MARKET TRANSFORMATION PROGRAMME Supporting UK Government policy on sustainable products

2008/2009 Energy Label Market Picture Testing – **Domestic Electric Ovens**

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Executive Summary

This report outlines the results of energy efficiency label tests carried out on a range of domestic electric ovens to provide market intelligence for Defra's Sustainable Consumption and Production (SCP) Programme through the Market Transformation Programme (MTP).

24 products for testing were selected from ranges of ovens available on the market and purchased over the Internet.

All tests were carried out between December 2008 and March 2009 in a UKAS accredited test laboratory.

- 11 out of the 24 appliances tested (46%) performed in accordance with all the declarations on the labels.
- 13 out of the 24 appliances tested (54%) did not perform in accordance with one or more declarations on the labels
- 1 out of the 24 appliances tested (4%) did not perform in accordance with the energy efficiency class declaration due to an incorrect usable volume measurement changing the size from large to medium thus requiring the use of lower class limits.
- 2 out of the out of the 24 appliances tested (8%) did not perform in accordance with the energy consumption declarations. Of these 1 had a measured value outside the tolerance specified and 1 had a value declared on the label for a non-existent conventional heating function.
- 1 out of the out of the 24 appliances tested (4%) did not perform in accordance with the size declaration due to incorrect measurement of usable volume.

13 out of the 24 appliances tested (54%) did not perform in accordance with the usable volume declarations. This was the most commonly un-achieved performance parameter. Discussions between the manufacturers' and Defra's appointed independent accredited test laboratories revealed that in the majority of cases this was due to a lack of clarity in the current standard. The lack of precise wording can give rise to different interpretations of how the dimensions are to be measured. In the Defra results, the dimensions were measured using one interpretation of the

method while the manufacturers' results were obtained using another interpretation, giving rise to the differences in the reported usable volumes. A new version of the standard is due to come into force at the end of 2009 which defines a precise and unambiguous method of measurement but until the Official Journal of the European Communities is amended to reference this new version, the older version, with its opportunities for interpretation, will remain in use as the required standard for verification of energy labelling performance parameters.

1. Selection and Purchase of Test Samples

The brand selection covers the top selling brands in terms of units sold based on 2007 GFK market data. It was decided to test one sample from each of the top 20 brands that cover 81% of the market and in addition one extra sample from 4 of the top 6 brands representing 35% of the market. This was felt to give a good balance between focusing on the big selling brands while still covering a wide range of brands.

The type of appliance, i.e. built-in/freestanding, double/single oven, for each model is selected to broadly reflect the range of ovens in that brand in terms of proportion of sales and time on market. Research was carried out by visiting on-line purchasing sources to check availability of these models and in some cases they were substituted for newer models to avoid issues with availability and obsolescence.

Some of the major brands tested in 2005 and 2004 were retested this time around but different brands at the smaller share end of the market have been selected for this programme.

1.1 Sampling Plan

For the purposes of compliance with the labelling requirements of the Energy Information (Household Electric Ovens) Regulations 2003, transposing Commission Directive 2002/40/EC of 8th May 2002, the specified standard requires one sample of the model to be tested initially. If the results show the sample to be achieving its declared performance, then the model is considered compliant. If any of the measurements fall outside the tolerances allowed by the standard, then a further three samples must be tested. If the averaged measurements from these three samples are within the allowed tolerances then the model is considered compliant. The Defra testing was carried out to gain a market picture of the current status of energy labelling, not for the purposes of legal enforcement, so only one sample of each model was measured. If any of the measurements fell outside the tolerances allowed by the standard, then the sample was considered not to have achieved the performance declared on the energy label for the purposes of this market testing. However this is not meant to imply that the model does not comply with the legal energy labelling requirements as a further three samples would need to be tested to ascertain this.

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In this event, manufacturers were offered the opportunity to carry out testing on a further three samples of the model at their own cost and if considered valid and appropriate these results were to be published alongside the Defra results. These samples were to be purchased from a retail outlet and tested at an accredited laboratory. If the averaged measurements of the performance parameters from these three samples are within the allowed tolerances then the model is considered to have achieved the performance declared on the energy label for the purposes of this market testing. (See Section 3)

2. Selection of Test Laboratory

2.1 Defining the measurement standards to be used

The testing of appliances to determine and verify energy label parameters for household electric ovens is governed by Commission Directive 2002/40/EC of 8th May 2002 implementing Council Directive 92/75/EEC as transposed into UK law by the Energy Information (Household Electric Ovens) Regulations 2003. Testing to determine energy label parameters in the UK is carried out in accordance with the UK regulations and to measure the parameters, the regulations require the use of harmonized standards, which are published in the Official Journal of the European Communities for this purpose,

The standard currently referenced in a Commission Communication of January 2001, published in Journal entry 2002/C 242/06 and specified in the UK transposed regulations is EN 50304:2001.

On this basis, tests and measurements were carried out according to the following harmonised standard:

EN 50304:2001 Electric ovens for household use – Methods for measuring energy consumption.
 Incorporating Corrigendum No. 1.

2.2 The tender specifications and selection criteria

As a result of the new Defra policy of naming the manufacturers whose products have been tested, it was essential that laboratories selected should be able to demonstrate the highest possible level of confidence in the validity of their results. It was decided that the best way of achieving this was to seek laboratories within the EU that were accredited by their national accreditation body against the test and calibration laboratory competence and management system standard ISO 17025:2005 and who had the required energy labelling performance test standards listed on their accreditation schedule. This would mean that the laboratory had been assessed for competence in carrying out the actual tests and measurements required in addition to having had its quality system audited. It was recognised early on that finding a large number of such laboratories with less appropriate levels of third party accreditation such as the ISO 9001 or ISO 14001 would also be considered in exceptional circumstances and this was reflected in the tender specification.

All tests were carried out between December 2008 and February 2009 in an accredited test laboratory selected according to the above criteria.

3. Assessment Criteria for Ovens used in these results

The label requires 4 performance parameters to be declared. Of these, the energy consumption and the usable volume are directly measurable according to the standard. The energy efficiency class and the size category are determined from the tables in The Energy Information (Household Electric Ovens) Regulations 2003 using the measured values of energy consumption and usable volume. The size range determines the appropriate energy class table to use.

3.1 Assessment Criteria of Measured Parameters

The standard allows tolerances (or variances) in the measurement of these criteria compared to the declared values.

3.1.1 Criteria for Energy Consumption and Usable Volume

Where the value measured is within the tolerances allowed by the standard, the declared performance parameter is considered to have been achieved.

Where the value measured is outside the tolerances allowed by the standard, the declared performance parameter is considered not to have been achieved.

3.1.2 Criteria for Size Category

Where the measured usable volume is inside of the measurement tolerances allowed by the standard but falls into another size category band that causes the size band to change, the declared size category is considered to have been achieved and the table in Schedule 4 of the Energy Information (Household Electric Ovens) Regulations 2003 appropriate to the declared size category is used to determine the energy efficiency class.

Where the measured usable volume is outside of the tolerances allowed by the standard and this causes the size band to change, the declared size category is considered not to have been achieved and the table in Schedule 4 of the Energy Information (Household Electric Ovens) Regulations 2003 appropriate to the measured size category is used to determine the energy efficiency class.

3.2 Assessment Criteria for Energy Efficiency Class

Where the class calculated from the measured energy consumption and the size range is the same as or higher than that declared and the measured energy is within the tolerances allowed by the standard, the declared energy class is considered to have been achieved.

Where the class calculated from the measured energy and the size range is the same as or better than that declared but the measured energy is outside the tolerances allowed by the standard, the declared energy class is considered to have been achieved.

Where the class calculated from the measured energy and size range is lower than that declared but the measured energy is within the tolerances allowed by the standard, the declared energy class is considered to have been achieved.

Where the class calculated from the measured energy and size range is lower than that declared but the measured energy is outside the tolerances allowed by the standard, the declared energy class is considered not to have been achieved.

Where the measured usable volume is outside of the tolerances allowed by the standard causing the size band to change giving rise to a lower class than that declared, the declared energy class is considered not to have been achieved.

4. Testing Results and Tables

4.1 Overall Summary of Test Results

Table 1. Numbers of Products Tested Performing/Not Performing in Accordance with										
C	Declarations on the	Label								
Label Declarations	Number of	Number of	% of Product							
	products tested	products tested	Tested Not							
	Performing to	Not Performing to	Performing to							
	Declarations	Declarations	Declarations							
Energy Efficiency Class	23	1	4							
Energy consumption (kWh)	22	2*	8							
Usable Volume (L)	11	13	54							
Size	23	1	4							
All	11	13	54							
* 1 of these 2 appliances lists conventional and forced air energy consumption on the label, but the										
appliance only has a forced air function	on									

The table above indicates that

- 11 out of the 24 appliances tested (46%) performed in accordance with all the claims on the labels.
- 13 out of the 24 appliances tested (54%) did not perform in accordance with one or more declarations on the labels
- 1 out of the 24 appliances tested (4%) did not perform in accordance with the energy efficiency class claim due to the usable volume measurement changing the size from large to medium thus requiring the use of lower class limits.
- 2 out of the out of the 24 appliances tested (8%) did not perform in accordance with the energy consumption claims. Of these 1 had a measured value outside the tolerance

specified and 1 had a value declared on the label for a non- existent conventional heating function.

- 13 out of the 24 appliances tested (54%) did not perform in accordance with the usable volume claims. Of these 7 measured smaller than claimed and 6 measured larger.
- 1 out of the out of the 24 appliances tested (4%) did not perform in accordance with the size claim due to incorrect measurement of usable volume.

The 24 appliances totalled 36 cavities and the declared energy efficiency classes consisted of 17 A, 15B and 4 C class cavities.

The ovens selected performed well against their claimed energy efficiency and energy consumption. Only one model failed to achieve its declared energy efficiency class with a measured class of C against a declared B and this was due to a size category change caused by a difference in measurement of the usable volume from that declared by the manufacturer. One other model failed to achieve its declared value of energy consumption and one model claimed an energy consumption value for a function that did not exist.

The most commonly un-achieved performance parameter was usable volume where 13 models failed to achieve their measured values. Discussions between Defra the manufacturers and their respective appointed independent accredited test laboratories revealed that in the majority of cases this was due to a lack of clarity in the current standard. The lack of precise wording can give rise to different interpretations of how the dimensions are to be measured. This accounts for the results of the measurements made by the Defra laboratory (using one interpretation), showing models not to have achieved the declared usable volume, while the manufacturer appointed independent accredited laboratories' results or their own factory testing results (using a different interpretation), show models achieving the declared usable volume.

A new version of the standard is due to come into force at the end of 2009 which defines a precise and unambiguous method of measurement but until the Official Journal of the European Communities is amended to reference this new version, the older version, with its opportunities for interpretation, will remain in use as the required standard for verification of energy labelling performance parameters.

Comments are made in the individual results where this situation pertains and manufacturers have offered test results or other information to demonstrate their interpretation.

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4.2 Brand Performance

The following table shows how well the brands selected and tested performed against their declared values for energy efficiency class, energy consumption, usable volume and size category.

Table 2. Indicatin	g where Brands are Achieving/	not achiev	ing the Clai	ms on the	Label
X indicates that the p	roduct did not achieve the perform	ance value	s and/or ene	rgy efficien	cy class
declared on the label					
Brand	Model	Labo	el Performan	ce Parame	ters
		Energy Efficiency Class	Energy Consumption (kWh)	Usable Volume (L)	Size
Matsui	MSF60SS		X	X	
Kenwood	СК270			X	
Baumatic	В904.1SS-В				
Smeg	SC371MFX				
Neff	U1422NOGB			X	
Neff	U1722NOGB			X	
Bosch	HBN430551B/01				
AEG Electrolux	B4101-5-M			X	
Ignis	AKL 906/IX				
Rangemaster	Classic 90 Dual Fuel				
Indesit	K3E1(W)/G				
Zanussi	ZKC6020W			X	
Belling	358 An 00799				
Hotpoint	SY56X/1			X	
Belling	XOU70FP MK II			X	
Cannon	Cucina C60EKW	X		X	Х

Bosch	HBN131521B			
Stoves	Sterling 1000DF Black		X	
Hotpoint	Creda C367EWH		X	
Whirlpool	AKP 201/IX			
Beko	D 532 S			
Electrolux	EOB 53000K Black	X	X	
New World	NW60F 444447283		x	
Tricity Bendix	SE500/1X			

4.3 Summary Tables of Test Results by Brand

Red Italics indicate that the product has not achieved the performance values and/or energy

efficiency class declared on the label

Label Para	ameter	Energy Efficiency Class		Energy Consumption in kWh			Usabl (L)	e Volui	ne	Size	
Maximum Va from Declare accordance v	ariance Allowed ed Value in with standard (EN			Measured value < value declared by the manufacturer plus 10%			Measu declare manufa	red value ed by the acturer +	e = value /- 5%.	Small	12 ≤ vol. < 35
50304:2001 I Corrigendum	ncorporating 1 No.1.)			plus 0.040 kWh.						Medium	35 l ≤ vol. < 65 l
										Large	65 l ≤ vol.
		Declared	Measured	Declared	Measured	Value Allowed	Declared Measured Value Allowed			Declared	Measured
Brand and	d Model	Mat	Matsui MSF60ss								
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	В	В	0.86	0.88	<0.98	55	59	52.2 to 57.7	Medium	Medium
	Conventional			0.82	0.96	<0.94					
Measured pe	erformance:								L	•	
This model di conventional consumption	d not achieve its decl heating function. Its d	ared valu energy ef	e of usat ficiency o	ole volume class was n	. In addition in the second seco	on it did no ed as this h	ot achieve as been c	e its decla leclared	ared energy o based on the	consumption forced air end	or the ergy
Manufacture	r's Response:										
The Manufacturer accepted the results for energy consumption as 0.96 kWh and has stated that the label has been changed in production and at retail outlets. The manufacturer challenged the measurement of usable volume.							production				
Defra Comm	ents:										
Discussion wi	ith the manufacturer a	and Defra	a's indep	endent acc	credited la	boratory,	revealed	that the	differences in	n measureme	nt of cavity

size arose from lack of clarity in the standard, allowing for difference in interpretation of how oven depth should be measured. A new version of the standard is due to come into force at the end of 2009 which defines a precise and unambiguous method of measurement but until the Official Journal of the European Communities is amended to reference this new version, the older version, with its opportunities for interpretation, will remain in use as the required standard for verification of energy labelling performance parameters.

Label Para	ameter	Energ Efficie Class	Energy Efficiency Class		Energy Consumption in kWh			e Volu	me	Size			
Maximum Va from Declare accordance v	ariance Allowed ed Value in vith standard (EN			Measur declared manufa	ed value < d by the cturer plu	value s 10%	Measu declare manuf	red value ed by the acturer +	e = value 	Small	12 ≤ vol. < 35		
50304:2001 I Corrigendum	ncorporating No.1.)			plus 0.040 kWh.						Medium	35 l ≤ vol. < 65 l		
										Large	65 l ≤ vol.		
		Declared	Measured	Declared	Measured	Value Allowed	Declared Measured Value Allowed			Declared	Measured		
Brand a	and Model	Ken	Kenwood CK270										
Market Pictu	re Testing Results:												
Cavity 1	Forced Air	С	В	1.19	0.95	<1.35	57	64	54.1 to 59.8	Medium	Medium		
	Conventional												
	Forced Air												
Cavity 2	Conventional	В	A	0.92	0.76	<1.05	35	39	33.2 to 36.7	Medium	Medium		
Measured pe	erformance:						•		•	•			
This model d	id not achieve the de	clared val	ues of us	able volur	ne for eith	ier of its tw	vo cavitie	·S.					
Manufacture	er's Response:												
The manufac													
Defra Comm	Defra Comments:												
Discussions v incorrectly. T	Discussions with the manufacturer and the test laboratory revealed that the manufacturer had been measuring the oven cavity height incorrectly. The manufacturer agreed to re-label models using the correct method.												

Maximum Variance Allowed from Declared Value in accordance with standard (EN 50304:2001 Incorporating Corrigendum No.1.)		Energ Efficie Class	y ency	in kWh Measured value < value declared by the manufacturer plus 10% plus 0.040 kWh.			(L) Measured value = value declared by the manufacturer +/- 5%.			Size Small Medium Large	12 ≤ vol. < 35 35 ≤ vol. < 65 65 ≤ vol.
	Declared	Measured	Declared	Measured	Value Allowed	Declared Measured Value Allowed		Declared	Measured		
Brand and Model		Bau	Baumatic B904.1SS-B								
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	В	В	0.99	0.86	<1.13	53	54	50.3 to 55.6	Medium	Medium
	Conventional										
	Forced Air										
Cavity 2 Conventional		С	В	0.99	0.73	<1.13	32	32	30.4 to 33.6	Small	Small
Measured pe	erformance: chieved all its declare	arameter	s.								

Maximum Variance Allowed from Declared Value in accordance with standard (EN 50304:2001 Incorporating Corrigendum No.1.)		Energ Efficio Class	ancy	Measured value < value declared by the manufacturer plus 10% plus 0.040 kWh.			(L) Measured value = value declared by the manufacturer +/- 5%.			Size Small Medium Large	12 ≤ vol. < 35 35 ≤ vol. < 65 65 ≤ vol.
	Declared	Measured	Declared	Measured	Value Allowed	Declared Measured Value Allowed			Declared	Measured	
Brand a	and Model	Sme	Smeg SC371MFX								
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	A	В	0.79	0.84	<0.91	51	49	48.4 to 53.5	Medium	Medium
	Conventional										
Cavity 2	Forced Air										
	Conventional										
Measured pe	erformance: chieved all its declare	d label pa	arameter	s.							

Label Para	ameter	Energy Efficiency Class		Energy Consumption in kWh			Usab (L)	le Volu	me	Size			
Maximum Va from Declare accordance v	ariance Allowed ed Value in with standard (EN			Measur declared manufa	< value	Measu declar manuf	ired valu ed by the facturer +	e = value e +/- 5%.	Small	12 ≤ vol. < 35			
50304:2001 Corrigendum	Incorporating No.1.)			plus 0.0	plus 0.040 kWh.					Medium	35 l ≤ vol. < 65 l		
										Large	65 l ≤ vol.		
	Declared			Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured		
Brand a	and Model	Nef	Neff U1422NOGB										
Market Pictu	re Testing Results:												
Cavity 1	Forced Air	A	A	0.79	0.70	<0.91	58	62	55.1 to 60.9	Medium	Medium		
	Conventional												
	Forced Air												
Cavity 2	Conventional	В	В	0.79	0.65	<0.91	30	31	28.5 to 31.5	Small	Small		
Measured performance: This model did not achieve the declared value of usable volume for one of its two cavities.													
Manufacturer's Comments: The manufacturer accepts the findings of the report in relation to declared usa our intention to amend the published usable capacity information for all affect							volume f nodels a	for the No s soon as	eff model U: possible.	1422N0GB, an	d confirm		

Label Para	ameter	Energ Effici Class	Energy Efficiency Class		Energy Consumption in kWh			le Volu	me	Size			
Maximum Va from Declare accordance v	ariance Allowed ed Value in with standard (EN			Measured value < value declared by the manufacturer plus 10%			Measu declar manuf	red valu ed by th	ie = value e +/- 5%.	Small	12 ≤ vol. < 35		
50304:2001 Corrigendum	Incorporating No.1.)			plus 0.040 kWh.						Medium	35 l ≤ vol. < 65 l		
										Large	65 l ≤ vol.		
		Declared Measured Measured Allowed Declared Measured Value Allowed Allowed					Declared	Measured					
Brand a	and Model	Nef	Neff U1722NOGB										
Market Pictu	re Testing Results:												
Cavity 1	Forced Air	A	A	0.79	0.60	<9.1	45	50	42.7 to 47.2	Medium	Medium		
	Conventional												
	Forced Air												
Cavity 2	Conventional	В	В	0.79	0.60	<9.1	30	30	28.5 to 31.5	Small	Small		
Measured performance: This model did not achieve its declared value of usable volume for one of its two cavities.													
Manufacturer's Response: The manufacturer accepts the findings of the report in relation to declared usable volume for the Neff model U1722N0GB and confirm o intention to amend the published usable capacity information for all affected models as soon as possible.								confirm our					

Label Para	ameter	Energ Efficie Class	sy ency	Energy Consumption in kWh			Usabl (L)	e Volur	ne	Size	
Maximum Va from Declare accordance v	ariance Allowed ed Value in vith standard (EN			Measured value < value declared by the manufacturer plus 10%			Measured value = value declared by the manufacturer +/- 5%.			Small	12 ≤ vol. < 35
50304:2001 I Corrigendum	ncorporating No.1.)			plus 0.0	40 kWh.					Medium	35 l ≤ vol. < 65 l
										Large	65 l ≤ vol.
	Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured	
Brand a	and Model	Bosch HBN430551B/01									
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	A	A	0.79	0.69	<0.91	58	58	55.1 TO 60.9	Medium	Medium
	Conventional			0.89	0.81	<1.02					
Measured performance: This model achieved all its declared label parameters.											

Label Para	ameter	Energ Efficio Class	gy ency	Energy in kWl	y Consu h	mption	Usabl (L)	e Volu	me	Size	
Maximum Va from Declare accordance v	ariance Allowed ed Value in with standard (EN			Measur declare manufa	ed value < d by the cturer plu	< value	Measu declare manufa	red value ed by the acturer +	e = value /- 5%.	Small	12 ≤ vol. < 35
50304:2001 Corrigendum	ncorporating No.1.)			plus 0.0	40 kWh.				-	Medium	35 ≤ vol. < 65
		d Model AEG esting Results:								Large	65 l ≤ vol.
		Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured
Brand a	and Model	AEG	i Elec	trolux	x B41	01-5-N	Л				
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	A	A	0.79	0.70	<0.91	51	47	48.4 to 53.5	Medium	Medium
	Forced Air A A 0.79 0.70 <0.91 51 4 Conventional 0.87 0.77 <0.99										
This model d Manufacture The manufac Certification	ared valu e model i dent accr	ue of usal meets the edited la	ble volume e standarc boratory)	e. I requiren based upo	nents for U	sable Vo one samp	lume as le purcha	shown in a ro	eport from VI dently.	DE Testing &	
Manufacture	er's Test Results										
Cavity 1	Forced Air							51		Medium	Medium
	Conventional										
Defra Comm	ients:		1	1		1			1	1	1
Discussion w size arose fro version of the of measurem with its oppo parameters.	ith the manufacturer om lack of clarity in the e standard EN50304/I nent but until the Offic rtunities for interpret	and Defr e standar EN60350 cial Journ ation, wi	a's indep rd, allowi is due to al of the ill remain	endent ac ng for diffi come into European in use as	credited la erence in o force at Commun the requir	aboratory, interpretat the end of ities is ame ed standar	revealed ion of ho 2009 whi nded to r d for veri	that the w oven c ich define reference fication c	differences in lepth should es a precise a e this new ver of energy labo	n measuremen be measured. nd unambigue rsion, the olde elling perform	nt of cavity A new ous method er version, ance
An independ manufacture Directive 200 Any differend professional	er's Comments lent accredited labor 's declared usable vo 12/40EG. The results c ces between the resul differences in interpro	atory te lume sta obtained ts obtain etation o	st report ited on t by VDE a ed by the f the curr	demonst he Energy re in line v e two diffe rent standa	rates that Label, in vith those rent natio ard.	an indepo correspone obtained b onally accre	endently dence wi by Electro dited lab	purchase th the cu lux's own oratories	ed sample o urrent standa n test laborat s are due to o	of this model ard EN50304:2 ories. rganisational	, meets the 2001 and EC /

Maximum Variance Allowed from Declared Value in accordance with standard (EN 50304:2001 Incorporating Corrigendum No.1.)		Efficiency Class		Energy in kWł Measurd declared manufa plus 0.0	r Consur n d value < d by the cturer plus 40 kWh.	value s 10%	Usabl (L) Measu declare manufa	e Volui red value ed by the acturer +	ne 2 = value /- 5%.	Size Small Medium	12 ≤ vol. < 35 35 ≤ vol. < 65
										Large	65 l ≤ vol.
		Declared	Measured	Declared	Measured	Value Allowed	Declared Measured Value Allowed		Value Allowed	Declared	Measured
Brand and Model		Igni	Ignis AKL 906/IX								
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	A	A	0.79	0.74	<0.91	53	52	50.3 to 55.6	Medium	Medium
	Conventional										
Cavity 2	Forced Air										
	Conventional										
Measured performance: This model achieved all its declare		d label pa	arameter	s.							

Label Para Maximum Va from Declare accordance v 50304:2001 I Corrigendum	ameter ariance Allowed d Value in vith standard (EN ncorporating I No.1.)	Energ Efficie Class	y ency	Energy in kWh Measurd declared manufad plus 0.04	r Consun n d value < d by the cturer plus 40 kWh.	value 5 10%	Usabl (L) Measu declare manufa	e Volur red value ed by the acturer +	ne 2 = value /- 5%.	lue Small : . Medium : Large	
		Declared	Measured	Declared	Measured	Value Allowed	Declared Measured Allowed		Declared	Measured	
Brand and Model		Ran	gema	ister C	lassic	90 Du	al Fu	el			
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	A	A	0.85	0.80	<0.975	67	70	63.6 to 70.3	Large	Large
	Conventional										
Cavity 2	Forced Air	В	В	0.95	0.93	<1.085	53	53	50.3 to 55.6	Medium	Medium
	Conventional										
Measured performance: This model achieved all its declare		d label pa	arameter	s.							

Label Para Maximum Va from Declare accordance v 50304:2001 I Corrigendum	ameter ariance Allowed ed Value in vith standard (EN ncorporating n No.1.)	Energ Efficie Class	y ency	Energy in kWh Measure declared manufae plus 0.00	r Consun ded value < d by the cturer plus 40 kWh.	value 10%	Usabl (L) Measu declare manufa	e Volur red value d by the acturer +	ne = = value /- 5%.	Size Small Medium Large	12 ≤ vol. < 35 35 ≤ vol. < 65 65 ≤ vol.
		Declared	Measured	Declared	Measured	Value Allowed	Declared Measured Value Allowed			Declared	Measured
Brand and Model		Indesit K3E1(W)/G									
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	В	С	0.99	1.03	<1.129	58	60	55.1 to 60.9	Medium	Medium
	Conventional										
Cavity 2	Forced Air										
	Conventional										
Measured pe	erformance: chieved all its declare	d label pa	arameter	s.							

										Ci	
Label Para	ameter	Energ	Ϋ́Υ	Energy	Consur	nption	Usabl	e Volur	ne	Size	
		Efficie	ency	in kWh	ı 👘						
		Class					(L)				
Maximum Va	ariance Allowed			Measure	ed value <	value	Measu	red value	e = value	Small	12 ≤ vol.
from Declare	d Value in			declared	l by the		declare	d by the			< 35
accordance v	vith standard (EN			manufa	turer plus	s 10%	manufa	acturer +	/- 5%.		
50304:2001 I	ncorporating			plus 0.04	40 kWh.					Medium	35 l ≤ vol.
Corrigendum	No.1.)			•							< 65 l
-											
										Large	65 l ≤ vol.
			1			-		1	r		
		g	ed	p	ed	σ	þ	ed	, T	p	eq
		lare	sur	lare	sur	alue	lare	sur	alue	lare	sur
		Dec	lea	Dec	lea	Allo	Dec	lea	Allo	Dec	lea
					-			-			-
Brand and Model		Zanı	ussi E	lectro	lux ZK	C6020)W				
Market Pictu	re Testing Results:										
	U										
Cavity 1		А	А	0.79	0.75	<0.909	58	58	55.1 to	Medium	Medium
	Forced Air								60.9		
	Conventional										
	Forced Air										
Covity 2											
Cavity 2		А	А	0.79	0.74	<0.909	37	39	35.1 to	Medium	Medium
	Conventional								38.8		
Measured pe	erformance:										
						e					
This model di	d not achieve its decl	ared valu	ie of usat	ble volume	for one o	f its cavitie	es.				
Manufacturo	r's Posponso;										
manufacturer 5 Kesponse.											
The manufac	turer asserts that the	model m	eets the	requireme	onts for Us	able Volur	ne as stai	ted in sta	ndard EN503	804·2001 and	FC Directive
2002/40EG		moderm		requirente						J04.2001 unu	Le blicetive
2002/4020.											
Defra's Comr	ments:										
Discussion wi	th the manufacturer	and Defra	a's indep	endent acc	credited te	est laborate	ory, reve	aled that	the differen	ces in measure	ement of
cavity size ar	ose from lack of clarit	v in the c	tandard	allowing f	or differen	co in intor	nretation	ofhow	oven denth s	hould be mea	sured A

cavity size arose from lack of clarity in the standard, allowing for difference in interpretation of how oven depth should be measured. A new version of the standard EN50304/EN60350 is due to come into force at the end of 2009 which defines a precise and unambiguous method of measurement but until the Official Journal of the European Communities is amended to reference this new version, the older version, with its opportunities for interpretation, will remain in use as the required standard for verification of energy labelling performance parameters.

Manufacturer's Comments

Discussions between the manufacturer and Defra's appointed test laboratory identified that perceived differences in measured useable volume were due to differing interpretations of internal measurement positions in the current standard. The manufacturer's measurements and tests are based upon the interpretation of the standard provided by the German accredited test and certification laboratory VDE. This interpretation is supported by other European nationally accredited, domestic appliance test and certification institutes.

Label Para Maximum Va from Declare accordance v 50304:2001 I Corrigendum	ameter ariance Allowed ed Value in with standard (EN ncorporating n No.1.)	Energ Efficie Class	nergy Energy Consumption Usable Volume S fficiency in kWh (L) (L) lass Measured value < value Measured value = value S declared by the manufacturer plus 10% manufacturer +/- 5%. N plus 0.040 kWh. Image: Consumption Image: Consumption Image: Consumption Image: Consumption		Size Small Medium Large	12 ≤ vol. < 35 35 ≤ vol. < 65 65 ≤ vol.					
		Declared	Measured	Declared	Declared Measured Value Allowed Declared Measured Allowed		Value Allowed	Declared	Measured		
Brand and Model		Bell	ing 3	58 An	0079	9					
Market Pictu	re Testing Results:										
Cavity 1	Forced Air										
	Conventional	С	В	1.1	0.81	<1.25	54	58	51.3 to 56.7	Medium	Medium
	Forced Air										
Cavity 2	Conventional	С	С	0.99	0.86	<1.129	28	28	26.6 to 29.4	Small	Small
Measured pe	erformance: chieved all its declare	d label pa	arameter	s.							

Label Parameter Maximum Variance Allowed		Energy Efficiency Class		Energy Consumption in kWh Measured value < value			(L) Measured value = value			Size	
Maximum Va from Declare	ariance Allowed ed Value in with standard (EN			Measure declared	ed value < d by the	value	Measu declare	ed value d by the	e = value	Small	12 ≤ vol. < 35
50304:2001 I Corrigendum	ncorporating No.1.)			plus 0.0	40 kWh.	5 10/5	manure		570.	Medium	35 l ≤ vol. < 65 l
										Large	65 l ≤ vol.
		Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured
Brand a	and Model	Hot	point	SY56	X/1						
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	B A 0.98 0.77 <1.118 56 53 53.2 to 58.8					Medium	Medium			
	Conventional			1.08	0.85	<1.228					
Measured pe This model d	id not achieve its decl	ared valu	ie of usat	ole volume							
Manufacture The manufac	er's Response: turer challenged the r	results.									
Manufacture	er's Test Results										
Cavity 1	Forced Air	56									
	Conventional										
Defra's Com	ments:										
Discussion wi cavity size are new version method of m	Discussion with the manufacture cavity size arose from lack of clar new version of the standard EN5 method of measurement but unt		a's indep tandard, 0350 is di tial Journa	endent acc allowing f ue to come al of the Eu	credited te or differer e into force uropean C	est laborate nce in inter e at the en ommunitie	ory, revea pretation d of 2009 es is amer	aled that of how o which d nded to re	the differend oven depth s efines a prec eference this	ces in measure hould be mea ise and unam new version,	ement of sured. A biguous the older

version, with its opportunities for interpretation, will remain in use as the required standard for verification of energy labelling performance parameters.

Label Para	Label Parameter Maximum Variance Allowed		¦y ≥ncy	Energy in kWł	י Consur ו	nption	Usabl	e Volu	me	Size	
Maximum Va from Declare accordance v	ariance Allowed ed Value in with standard (EN			Measure declared manufa	ed value < d by the cturer plu	value s 10%	Measu declare manuf	red value ed by the acturer +	e = value e -/- 5%.	Small	12 ≤ vol. < 35
50304:2001 I Corrigendum	L Incorporating m No.1.)			plus 0.04	40 kWh.					Medium	35 l ≤ vol. < 65 l
										Large 65 l ≤	
Prond and Model		Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured
Brand a	Bell	ing X	0070	FP MI	< 11						
Market Picture Testing Results											
Cavity 1	Forced Air	A	A	0.79	0.76	<0.909	50	42	47.5 to 52.5	Medium	Medium
	Conventional										
	Forced Air										
Cavity 2	Conventional	В	В	0.79	0.76	<0.909	31	32	29.4 to 32.5	Small	Small
Measured pe	erformance:			•							1
This model di	id not achieve its dec	lared valu	ie of usal	ble volume	2.						
Manufacture	er's Response:										
None.											

Label Para	ameter	Energ Efficio Class	ξΥ ency	Energy in kWI	y Consui h	mption	Usab (L)	le Volu	me	Size	
Maximum Va from Declare accordance v	ariance Allowed ed Value in vith standard (EN			Measur declare manufa	ed value < d by the cturer plu	< value	Measu declare manuf	red value ed by the acturer +	e = value e -/- 5%.	Small	12 ≤ vol. < 35
50304:2001 I Corrigendum	ncorporating No.1.)			plus 0.0	blus 0.040 kWh. Medium		Medium	35 l ≤ vol. < 65 l			
			<u> </u>				Large	65 l ≤ vol.			
		Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured
Brand a	and Model	Can	non	Cucina	a C60I	EKW				·	
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	В	С	1.19	1.12	<1.349	9 65 61 61.7 to 68.3 68.3 68.3 68.3			Large	Medium
	Conventional										
	Forced Air										
Cavity 2	Cavity 2		С	0.99	0.85	<1.129	35	34	33.2 to 36.7	Medium	Small
Measured pe	erformance:		1	I	1	1					
This model d means that t	id not achieve its decl he declared energy ef	lared usa	ble volun class is no	ne value fo ot consider	or cavity 1 red to hav	and as a re e been ach	esult its s ieved.	ize categ	ory is conside	ered medium.	This in turn
Manufacture	er's Response:										
The manufac	turer (Indesit) challer	nged the	results ar	nd supplied	d results o	f tests carr	ied out b	y an inde	ependent lab	oratory.	
Manufacture	er's Test Results										
Cavity 1	Forced Air							68			Large
	Conventional										
Cavity 2	Forced Air										
	Conventional							36			Medium
Defra Comm	ients:			<u> </u>							
Discussion w cavity size are new version method of m version, with	ith the manufacturer ose from lack of clarit of the standard EN50 easurement but until its opportunities for	and Defr ty in the s 304/EN6 the Offic interpret	a's indep standard, 0350 is di sial Journs ation, wil	endent ac allowing f ue to com al of the E Il remain in	credited to for different e into forco uropean C n use as th	est laborati nce in inter ce at the en Communitie ne required	ory, reve pretation of of 200 es is ame standar	aled that n of how 9 which o nded to r d for veri	the different oven depth s defines a prec reference this fication of en	ces in measur hould be mea cise and unam new version, ergy labelling	ement of asured. A biguous the older

performance parameters.

Label Para	ameter	Energ Efficie Class	sy ency	Energy in kWł	r Consur า	nption	Usabl (L)	e Volur	ne	Size	
Maximum Va from Declare accordance v	ariance Allowed ed Value in vith standard (EN			Measure declared manufa	ed value < d by the cturer plus	value	Measu declare manufa	red value ed by the acturer +	e = value /- 5%.	Small	12 ≤ vol. < 35
50304:2001 I Corrigendum	ncorporating No.1.)			plus 0.0	40 kWh.					Medium	35 ≤ vol. < 65
							eclared easured Value Mowed			Large	65 l ≤ vol.
		Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured
Brand a	and Model	Bos	ch HI	BN131	521B						
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	A	A	0.79	0.79	<0.909	9 58 58 55.1 to 60.9			Medium	Medium
	Conventional										
Measured performance:		d label pa	arameter	s.							

Label Para	ameter	Energ Effici Class	Energy Efficiency Class		Energy Consumption in kWh			le Volu	me	Size	
Maximum Va from Declare accordance v	ariance Allowed ed Value in with standard (EN			Measure declaree manufa	ed value < d by the cturer plu	value s 10%	Measu declare manuf	red valu ed by the acturer +	e = value e -/- 5%.	Small	12 ≤ vol. < 35
50304:2001 Incorporating Corrigendum No.1.)				plus 0.0	40 kWh.					Medium	35 l ≤ vol. < 65 l
							Declared Measured Value Allowed			Large	65 l ≤ vol.
Prond and Madal		Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured
Brand and Model		Sto	ves 10	000DF	Black						
Market Pictu	re Testing Results:	•									
Cavity 1	Forced Air	A	В	0.77	0.86	<0.887	47	42	44.6 to 49.3	Medium	Medium
	Conventional			0.85	0.76	<0.975					
Cavity 2	Forced Air	A	В	0.77	0.81	<0.887	52	45	49.4 to 54.6	Medium	Medium
	Conventional										
Measured pe	erformance:		1	•	1	1		<u> </u>	I	1	1
This model d	id not achieve the de	clared va	lue of usa	able volum	e for eithe	er of its tw	o cavities	5.			
Manufacture	er's Response:										
None.											

Label Para	ameter	Energ Efficie Class	sy ency	Energy in kWł	/ Consur n	nption	Usabl (L)	e Volu	me	Size	
Maximum Va from Declare	ariance Allowed d Value in with standard (EN			Measure declaree manufa	ed value < d by the cturer plu	value	Measu declare manufa	red value ed by the acturer +	e = value : :/- 5%.	Small	12 ≤ vol. < 35
50304:2001 Corrigendum	ncorporating No.1.)		plus 0.040 kWh.					,	Medium	35 l ≤ vol. < 65 l	
										Large	65 l ≤ vol.
		Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured
Brand a	and Model	Hot	point	Cred	a C36	57EWH	1				
Market Pictu	re Testing Results:	•									
Cavity 1	Forced Air	Forced Air B B Conventional				<1.349	65	62	61.7 to 68.2	Large	Medium
	Conventional										
	Forced Air										
Cavity 2	Cavity 2 Conventional		В	0.98	0.81	<1.118	35	37	33.2 to 36.7	Medium	Medium
Measured pe	erformance:		1	I	1		1	I	<u> </u>	1	
This model d	id not achieve its decl	ared usa	ble volun	ne value.							
Manufacture	er's Response:										
The manufac	turer (Indesit) challer	iged the i	results ar	nd supplied	d results o	f tests carr	ied out a	t an inde	pendent lab	oratory.	
Manufacture	er's Test Results										
Cavity 1	Forced Air							68			Large
	Conventional										
Cavity 2	Forced Air										
	Conventional							36			Medium
Defra's Com	ments:	I									
Discussion w cavity size ar new version method of m version, with	Defra's Comments: Discussion with the manufacturer cavity size arose from lack of clari new version of the standard EN50 method of measurement but unt version, with its opportunities for		a's indep tandard, 0350 is d ial Journ ation, wil	endent ac allowing f ue to come al of the Eu Il remain ir	credited to or different e into forc uropean C n use as th	est laboration nce in inter e at the en communitie ne required	ory, reve pretation d of 2009 es is ame	aled that n of how 9 which c nded to r d for veri	the differen oven depths defines a pre- reference this fication of er	ces in measur should be mea cise and unarr s new version nergy labelling	ement of asured. A abiguous , the older

performance parameters.

Label Parameter		Energ Efficie Class	sy ency	Energy Consumption in kWh			Usable Volume (L)			Size	
Maximum Variance Allowed from Declared Value in accordance with standard (FN				Measured value < value declared by the manufacturer plus 10%			Measured value = value declared by the manufacturer +/- 5%.			Small	12 ≤ vol. < 35
50304:2001 Incorporating Corrigendum No.1.)				plus 0.040 kWh.						Medium	35 l ≤ vol. < 65 l
									Large	65 l ≤ vol.	
		Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured
Brand a	and Model	Whirlpool AKP 201/IX									
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	A	В	0.91	0.81	<1.041	53	53	50.3 to 55.6	Medium	Medium
	Conventional			0.79	0.84	<0.909					
Measured performance: This model achieved all its declared label parameters.											

Label Parameter		Energy Efficiency Class		Energy Consumption in kWh			Usabl (L)	e Volui	ne	Size	
Maximum Variance Allowed from Declared Value in accordance with standard (FN				Measured value < value declared by the manufacturer plus 10%			Measured value = value declared by the manufacturer +/- 5%.			Small	12 ≤ vol. < 35
50304:2001 Incorporating Corrigendum No.1.)				plus 0.040 kWh.						Medium	35 l ≤ vol. < 65 l
										Large	65 l ≤ vol.
		Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured
Brand a	and Model	Bek	o D5	32 S							
Market Pictu	re Testing Results:										
Cavity 1	Forced Air										
	Conventional	В	A	0.9	0.76	<1.03	54	55	51.3 to 56.7	Medium	Medium
Measured performance: This model achieved all its declared label parameters.											

Label Parameter		Energ Efficie Class	gy ency	Energy in kWI	y Consumption h		Usable Volume (L)			Size	
Maximum Variance Allowed from Declared Value in accordance with standard (EN				Measured value < value declared by the manufacturer plus 10%			Measured value = value declared by the manufacturer +/- 5%			Small	12 ≤ vol. < 35
accordance with standard (EN 50304:2001 Incorporating Corrigendum No.1.)				plus 0.0	plus 0.040 kWh.						35 l ≤ vol. < 65 l
										Large	65 l ≤ vol.
		Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured
Brand a	and Model	Electrolux EOB 53000K Black									
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	A	A	0.79	0.72	<0.909	51	46	48.4 to 53.5	Medium	Medium
	Conventional			0.9	N/A*						
Measured performance:											
This model d *In addition i model tested	This model did not achieve its declared usable volume value. *In addition it declared a value of energy consumption for a conventional heating function but this function was not found on the sample model tested.										
Manufacture	er's Response:										
The manufacturer asserts that the model meets the standard requirements for Usable Volume as shown by a report from VDE Testing & Certification Institute (an independent accredited laboratory) based upon one sample purchased independently. *A conventional Energy Consumption declaration figure was made in error for this model. The Energy Labelling information for this model was amended in May 2009.											
Manufacture	er's Test Results										
Cavity 1	Forced Air							51		Medium	Medium
	Conventional										
Defra's Com	ments:										
Discussion with the manufacturer and Defra's independent accredited test laboratory, revealed that the differences in measurement of cavity size arose from lack of clarity in the standard, allowing for difference in interpretation of how oven depth should be measured. A new version of the standard EN50304/EN60350 is due to come into force at the end of 2009 which defines a precise and unambiguous method of measurement but until the Official Journal of the European Communities is amended to reference this new version, the older version, with its opportunities for interpretation, will remain in use as the required standard for verification of energy labelling performance parameters.											
Manufacture	er's Comments										
An independ manufacture Directive 200	An independent accredited laboratory test report demonstrates that an independently purchased sample of this model, meets the manufacture's declared usable volume stated on the Energy Label, in correspondence with the current standard EN50304:2001 and EC Directive 2002/40EG										

The results obtained by VDE are in line with those obtained by Electrolux's own test laboratories.

Any differences between the results obtained by the two different nationally accredited laboratories are due to organisational / professional differences in interpretation of the current standard.

Label Para Maximum Va	Energy Efficiency Class		Energy Consumption in kWh Measured value < value declared by the			Usable Volume (L) Measured value = value declared by the			Size Small 12 ≤ vol. ≤ 35		
accordance with standard (EN 50304:2001 Incorporating Corrigendum No.1.)				manufacturer plus 10% plus 0.040 kWh.			manufacturer +/- 5%.			Medium Large	35 l ≤ vol. < 65 l 65 l ≤ vol.
	Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured	
Brand a	Nev	v Wo	rld N\	N60F	44444	7283	3				
Market Pictu	re Testing Results:										
Cavity 1	Forced Air	В	В	0.99	0.87	<1.129	54	47	51.3 to 56.7	Medium	Medium
	Conventional										
Cavity 2	Forced Air										
	Conventional										
Measured performance: This model did not achieve its declared usable volume value.											
Manufacture None.	Manufacturer's Response: None.										

Label Parameter Maximum Variance Allowed from Declared Value in accordance with standard (EN 50304:2001 Incorporating Corrigendum No.1.)		Energ Efficie Class	y ency	Energy in kWł Measurd declared manufa plus 0.0	y Consur n ed value < d by the cturer plus 40 kWh.	value 10%	Usable Volume Siz			Size Small Medium Large	12 ≤ vol. < 35 35 ≤ vol. < 65 65 ≤ vol.
		Declared	Measured	Declared	Measured	Value Allowed	Declared	Measured	Value Allowed	Declared	Measured
Brand and Model		Trici	ty Be	endix	SE500	/1X					
Market Pictu	re Testing Results:										
Cavity 1	1 Forced Air		A	0.79	0.72	<0.909	58	59	55.1 to 60.9	Medium	Medium
	Conventional										
	Forced Air										
Cavity 2 Conventional		A	A	0.79	0.69	<0.909	37	38	35.1 to 38.8	Medium	Medium
Measured performance:											