



INSTITUTE OF POWER ENGINEERING

Research Institute
Notified body no. 1452

01-330 Warsaw, ul. Mory 8
e-mail: instytut.energetyki@ien.com.pl
www.iem.com.pl
account no.: 22 1160 2202 0000 0000 2987 3013

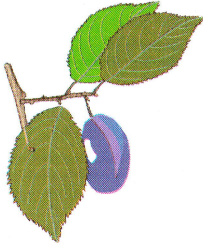
tel. 22 3451-200
fax 22 836 63 63
Regon: 000020586
NIP: 525-00-08-761
KRS: 0000088963

TESTING LABORATORY OF BOILERS AND HEATING DEVICES

Accredited laboratory no. AB 087

93-231 Łódź, ul. Dostawcza 1,

phone (042) 64 00 821
fax (042) 64 00 828



AN ENVIRONMENT-FRIENDLY DEVICE

CERTIFICATE

No. OS/329/CUE/16

This is to confirm that:

water boilers

K-2-16 DG; K-2-20 DG and K-2-30 DG

with an automatic fuel feed

with rated thermal output of 16 and 30 kW, fired with wood granules (pellets)

Symbols: PKWiU 25.21.1

PN-EN 303-5: 2012

manufactured by:

UAB KALVIS; Pramonės g. 15, LT-78135, Šiauliai, Lithuania

meet the requirements of item 5 of the PN-EN 303-5:2012 standard

This certificate has been issued on the basis of laboratory tests performed by: Testing Laboratory of Boilers and Heating Devices in Łódź, ul. Dostawcza 1 - specified in the following test reports: 42/16-LG Tests of the pellet-fired K-2-XX DG boiler series with automated fuel feed Test report for the K-2-16 DG boiler K-2-16 DG", 43/16-LG Tests of the pellet-fired K-2-XX DG boiler series with automated fuel feed. Test report for the K-2-30 DG boiler.

The certificate is valid provided that the manufacturer makes no modifications to the manufactured devices in comparison to the tested ones, without prior arrangement with the Laboratory which issued the certificate.

**Certificate validity period:
from September 2016 to September 2019**

Laboratory Director

(signature)

The manager of the Testing Laboratory of
Boilers and Heating Devices

(signature)

Łódź, September 15, 2016



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CERTIFICATE

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The range of reached thermal and emission parameters of K-2-16 DG and K-2-30 DG type boilers with rated thermal output of 16 and 30 kW meets the requirements of item 5 of the PN-EN 303-5:2012 standard.

Parameter		Unit	Measured value				Requirements of standards and regulations
			K-2-16 DG		K-2-30 DG		
Fuel	C1 type biomass						
	Q_l^r	MJ/kg	19.1				17.0
	A^r	%	0.4				0.5
	W^r	%	6.8				12
Thermal output		kW	16.4	4.0 ^{xx}	31.2	8.6 ^{xx}	Q_N
Efficiency η^{xxx}		%	89.9	89.3 ^{xx}	90	89.5 ^{xx}	≥ 88.2 - 16 kW ≥ 88.5 - 30 kW
Emission ^x	CO	mg/m ³	299	412 ^{xx}	196	171 ^{xx}	500
	NOx		168	180 ^{xx}	173	164 ^{xx}	none
	OGC		8	20 ^{xx}	6	19 ^{xx}	20
	Ash dust ^{xxx}		32	34 ^{xx}	14	18 ^{xx}	40
Mean exhaust gas temperature		°C	126	68 ^{xx}	133	64 ^{xx}	none
Flue gas mass flux		g/s	10.3	4.6 ^{xx}	20.1	9.4 ^{xx}	none

^x) counted as 10%-vol. O₂ in dry flue gas

^{xx}) refers only to reduced load $\leq 30\%$ of rated thermal output

^{xxx}) refers only to rated output

Łódź, September 15, 2016