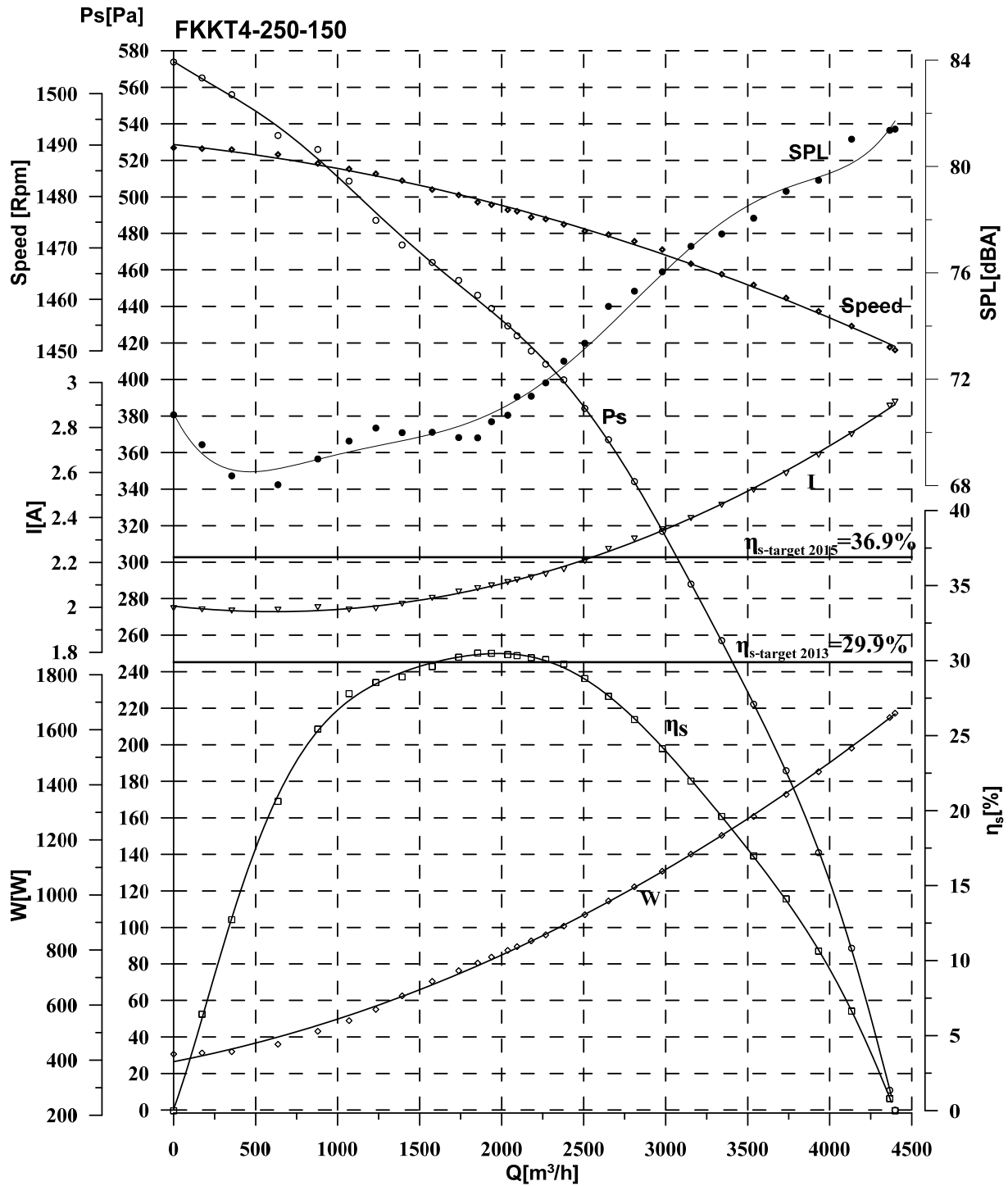


MC	EC	VSD	SR	N	@max efficiency					
					η_s [%]	[kW]	[m ³ /h]	[Pa]	[RPM]	[SFP]
C	Static	NO	1	44	31.8	0.485	1189.1	467.2	1470.0	1468.3

FKKT4- 250-100
 CENTRIFUGAL FORWARD CURVED
 WEG AL80-04 (IE2-79.8%)
 400V 50Hz 750W 1.63A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

$\varnothing D1 = 0.335 \text{ m}$
 $z = 12$

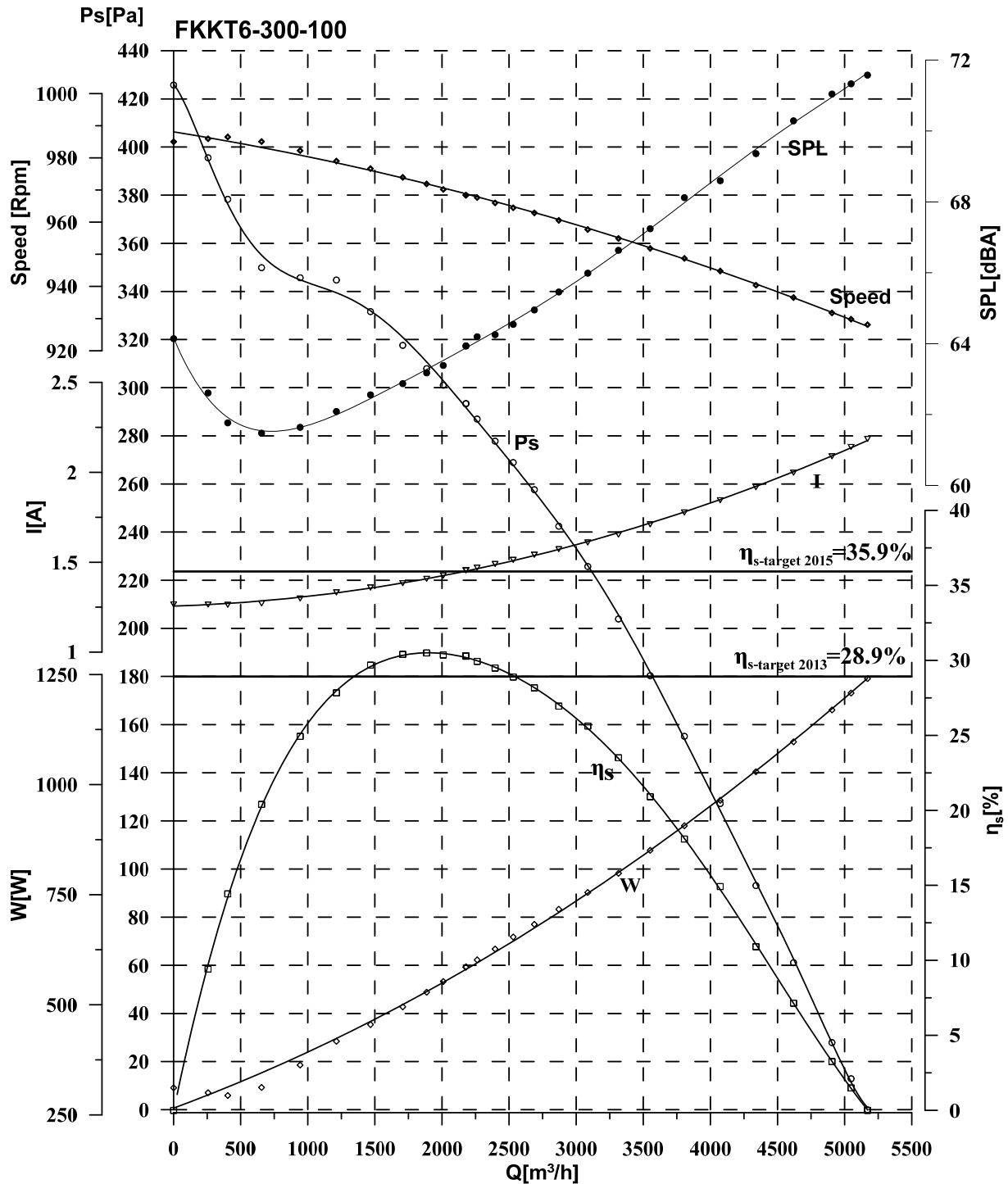


MC	EC	VSD	SR	N	@max efficiency					
					ηs [%]	[kW]	[m ³ /h]	[Pa]	[RPM]	[SFP]
C	Static	NO	1	44	30.5	0.753	1853.7	446.2	1478.9	1462.4

FKKT4- 250-150
 CENTRIFUGAL FORWARD CURVED
 WEG AL90S/L-04 (IE2-81.8%)
 400V 50Hz 1.1kW 2.49A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

ØD1 = 0.34m
 z = 14

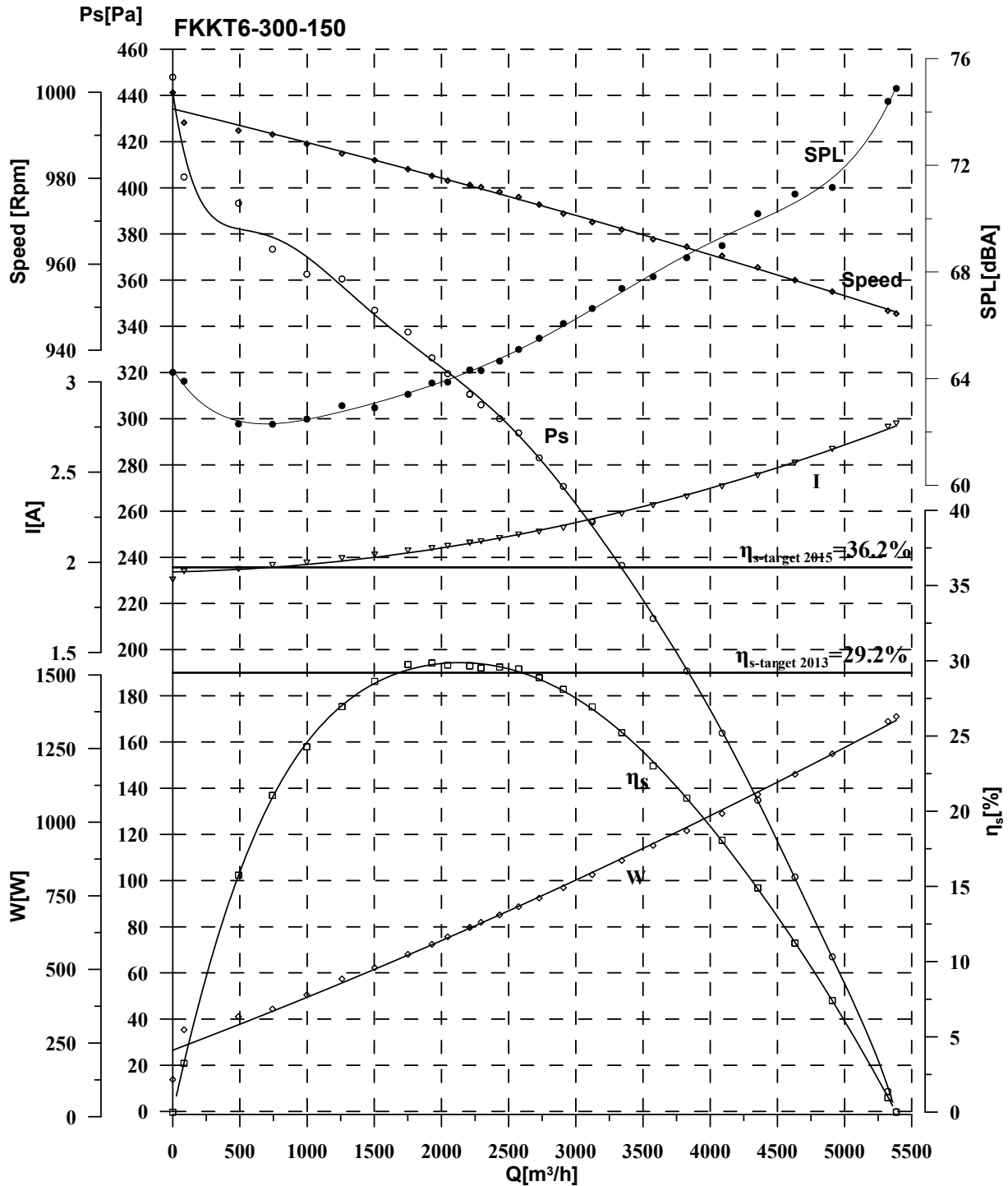


MC	EC	VSD	SR	N	@max efficiency					
					η_s [%]	[kW]	$[\text{m}^3/\text{h}]$	[Pa]	[RPM]	[SFP]
C	Static	NO	1	44	30.5	0.529	1885.5	307.9	971.9	1010.0

FKKT6- 300-100
 CENTRIFUGAL FORWARD CURVED
 WEG AL90S/L-06 (IE2-76%)
 400V 50Hz 750W 1.95A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

$\text{ØD1} = 0.415\text{m}$
 $z = 16$

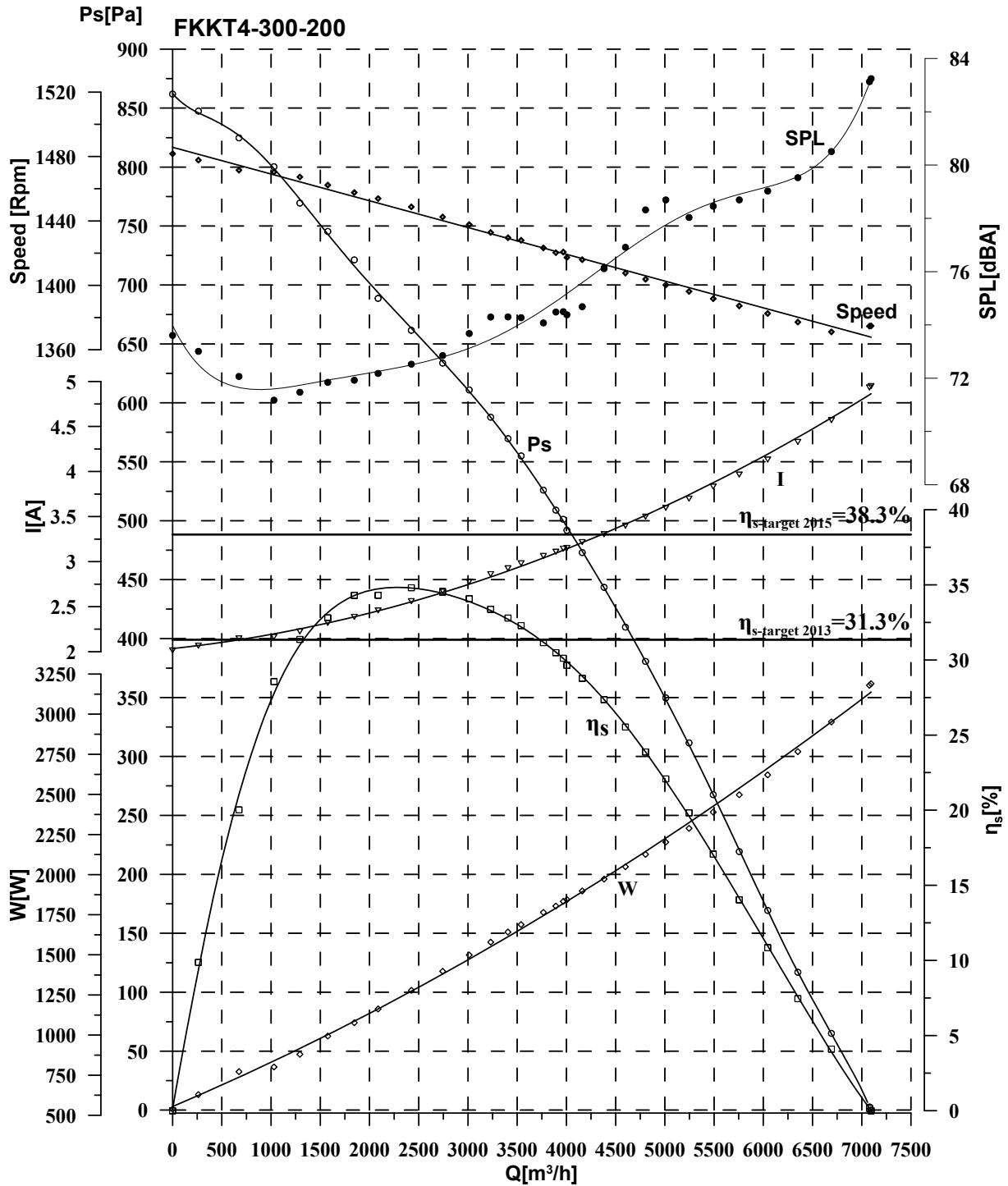


MC	EC	VSD	SR	N	@max efficiency					
C	Static	NO	1	44	η_s [%]	[kW]	[m^3/h]	[Pa]	[RPM]	[SFP]
					29.9	0.586	1928.9	326.4	980.6	1093.7

FKKT6- 300-150
 CENTRIFUGAL FORWARD CURVED
 WEG AL90S/L-06 (IE2-78.1%)
 400V 50Hz 1.1kW 2.78A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

$\varnothing D1 = 0.415m$
 $z = 18$

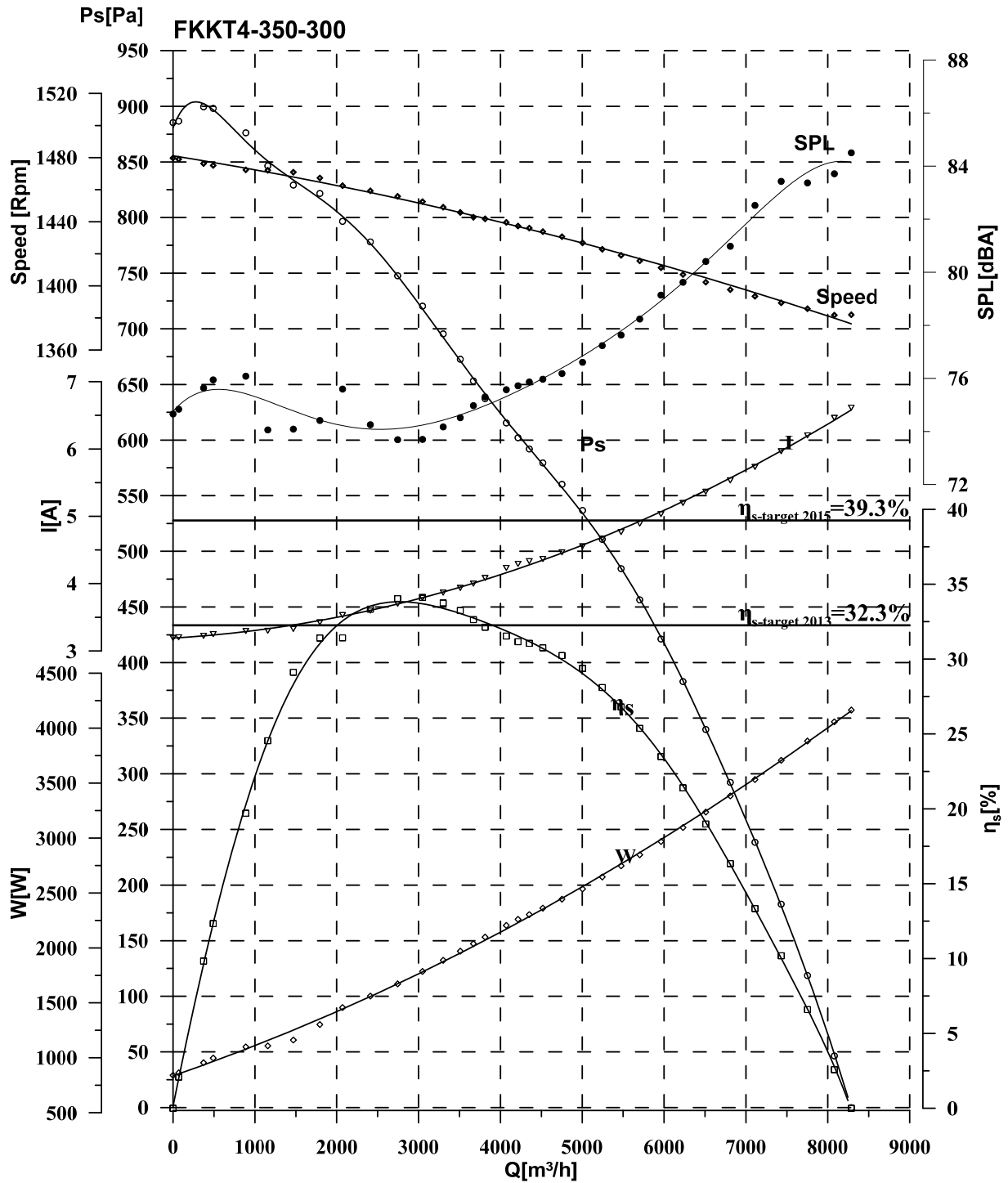


MC	EC	VSD	SR	N	@max efficiency					
					η_s [%]	[kW]	[m ³ /h]	[Pa]	[RPM]	[SFP]
C	Static	NO	1	44	34.8	1.279	2424.8	661.6	1448.8	1898.9

FKKT4- 300-200
 CENTRIFUGAL FORWARD CURVED
 WEG AL90S/L-04 (IE2-82.8%)
 400V 50Hz 1.5kW 3.26A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

$\varnothing D1 = 0.415 \text{ m}$
 $z = 12$

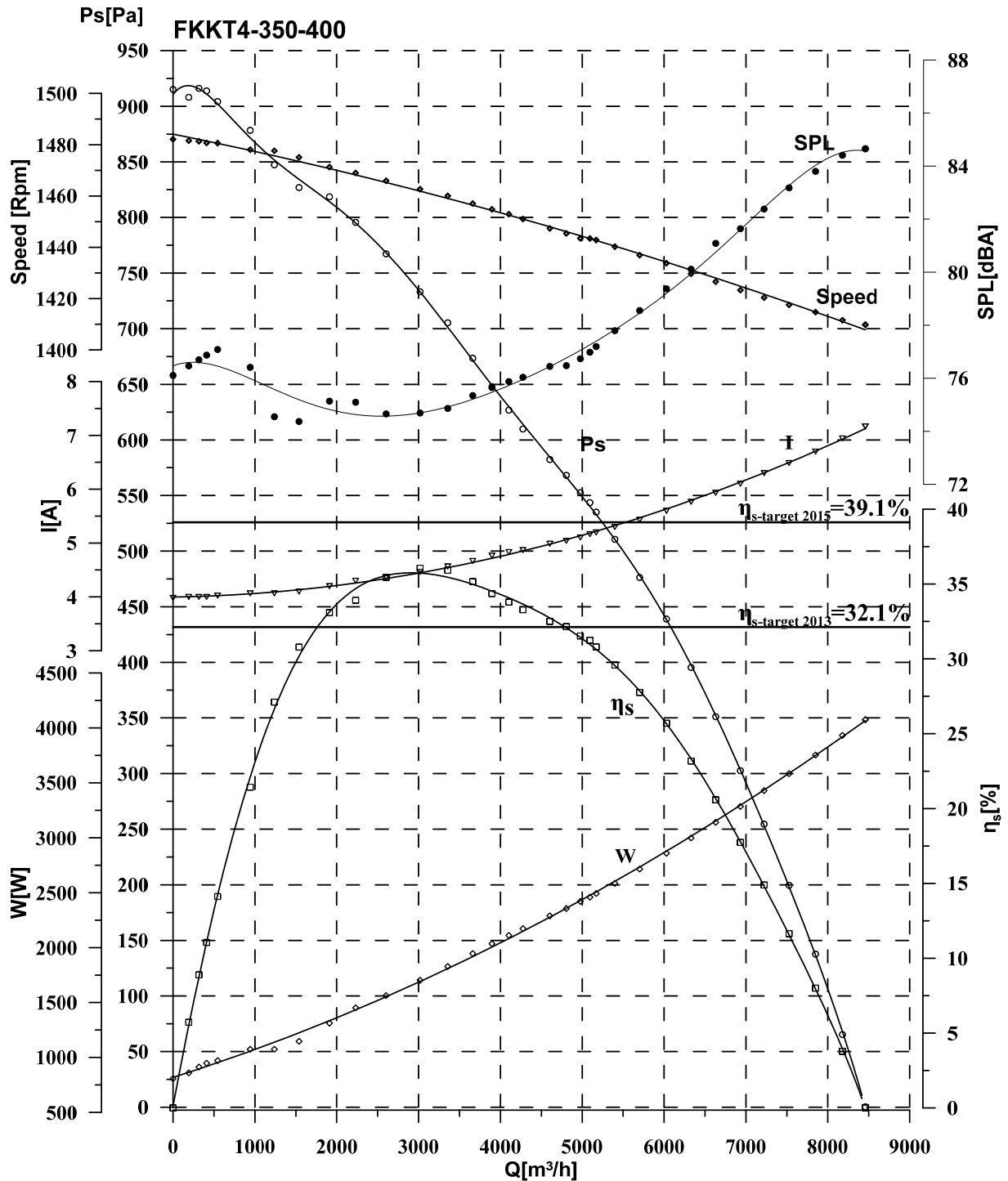


MC	EC	VSD	SR	N	@max efficiency					
					η_s [%]	[kW]	[m ³ /h]	[Pa]	[RPM]	[SFP]
C	Static	NO	1	44	34.13	1.786	3048.3	720.44	1452.6	2109.6

FKKT4- 350-300
 CENTRIFUGAL FORWARD CURVED
 WEG AL100L-04 (IE1-80.0%)
 400V 50Hz 2.2kW 4.75A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

$\text{ØD1} = 0.433 \text{ m}$
 $z = 12$

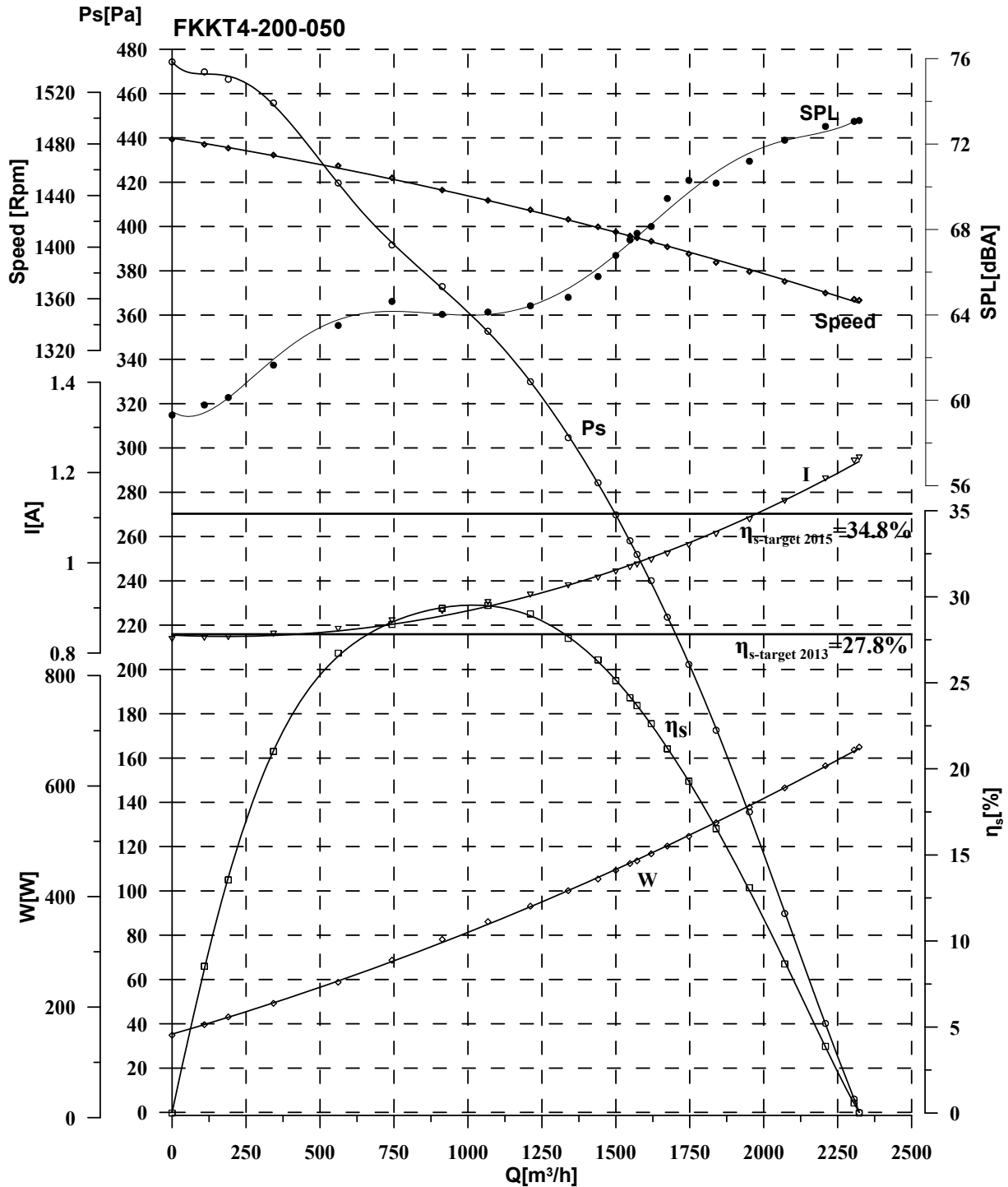


MC	EC	VSD	SR	N	@max efficiency					
					η _s [%]	[kW]	[m ³ /h]	[Pa]	[RPM]	[SFP]
C	Static	NO	1	44	36.1	1.703	3018.7	733.2	1462.7	2031.2

FKKT4- 350-400
 CENTRIFUGAL FORWARD CURVED
 WEG AL100L-04 (IE2-85.6%)
 400V 50Hz 3.0kW 6.17A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 ρ = 1.2 kg/m³
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

ØD1 = 0.433 m
 z = 12

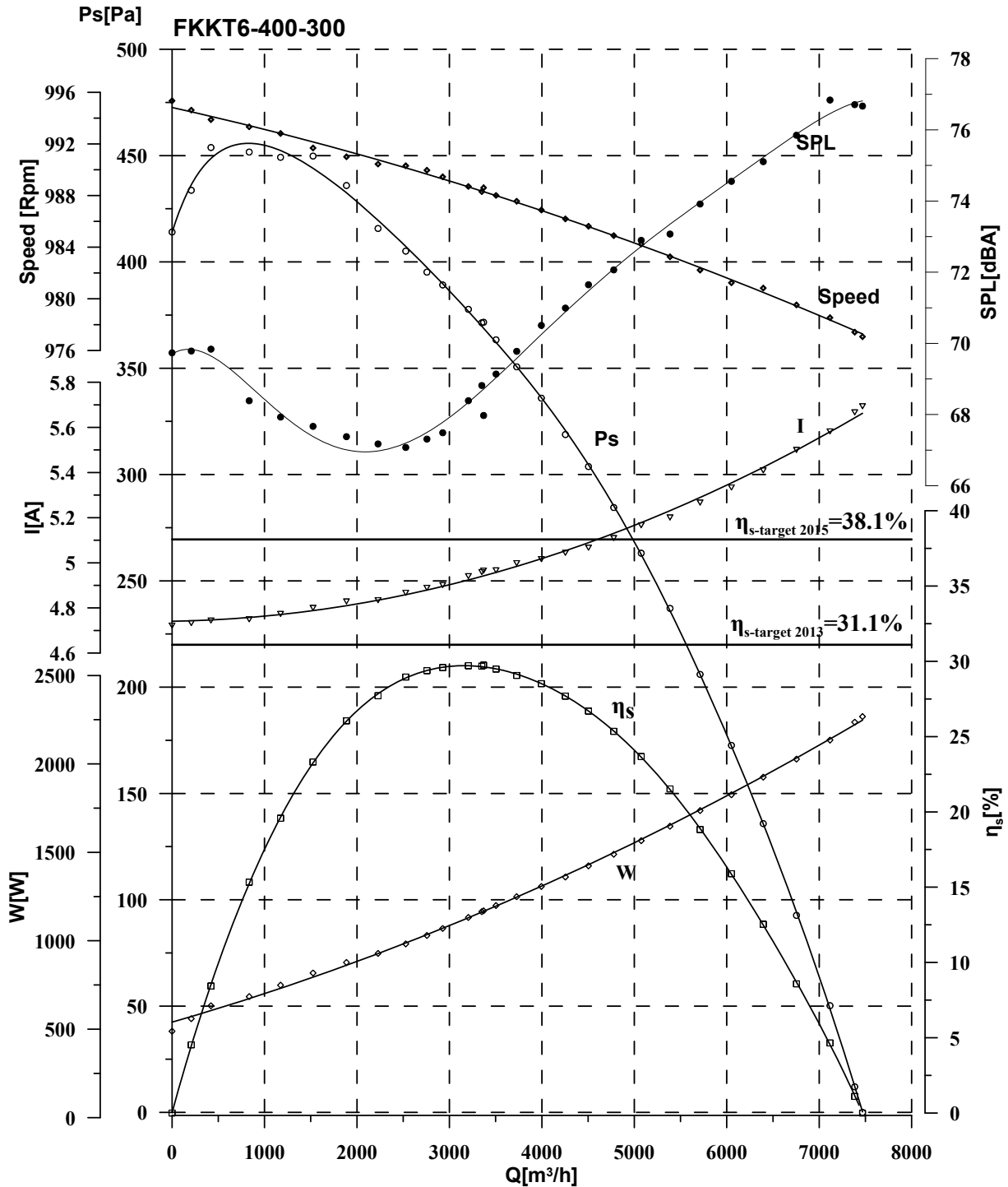


MC	EC	VSD	SR	N	@max efficiency					
C	Static	NO	1	44	η_s [%]	[kW]	$[\text{m}^3/\text{h}]$	[Pa]	[RPM]	[SFP]
					29.5	0.355	1067.7	352.7	1436.3	1195.4

FKKT4- 200-050
 CENTRIFUGAL FORWARD CURVED
 WEG AL71-04 (72.7%)
 400V 50Hz 0.37kW 1.06A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

$\varnothing D1 = 0.305 \text{ m}$
 $z = 12$

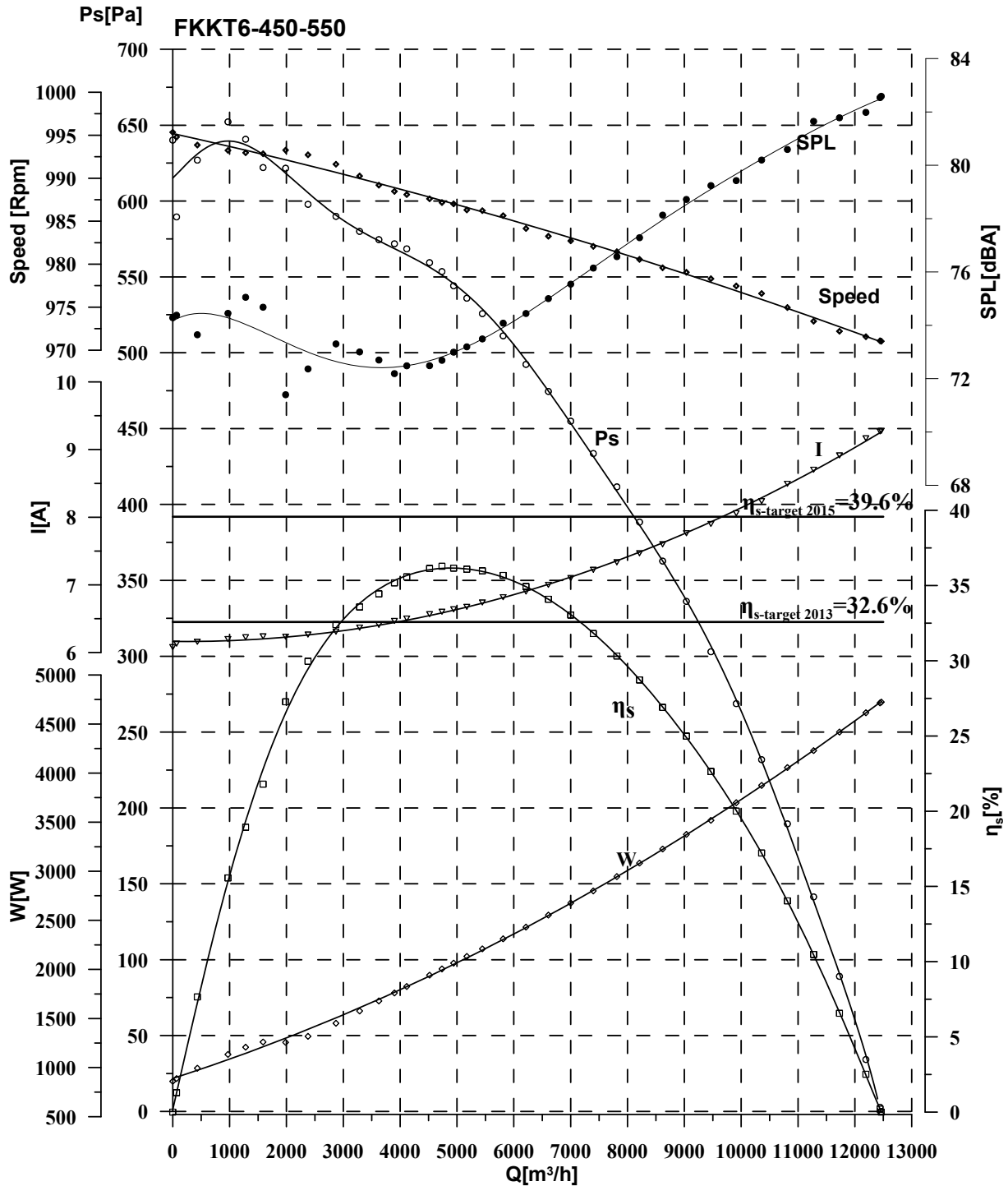


MC	EC	VSD	SR	N	@max efficiency					
					η_s [%]	[kW]	[m ³ /h]	[Pa]	[RPM]	[SFP]
C	Static	NO	1	44	29.7	1.169	3370.0	371.6	988.6	1249.1

FKKT6- 400-300
 CENTRIFUGAL FORWARD CURVED
 WEG AL112M-06 (IE2-83.3%)
 400V 50Hz 2.2kW 5.94A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

$\varnothing D1 = 0.460 \text{ m}$
 $z = 16$

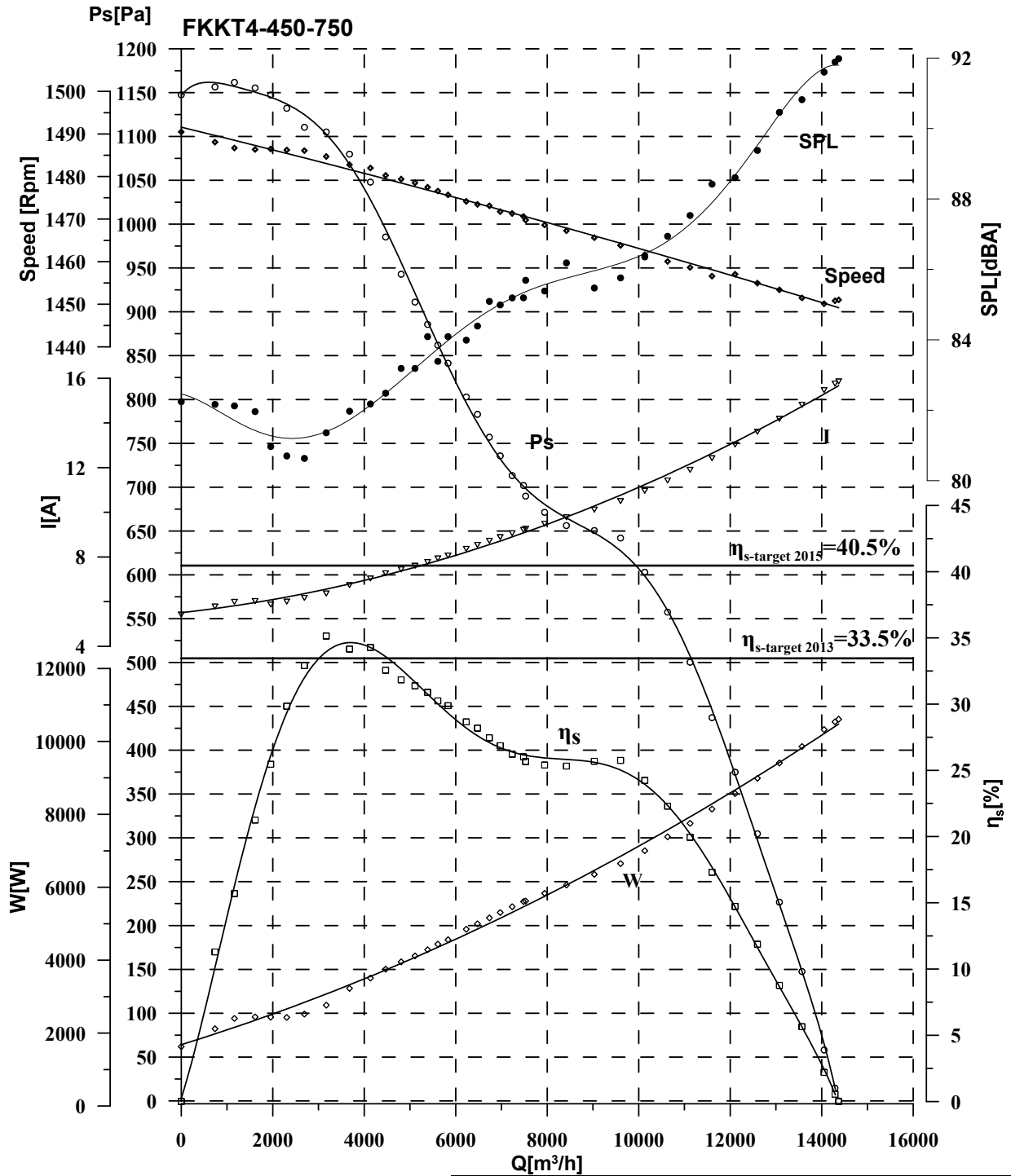


MC	EC	VSD	SR	N	@max efficiency					
C	Static	NO	1	44	η_s [%]	[kW]	[m ³ /h]	[Pa]	[RPM]	[SFP]
					36.3	2.005	4735.8	553.5	987.2	1524.4

FKKT6- 450-550
 CENTRIFUGAL FORWARD CURVED
 WEG AL132M-06 (IE2-84.9%)
 400V 50Hz 4.0kW 9.46A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

$\varnothing D1 = 0.550 \text{ m}$
 $z = 18$

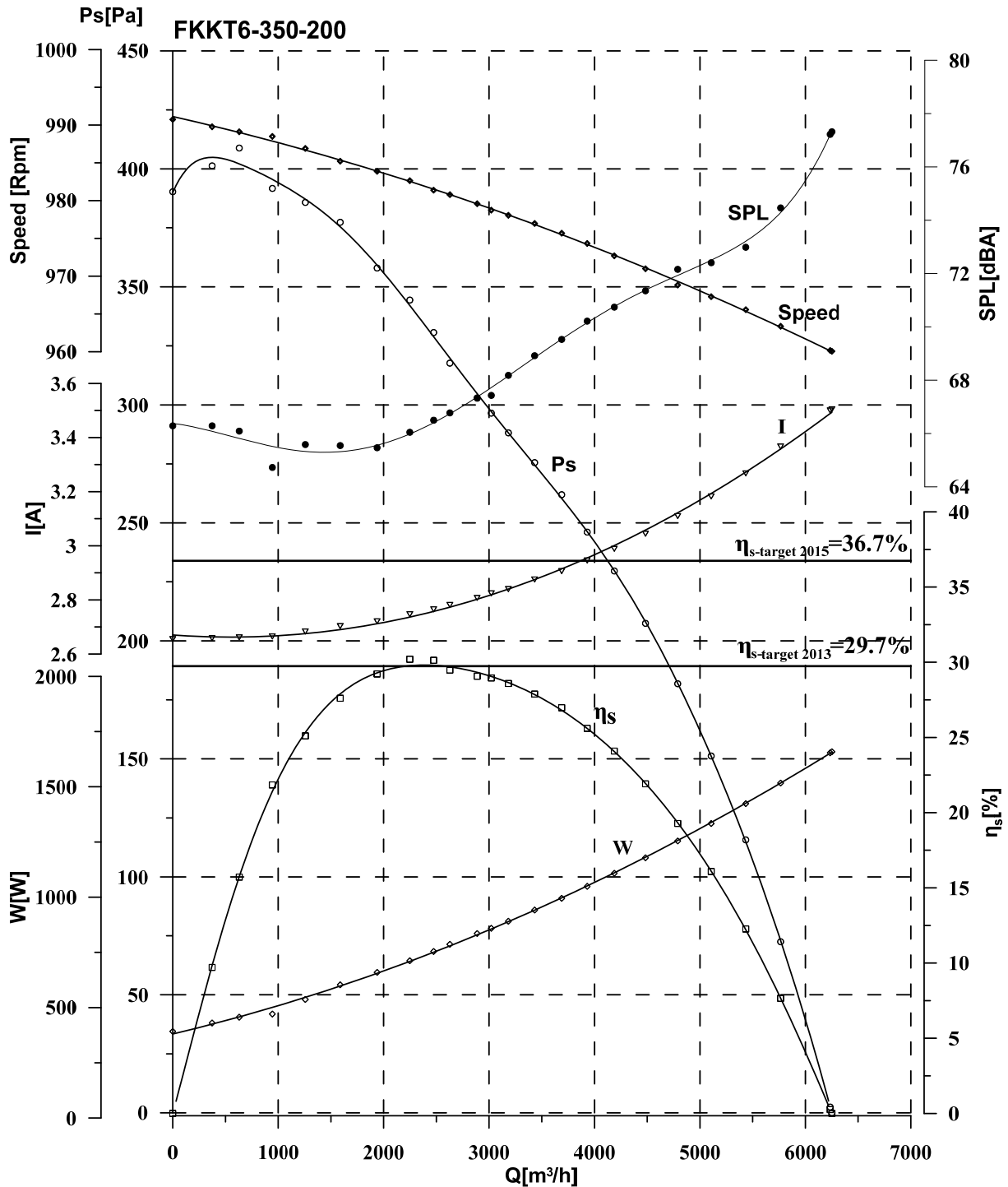


MC	EC	VSD	SR	N	@max efficiency					
C	Static	NO	1	44	η_s [%]	[kW]	[m^3/h]	[Pa]	[RPM]	[SFP]
					35.1	2.765	3169.1	1105.1	1484.7	3141.3

FKKT4- 450-750
 CENTRIFUGAL FORWARD CURVED
 WEG AL132S-04 (IE2-88.1%)
 400V 50Hz 5.5kW 10.5A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

$\text{Ø}D1 = 0.495 \text{ m}$
 $z = 16$

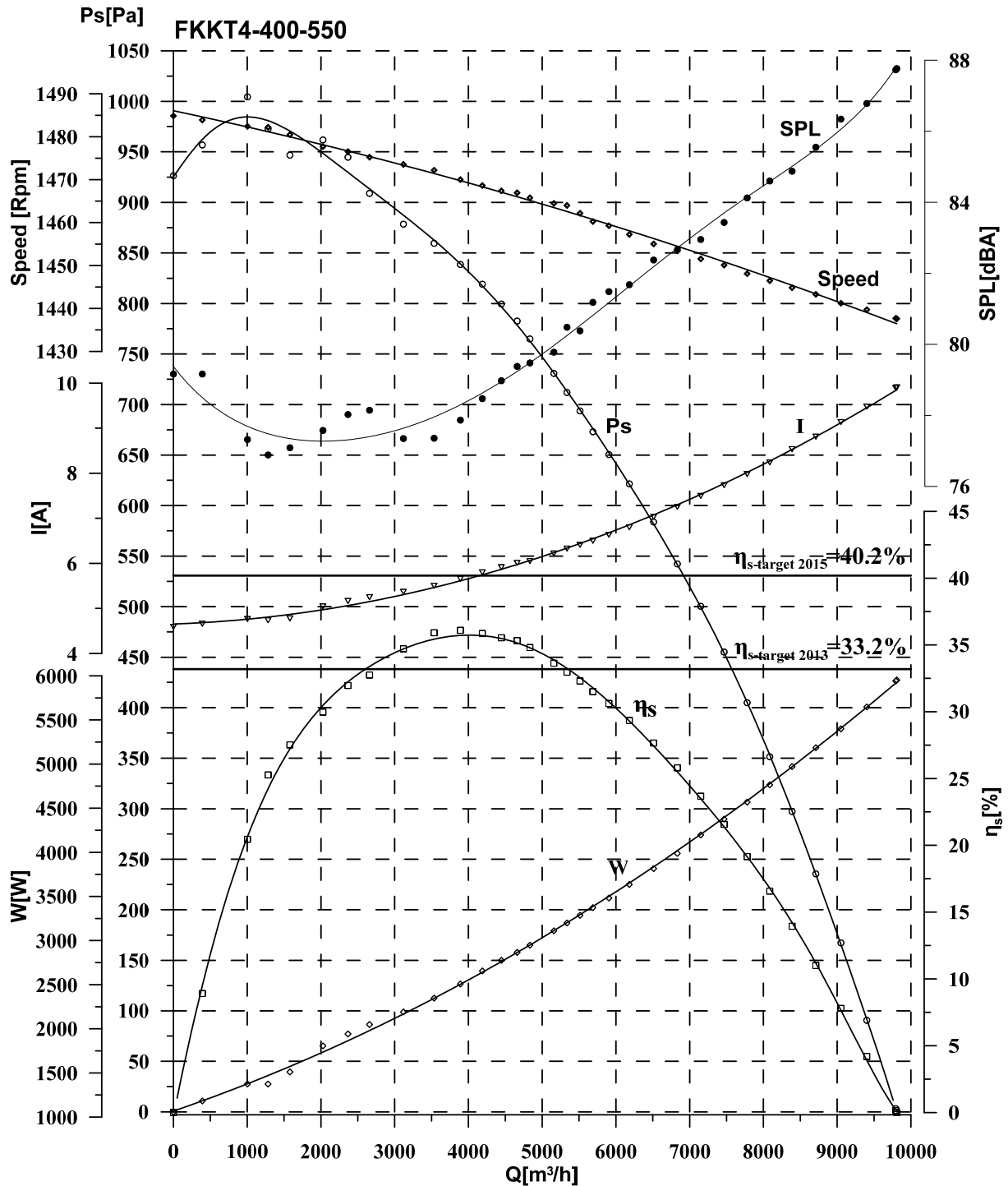


MC	EC	VSD	SR	N	@max efficiency					
C	Static	NO	1	44	η_s [%]	[kW]	[m ³ /h]	[Pa]	[RPM]	[SFP]
					30.2	0.712	2248.3	344.4	982.6	1140.4

FKKT6- 350-200
 CENTRIFUGAL FORWARD CURVED
 WEG AL100L-06 (IE2-80.3%)
 400V 50Hz 1.5kW 3.71A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

$\varnothing D1 = 0.432 \text{ m}$
 $z = 16$



MC	EC	VSD	SR	N	@max efficiency					
C	Static	NO	1	44	η_s [%]	[kW]	[m ³ /h]	[Pa]	[RPM]	[SFP]
					36.1	2.508	3891.1	838.6	1470	2320.

FKKT4- 400-550
 CENTRIFUGAL FORWARD CURVED
 WEG AL112M-04 (IE2-86.7%)
 400V 50Hz 4.0kW 8.32A

TEST NUMBER: 5-15
 TESTED TO 400V 50Hz
 $\rho = 1.2 \text{ kg/m}^3$
 ANSI/AMCA 210-99 Fig.15 – INSTALLATION TYPE C

$\varnothing D1 = 0.452 \text{ m}$
 $z = 16$



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