

# **Come On Labels**

## **Common appliance policy – All for one, One for all – Energy Labels**

Contract N°: IEE/09/628/SI2.558219

### **APPLIANCE TESTING**

## **Summary list of tests results carried out on household appliances**

**(Work Package 3 - Deliverable 3.5)**

**V1.0: August 2011**

Author: **Milena Presutto, ENEA**

The sole responsibility for the content of this Deliverable lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EACI nor the European Commission are responsible for any use that may be made of the information contained therein.

## Table of Contents

1. Introduction .....	3
2. Verification tests on Household Appliances: the case of Refrigerating Appliances	3
3. Summary of the achieved results.....	18
References .....	19

NOTE: according to international standards dealing with quantities and units, the numbers in this study are written according to the following rules:

- the comma “,” is the separator between the integer and the decimal part of a number
- numbers with more than three digits are divided by a blank in groups of three digits
- in case of monetary values the numbers are divided by a dot in groups of three digits

This document was prepared within the **Come On Labels project**, supported by the Intelligent Energy Europe programme. The main aim of the project, active in 13 European countries, is to support appliance energy labelling in the field of appliance tests, proper presence of labels in shops, and consumer education.

More information about the project results are published on: **[www.come-on-labels.eu](http://www.come-on-labels.eu)**

## 1. INTRODUCTION

Energy labels are a crucial driver for market transformation, orienting consumers' choice towards more energy efficient appliances and thus realizing the potential of available technologies.

Unfortunately, not all Member States apply effective actions for controlling the correct labelling implementation. Without a concerted effort the same is likely to happen for the forthcoming eco-design and energy labelling implementing measures for energy using products.

The Come On Labels project seeks to collect information about product testing, undertaken in order to verify energy consumption related information on the product energy labels. This information will be shared by the project partners with stakeholders, such as national surveillance authorities, manufacturer and retailer representatives, consumer organisations, media, etc.

This document will be published three times during the Come On Labels project duration (12/2010 – 5/2013), and this is its first edition. Based on the project consortium agreement, this first edition focuses on the results of the ATLETE project, which undertook full energy label compliance testing for 82 randomly selected refrigerating appliance models.

The testing results for refrigerating appliances presented in the following parts of this document are one of the main outcome of the ATLETE project<sup>1</sup> the largest ever European project on testing products towards the energy label compliance. Its main goals is to increase European-wide implementation and control of energy labelling and eco-design implementing measures for appliances by:

- giving concrete guidance to EU and National Authorities for an increasingly effective labelling implementation;
- setting a largely shared procedure for the verification of the manufacturers' labelling declaration including a methodology for laboratories accreditation and models selection;
- providing the first pan-European testing results on a large number of household appliances;
- contributing to increasing the attention of the National Authorities through a better awareness of the impact of the energy labelling on the national energy efficiency.

## 2. VERIFICATION TESTS ON HOUSEHOLD APPLIANCES: THE CASE OF REFRIGERATING APPLIANCES

The 82 models of refrigerators and freezers listed in Table 1 were selected in February 2010 and tested in four EU laboratories for compliance to the previous energy labelling directives 94/2/EC and 2003/66/EC. These models belong to the following categories:

---

<sup>1</sup>ATLETE (Appliance Testing for Energy Label Evaluation) project, Grant agreement No IEE/08/728/SI2.528428 [www.atlete.eu](http://www.atlete.eu); see Come On Labels Deliverable 3.4 for a summary description of the project ( <http://www.come-on-labels.eu/appliance-testing/energy-consumption>).

- simple refrigerators: 11 models
- refrigerators with a low temperature compartment: 4 models
- refrigerator-freezers (4 stars): 44 models
- upright freezers: 8 models
- chest freezers: 9 models.

The overall test results per country (in alphabetical order) are presented in Tables 2-27. The total outcome per country includes also the formal non-compliances. Models having failed Step 1 and for which three additional units were not available are not included in the compliance statistic.

Full results and individual test reports for all tested models can be downloaded from the ATLETE Project website: [www.atlete.eu](http://www.atlete.eu) and [http://www.atlete.eu/index.php?option=com\\_content&view=article&id=125&Itemid=117](http://www.atlete.eu/index.php?option=com_content&view=article&id=125&Itemid=117)

For the summary of all tested models at the EU level see chapter 3.

Whether in the case of the old implementing directive (labelling directives 94/2/EC and 2003/66/EC) or the new delegated Regulation 2010/1060/EU, the verification procedure is based on a two-step approach: in Step 1 the check is performed on one sample of the model; in case of non-compliance Step 2 is developed checking three additional samples of the same model.

Depending on the parameter to be verified, a verification tolerance (that takes into consideration the uncertainty in the laboratory measurements) is applied to both Steps. In this respect it is worth noting that for refrigerating appliances the old labelling directives accepted a larger tolerance in Step 1 than in Step 2 for some parameters, while in the new delegated Regulation the allowed tolerance is the same in both Steps.

Table 1: Refrigerators and freezers models selected for the verification compliance tests within the ATLETE project

Brand	Model	EE class	Pass/ Fail	Country of sale <sup>2</sup>													
				ES	GR												
BOSCH	KGN 39A10	A +	Pass	ES	GR												
BALAY	3FEB 2400	A	Pass	ES	PT												
SIEMENS	KI 24 LA 50	A +	Pass	FR	DE	BE	AT	FI	<b>HR</b>								
BOSCH	GSN 86 E 30	A ++	Pass	DE	AT	NL											
REX-ELECTROLUX	FI 22/10 FA FI 22/10 SA	A	Pass	IT	<b>MT</b>												
ZANUSSI	ZRT 318 W	A	Fail	GB	HU	PL	BG	NL	LT	AT	EE	SI	LV	<b>HR</b>			
ZANUSSI	ZRA 627 CW	A	Pass	BE	NL	ES	PT										
ELECTROLUX-AR	AUC 25391 W	A +	3 n.a.	FR													
POLAR	PCB 310 A+ S	A +	Pass	PL													
IGNIS	DPA 24	A	Pass	IT													
WHIRLPOOL	ARC900	A	Pass	GB													
IGNIS	ICF-110 AP	A +	Pass	IT	<b>MT</b>												
INDESIT	BAAN 13 S	A +	R.A.	IT	BE	NL	RO	FR	SK	PL	CZ	AT	BG	DE	<b>HR</b>		
INDESIT	TA 5	A	R.A.	FR	IT	ES	HU	RO	NL	SK	<b>MT</b>						
INDESIT	SAN 400	A	Pass	FR	GB	ES	NL	PL	AT	PT	BE						
INDESIT	TZA 1	A	R.A.	GB	ES	IT	AT	PL	CZ	SK	PT	NL	BE	<b>MT</b>			
BEKO	CSA 24002	A	Pass	BE	PL	NL	LT	<b>HR</b>									
BEKO	TLDA 521	A	Pass	GB	IE	<b>HR</b>											
BEKO	FSA 21300	A	Pass	BE	PL	IT	CZ	SK	NL	FR	SI	HU	BG	<b>HR</b>			

Note: R.A. = remedy action taken by the supplier; 3 n.a. = 3 additional models not available for Step 2 formal = some formal aspects of the labelling declarations were non complying

<sup>2</sup> Source: GfK market survey in February 2010 and other external information for Malta and Croatia (MT and HR, in bold)

Table 1: Refrigerators and freezers models selected for the verification compliance tests (continued)

Brand	Model	EE class	Pass/ Fail	Country of sale													
				GB	NL	BG	AT	PL	BE	HU	CZ	EE	LT	SK	LV	HR	
LIEBHERR	CUN 3033	A	Pass	GB	NL	BG	AT	PL	BE	HU	CZ	EE	LT	SK	LV	HR	
LIEBHERR	IK 1700	A +	Pass	DE	AT	NL											
LIEBHERR	IG 1166	A ++	Pass	DE	AT	BE	NL										
SAMSUNG	RL41PTIH	A +	Fail	FR	NL	BG	BE	RO	CZ	HU	SI						
SAMSUNG	RT 37 GB	A	R.A.	FR													
SAMSUNG	RZ80EEIS	A +	3 n.a.	NL	ES	FR	HU	BG	BE	PL	SK	CZ					
LG	GC-F 399 BTQA	A	Pass	NL	BE	HU	BG										
LG	GR-B652YUSW	A +	Pass	IT	MT												
LG	GW L 207 FLQA	A	R.A.	NL	BE	GR	CZ	SK									
CANDY	CFM 2350 A	A	R.A.	DK	PL	FI	HU	GR	SI	SE	BE	LT	CZ	NL			
CANDY	CFD 2750 A	A	Fail	FR	ES	PT	BE	BG	GR	IT							
CANDY	CFU190A	B	Fail	GB													
FAGOR	FC 37 LA	A	R.A.	FR	DE	CZ											
FAGOR	2FS 15 LA	A	Fail	FR													
FAGOR	ZA1726	A +	R.A.	FR													
EXQUISIT	KGC 270/45 A+	A +	Fail	DE													
EXQUISIT	EKS 171 RV	A	Fail	DE	NL												
EXQUISIT	GS 11 A+.	A +	Fail	DE	NL	AT	IT										
ATAG	KS 3178 B	A	R.A.	NL													
GORENJE	RF 6275 OAL/OR/OB/OG/OC	A	3 n.a.	DE	SI	AT	PT										
GORENJE	F 60308 DW	A +	Pass	AT	DE	CZ	DK	HU	SK	PL							

Note: R.A. = remedy action taken by the supplier; 3 n.a. = 3 additional models not available for Step 2 formal = some formal aspects of the labelling declarations were non complying

Table 1: Refrigerators and freezers models selected for the verification compliance tests (continued)

Brand	Model	EE class	Pass/ Fail	Country of sale													
				DE	ES	FI	DK	GR	IT	DE							
MIELE	KD 12312 S	A +	Pass	DE													
MIELE	K 12820 SD ED	A +	Pass	SE	ES	FI	DK	GR	IT	DE							
MIELE	F 12016 S	A +	Pass	DE	AT	NL	BE	FR									
DAEWOO	ERF-387 MH	A	Fail	ES													
DAEWOO	ERF-362 MA	A	Fail	ES													
AMICA	AKE 320	A +	R.A.	PL													
AMICA	FK 212.3 / FK212BPW+05AW	A +	R.A.	PL													
BOMANN	KG 317 SILBER/WEISS	A ++	3 n.a.	DE													
BOMANN	VSE 228	A +	Fail	DE													
FRIGIDAIRE	FRC150FFS	A	Fail	GB													
FRIGIDAIRE	R5303A	A	R.A.	GB													
PKM	KS 160.0 A	A	3 n.a.	DE													
PKM	KG 200.4A	A	3 n.a.	DE	AT												
FRIDGEMASTER	MTRF190A	A	R.A.	GB													
FRIDGEMASTER	MTRZ36TTA	A	Fail	GB													
HAIER	AFL 631 CW	A +	Pass	DE	FR	ES	BE										
HAIER	AFL 631 CC/CO/CR	A +	Pass	DE	FR	IT	ES	RO	BE								
LEC	TF 5586	A	Fail	GB	IE												
LEC	U 5026	A	3 n.a.	GB													
UPO	F1311	A	R.A.	SE	FI												
NEW POL	NEV-1342	A	3 n.a.	ES													
NORFROST	C2AEW	A	Fail	GB	IE												
NORFROST	C4CFW	C	3 n.a.	GB													

Note: R.A. = remedy action taken by the supplier; 3 n.a. = 3 additional models not available for Step 2 formal = some formal aspects of the labelling declarations were non complying

Table 1: Refrigerators and freezers models selected for the verification compliance tests (continued)

Brand	Model	EE class	Pass/ Fail	Country of sale													
				FR													
FRIGELUX, LA SOMMELIERE	TOP 132 IX	A	R.A.	FR													
CURTISS	CC 4005	C	Pass	FR													
SMEG	FD 240 AP	A	R.A, formal	IT													
CALIFORNIA	DF1-14	A	Fail	FR													
GRAM	KF 19455	A	R.A, formal	DK	FI												
FRIGISTAR	Lindbergh LB 48	A	Pass	FR	BE												
SEVERIN	KS 9804	A	3 n.a.	DE	AT	NL	IT	FI	ES	BE	FR	PL	SE				
JOCEL	JA 93 320L	A	3 n.a.	PT													
BAUMATIC	BR27	B	Fail	GB													
SCHAUB LORENZ	TR 50	A	Fail	PT	EE	FI											
CYLINDA	KF2185	A	3 n.a.	SE													
SHARP	SJ-F 79 PS-SL	A +	Pass	IT	ES	GR	FR	PL	SI	MT							
VESTFROST	SW247C	A +	Pass	DK	MT												
HISENSE	RD-28DR4SA	A	Fail, formal	ES	IT												
COLDIS	TT 112A	A	Fail, formal	FR													
TEKA	NF-336 X	A	R.A.	ES													
WALTHAM	WR 2312	B	Pass	FR													
NORFROST	C4CBW	C	Fail	GB													
LEC	L 5026W	A	Fail	GB													

Note: R.A. = remedy action taken by the supplier; 3 n.a. = 3 additional models not available for Step 2  
 formal = some formal aspects of the labelling declarations were non complying



Table 2: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Austria

Parameters	PASS	FAIL
Energy class	83%	17%
Energy consumption	83%	17%
Storage temperature	92%	8%
Storage volume	83%	17%
Temperature rise time	100%	0%
Freezing capacity	90%	10%
<b>TOTAL</b>	<b>67%</b>	<b>33%</b>
15 models selected for the compliance verification. For 3 models having failed Step 1 three additional units were not available.		

Table 3: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Belgium

Parameters	PASS	FAIL
Energy class	89%	11%
Energy consumption	89%	11%
Storage temperature	100%	0%
Storage volume	78%	22%
Temperature rise time	93%	7%
Freezing capacity	87%	13%
<b>TOTAL</b>	<b>67%</b>	<b>33%</b>
20 models selected for the compliance verification. For 2 models, having failed Step 1 three additional units were not available.		

Table 4: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Bulgaria

Parameters	PASS	FAIL
Energy class	86%	14%
Energy consumption	86%	14%
Storage temperature	86%	14%
Storage volume	57%	43%
Temperature rise time	100%	0%
Freezing capacity	29%	71%
<b>TOTAL</b>	<b>43%</b>	<b>57%</b>
8 models selected for the compliance verification. For 1 model having failed Step 1 three additional units were not available.		

Table 5: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in the Czech Republic

Parameters	PASS	FAIL
Energy class	67%	33%
Energy consumption	67%	33%
Storage temperature	89%	11%
Storage volume	56%	44%
Temperature rise time	89%	11%
Freezing capacity	67%	33%
<b>TOTAL</b>	<b>33%</b>	<b>67%</b>
11 models selected for the compliance verification. For 1 model having failed Step 1 three additional units were not available.		

Table 6: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Germany

Parameters	PASS	FAIL
Energy class	75%	25%
Energy consumption	75%	25%
Storage temperature	94%	6%
Storage volume	81%	19%
Temperature rise time	92%	8%
Freezing capacity	77%	23%
<b>TOTAL</b>	<b>63%</b>	<b>38%</b>
21 models selected for the compliance verification. For 5 models, having failed Step 1 three additional units were not available.		

Table 7: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Denmark

Parameters	PASS	FAIL
Energy class	100%	0%
Energy consumption	100%	0%
Storage temperature	100%	0%
Storage volume	100%	0%
Temperature rise time	75%	25%
Freezing capacity	100%	0%
<b>TOTAL</b>	<b>60%*</b>	<b>40%</b>
5 models selected for the compliance verification.		

\*for one model a formal non-compliance was detected, therefore although all parameters resulted compliant the model is not.

Table 8: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Estonia

Parameters	PASS	FAIL
Energy class	100%	0%
Energy consumption	100%	0%
Storage temperature	67%	33%
Storage volume	33%	67%
Temperature rise time	100%	0%
Freezing capacity	100%	0%
<b>TOTAL</b>	<b>33%</b>	<b>67%</b>
3 models selected for the compliance verification.		

Table 9: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Spain

Parameters	PASS	FAIL
Energy class	80%	20%
Energy consumption	80%	20%
Storage temperature	87%	13%
Storage volume	67%	33%
Temperature rise time	92%	8%
Freezing capacity	75%	25%
<b>TOTAL</b>	<b>53%*</b>	<b>47%</b>
18 models selected for the compliance verification. For 3 models, having failed Step 1 three additional units were not available.		

\*for one model a formal non-compliance was detected, therefore although all parameters resulted compliant the model is not.

Table 10: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Finland

Parameters	PASS	FAIL
Energy class	100%	0%
Energy consumption	100%	0%
Storage temperature	100%	0%
Storage volume	83%	17%
Temperature rise time	75%	25%
Freezing capacity	75%	25%
<b>TOTAL</b>	<b>33%*</b>	<b>67%</b>
7 models selected for the compliance verification. For 1 model having failed Step 1 three additional units were not available.		

\*for one model a formal non-compliance was detected, therefore although all parameters resulted compliant the model is not.

Table 11: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in France

Parameters	PASS	FAIL
Energy class	86%	14%
Energy consumption	86%	14%
Storage temperature	95%	5%
Storage volume	71%	29%
Temperature rise time	82%	18%
Freezing capacity	76%	24%
<b>TOTAL</b>	<b>48%</b>	<b>52%</b>
24 models selected for the compliance verification. For 3 models, having failed Step 1 three additional units were not available		

Table 12: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Greece

Parameters	PASS	FAIL
Energy class	100%	0%
Energy consumption	100%	0%
Storage temperature	100%	0%
Storage volume	67%	33%
Temperature rise time	80%	20%
Freezing capacity	100%	0%
<b>TOTAL</b>	<b>50%</b>	<b>50%</b>
6 models selected for the compliance verification.		

Table 13: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Hungary

Parameters	PASS	FAIL
Energy class	88%	13%
Energy consumption	88%	13%
Storage temperature	88%	13%
Storage volume	75%	25%
Temperature rise time	88%	13%
Freezing capacity	75%	25%
<b>TOTAL</b>	<b>50%</b>	<b>50%</b>
9 models selected for the compliance verification. For 1 model having failed Step 1 three additional units were not available.		

Table 14: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Ireland

Parameters	PASS	FAIL
Energy class	33%	67%
Energy consumption	33%	67%
Storage temperature	67%	33%
Storage volume	100%	0%
Temperature rise time	50%	50%
Freezing capacity	50%	50%
<b>TOTAL</b>	<b>33%</b>	<b>67%</b>
3 models selected for the compliance verification.		

Table 15: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Italy

Parameters	PASS	FAIL
Energy class	87%	13%
Energy consumption	87%	13%
Storage temperature	100%	0%
Storage volume	87%	13%
Temperature rise time	100%	0%
Freezing capacity	86%	14%
<b>TOTAL</b>	<b>53%</b>	<b>47%</b>
16 models selected for the compliance verification. For 1 model having failed Step 1 three additional units were not available.		

Table 16: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Lithuania

Parameters	PASS	FAIL
Energy class	100%	0%
Energy consumption	100%	0%
Storage temperature	75%	25%
Storage volume	75%	25%
Temperature rise time	75%	25%
Freezing capacity	100%	0%
<b>TOTAL</b>	<b>50%</b>	<b>50%</b>
4 models selected for the compliance verification.		

Table 17: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Latvia

Parameters	PASS	FAIL
Energy class	100%	0%
Energy consumption	100%	0%
Storage temperature	50%	50%
Storage volume	50%	50%
Temperature rise time	100%	0%
Freezing capacity	100%	0%
<b>TOTAL</b>	<b>50%</b>	<b>50%</b>
2 models selected for the compliance verification.		

Table 18: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Malta

Parameters	PASS	FAIL
Energy class	86%	14%
Energy consumption	86%	14%
Storage temperature	100%	0%
Storage volume	86%	14%
Temperature rise time	100%	0%
Freezing capacity	86%	14%
<b>TOTAL</b>	<b>71%</b>	<b>29%</b>
7 of the models selected for the compliance verification were sold also in Malta.		

Table 19: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in The Netherlands

Parameters	PASS	FAIL
Energy class	80%	20%
Energy consumption	80%	20%
Storage temperature	95%	5%
Storage volume	80%	20%
Temperature rise time	88%	13%
Freezing capacity	75%	25%
<b>TOTAL</b>	<b>50%</b>	<b>50%</b>
22 models selected for the compliance verification. For 2 models, having failed Step 1 three additional units were not available.		

Table 20: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Poland

Parameters	PASS	FAIL
Energy class	92%	8%
Energy consumption	92%	8%
Storage temperature	92%	8%
Storage volume	85%	15%
Temperature rise time	92%	8%
Freezing capacity	75%	25%
<b>TOTAL</b>	<b>54%</b>	<b>46%</b>
15 models selected for the compliance verification. For 2 models, having failed Step 1 three additional units were not available.		

Table 21: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Portugal

Parameters	PASS	FAIL
Energy class	83%	17%
Energy consumption	83%	17%
Storage temperature	100%	0%
Storage volume	50%	50%
Temperature rise time	100%	0%
Freezing capacity	100%	0%
<b>TOTAL</b>	<b>50%</b>	<b>50%</b>
8 models selected for the compliance verification. For 1 model having failed Step 1 three additional units were not available.		

Table 22: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Romania

Parameters	PASS	FAIL
Energy class	75%	25%
Energy consumption	75%	25%
Storage temperature	100%	0%
Storage volume	75%	25%
Temperature rise time	100%	0%
Freezing capacity	25%	75%
<b>TOTAL</b>	<b>25%</b>	<b>75%</b>
4 models selected for the compliance verification.		

Table 23: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Sweden

Parameters	PASS	FAIL
Energy class	100%	0%
Energy consumption	100%	0%
Storage temperature	100%	0%
Storage volume	100%	0%
Temperature rise time	50%	50%
Freezing capacity	50%	50%
<b>TOTAL</b>	<b>33%</b>	<b>67%</b>
5 models selected for the compliance verification. For 2 models, having failed Step 1 three additional units were not available.		

Table 24: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Slovenia

Parameters	PASS	FAIL
Energy class	80%	20%
Energy consumption	80%	20%
Storage temperature	80%	20%
Storage volume	60%	40%
Temperature rise time	80%	20%
Freezing capacity	80%	20%
<b>TOTAL</b>	<b>40%</b>	<b>60%</b>
5 models selected for the compliance verification. For 1 model having failed Step 1 three additional units were not available.		

Table 25: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Slovakia

Parameters	PASS	FAIL
Energy class	86%	14%
Energy consumption	86%	14%
Storage temperature	100%	0%
Storage volume	71%	29%
Temperature rise time	100%	0%
Freezing capacity	71%	29%
<b>TOTAL</b>	<b>43%</b>	<b>57%</b>
8 models selected for the compliance verification. For 1 model having failed Step 1 three additional units were not available.		



Table 26: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in United Kingdom

Parameters	PASS	FAIL
Energy class	56%	44%
Energy consumption	50%	50%
Storage temperature	75%	25%
Storage volume	63%	38%
Temperature rise time	82%	18%
Freezing capacity	45%	55%
<b>TOTAL</b>	<b>25%</b>	<b>75%</b>
18 models selected for the compliance verification. For 2 models, having failed Step 1 three additional units were not available.		

Table 27: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in Croatia

Parameters	PASS	FAIL
Energy class	88%	13%
Energy consumption	88%	13%
Storage temperature	88%	13%
Storage volume	88%	13%
Temperature rise time	100%	0%
Freezing capacity	86%	14%
<b>TOTAL</b>	<b>63%</b>	<b>38%</b>
9 of the models selected for the compliance verification were sold also in Croatia. For 1 model having failed Step 1 three additional units were not available.		

### 3. SUMMARY OF THE ACHIEVED RESULTS

The final outcome of the tested at EU level is presented in Table 28. Although energy consumption and the energy-related parameters show a compliance rate around 80%, the combination of the non-compliances resulted in a pass rate of 43% and failing rate of 57%.

Table 28: Summary of the results of the compliance verification of refrigerating appliances to the energy labelling directive (2033/66/EC) in the EU

<b>Parameters</b>	<b>PASS</b>	<b>FAIL</b>
Energy class	79%	21%
Energy consumption	77%	23%
Storage temperature	90%	10%
Storage volume	73%	27%
Temperature rise time	84%	16%
Freezing capacity	70%	30%
<b>TOTAL</b>	<b>43%</b>	<b>57%</b>
82 models selected for the compliance verification. For 12 model having failed Step 1 three additional units were not available.		



## REFERENCES

ATLETE (Appliance Testing for Energy Label Evaluation) project, Grant agreement no. IEE/08/728/SI2.528428, [www.atlete.eu](http://www.atlete.eu).