

Code of product in Lab :	F-144 –(EFF)	--	 
LAB DATA		بيانات المختبر	
Laboratory name	اسم المختبر	Saudi Inspection & Testing Co.(SAITCO)	
Address	العنوان	1st Industrial Area, St. No.4,5,6,7-Riyadh	
Country	الدولة	Saudi Arabia	
Client Data		بيانات العميل	
Sample Date in	تاريخ استلام العينة	15/ 05 / 2023	
Date or period of tests	تاريخ / فترة الاختبار	24/ 05 / 2023	29/ 05 / 2023
Date of report issue	تاريخ اصدار التقرير	30 / 11 / 2023	
Laboratory test report number	رقم التقرير بالمختبر	E-230572	
Client Name	اسم العميل	Awad adi Nahas Trading Co.	
Client Address	عنوان العميل	Administration Building – 3rd Floor Jeddah 21463 P.O. Box 11529 Kingdom of Saudi Arabia	
Client Reference No. / Date	مرجع العميل	15/ 05 / 2023	
No of received Samples	عدد العينات المستلمة	1	
Sample Data		بيانات العينة	
Product description	وصف المنتج	REFRIGERATOR	
Brand name or trademark	العلامة التجارية	LIEBHERR	
Type or reference	النوع / المرجع	EKB 9671	
Country of Origin	بلد الصنع	Austria	
Manufacture / factory Name	اسم المصنع	Liebherr-Hausgeräte Lienz GmbH	
Manufacture / factory Address	عنوان المصنع	Dr.-Hans-Liebherr-Straße 1 9900 Lienz/ Austria	
Products Category	تصنيف المنتج	Refrigerators, Refrigerator- Freezers and Freezers –Energy Performance, Testing and Labeling Requirements	
Standard / TR No.	رقم المواصفة / اللائحة	SASO 2892:2018	-
Test case verdicts		حالات الحكم على نتيجة الاختبار	
Conformity to articles tested		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Test case does not apply to the test object		Not Applicable	N/A
Test item does meet the requirement		Pass	P
Test item does not meet the requirement		Fail	F



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4	PRODUCT CATEGORIES		
	Refrigerating appliances are classified into categories as listed in Table 1.	Applied Category 1	-
	Table 1 – Category Designation		
	1	Refrigerator with one or more fresh-food storage compartments	P
	2	Refrigerator-cellar, Cellar and Specific beverage storage appliances	N
	3	Refrigerator-chiller and Refrigerator with a 0-star compartment	N
	4	Refrigerator with a one-star compartment	N
	5	Refrigerator with a two-star compartment	N
	6	Refrigerator with a three-star compartment	N
	7	Refrigerator-freezer	N
	8	Upright freezer	N
	9	Chest freezer	N
	10	Multi-use and other refrigerating appliances	N
	Refrigerating appliances that cannot be classified in categories 1 to 9 because of compartment temperature are classified in category 10	Category 1	-
	Refrigerating appliances are also classified into one or more climate classes as shown in Table 2.	-	-
	Table 2 – Climate classes		
	Class	Symbol	Ambient average temperature (°C)
	Extended temperate	SN	+10 to +32
	Temperate	N	+16 to +32
	Subtropical	ST	+16 to +38
	Tropical	T	+16 to +43
	Each category is defined by the specific compartment composition as specified in Table 3	-	P
	Nominal temperatures expressed in table 3 apply for determination of the EEI.	Applied	-
	The refrigerating appliance shall be capable of maintaining the required storage temperatures in the different compartments simultaneously	Capable	P
	Multi-use appliances and/or compartments shall be capable of maintaining the required storage temperatures	-	N

5	CRITERIA FOR APPLYING THE MINIMUM ENERGY PERFORMANCE STANDARD (MEPS)		
5.1	Declaration of rated values	-	P
	Rated capacity shall be expressed only in terms of liters(L)	Expressed in L	P
	Rated power (W)	248.5W	P
	Energy Efficiency (%)	-	N
	Annual Energy (kWh)	-	N
5.2	Determining the Minimum Energy Performance	-	P
5.2.1	Minimum energy performance are based on the Energy Efficiency Index (EEI)	Applied	-
	Details for calculation of the EEI are given in annex B.	-	
5.2.2	Minimum Energy Performance Standard for Refrigerating Appliances		
	Refrigerating appliances with a storage volume equal to or higher than 10 liters shall comply with the energy efficiency index limits in Table 5.	-	P

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Table 5 – Minimum Energy Efficiency Index (EEI)			Measured	-
			EEI = 38.5	
Starting 6 months after announcement in the Official Gazette (Um Al-Qura)		EEI < 70		
Starting January 1 st , 2020		EEI < 45		

5.3	Acceptance criteria for labelling and market surveillance			
	The energy label shall be accepted as valid when a sample unit(s) tested meets the criteria specified in table 6		-	-
Table 6 – Acceptance criteria				
Measured parameter	Verification tolerances	Limit	Measured Value	-
Gross (total) volume	Measured shall not < 3% or 1L of Rated value (534L)	517.98	524.50L	P
Storage volume	Measured shall not < 3% or 1L of Rated value (534)	517.98	524.50L	P
Frozen-food storage volume (3***)	Measured shall not < 10% of rated value ()	-	-	N
Energy consumption	(E _{24h}) Measured shall not >10% Of rate d value (1.096)	-	0.413	-
Power consumption (below 10 Liters)	Measured value shall ≤ 0.10W	-	-	N
Specific beverage appliances	RH x 1.10	-	-	N

6	Label and classification		
6.1	Determining the energy efficiency class	Measured Class D	P
	energy efficiency class for each product shall be determined as outlined in Table 7	EEI = 38.5	P
6.2	Design and placement of the label		
	The label shall be printed as illustrated in Figure 1. For all types of products within the scope of this standard, the label shall be visible and fixed on the most prominent part the of the product. Also, another label shall be fixed and non-removable on the product packaging.”	Provided	P
	energy efficiency classes shall each be represented as follows: with a fixed number of color-coded bars as outlined in Table 7 and Illustrated in Figure 1	--	P
	The label must be 100 mm wide and 170 mm high	Complied	P
	The label shall be on the most prominent part of the product packaging to be easily visible to the consumer	-	P

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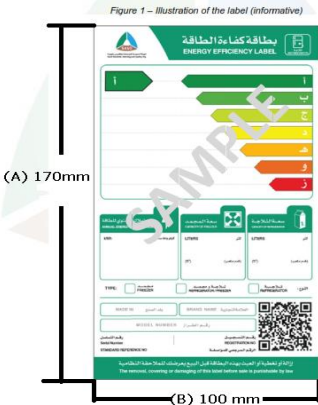
Table 7 – MINIMUM VALUE OF THE ENERGY EFFICIENCY INDEX			
Bar colour	Energy class		EEI
Dark green	أ	A	EEI < 20
Green	ب	B	20 ≤ EEI < 28
Light green	ج	C	28 ≤ EEI < 35
Yellow	د	D	35 ≤ EEI < 45
Orange	هـ	E	45 ≤ EEI < 55
Red	و	F	55 ≤ EEI < 70
Dark Red	ز	G	EEI ≥ 70

	Energy Class	Measured EEI	
	D	38.5	
6.3	Information and values contained on the label		
	The fields (a), (b), (c), (d), (e), (f), (g) and (h) shall comply with the following requirements:	-	N
	a) SASO Logo	-	N
	b) QR code	-	N
	c) Energy efficiency classes	-	N
	d) Storage volume (l)	-	N
	e) Frozen Storage Volume (l)	-	N
	f) Annual Energy consumption	-	N
	g) Category of Product	-	N
	h) General product description (Brand name, Country of Origin, model number)	-	N
7	Marking and instructions		
7.1	General information		
	Information shall be marked on the nameplate of the refrigerator, refrigerator- freezer or freezer in (English) or (Arabic and English)	Marked on the nameplate / English	P
	The marking shall not be on a detachable part of the unit and shall be indelible, durable and easily legible.	Not on a detachable part	P
7.2	Nameplate information	-	P
	The nameplate information shall include, for conformity to this standard the following information:	-	P
	•Manufacturer name	LIEBHERR	P
	•Model number	EKB 9671	P
	•Country of origin	Austria	P
	•Product category	1	P
	•Rated power (W)	248.5W	P
	•Rated volume for food storage (L)	534	P
	•Rated volume for frozen food storage (L)	-	N
	•Climate class: SN, N, ST or T	SN-T	P
	•Rated voltage (V)	220-240 V~	P
	•Classification (unit-less)	-	N
	•Annual energy consumption (AEC) (kWh)	150.7 kWh/year	P
7.3	Instruction sheet	Instruction manual was provided	P
	An instruction sheet or manual in (Arabic) or (Arabic and English) shall be delivered with each Refrigerator, refrigerator- freezer or freezer.	Provided in Arabic/ English	P
	Tables, drawings and circuit diagrams may be depicted in English only	Provided	P

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	The instruction sheet or manual shall include the following information as a minimum:	-	P
	a.Supplier's name or trade mark	LIEBHERR	P
	b.Supplier's model identifier	EKB 9671	P
	c.Category of the refrigerating appliance Category of the refrigerating appliance model in accordance with table 1 and climate classes in accordance with table 2.	1	P
	d.Energy efficiency class of the model in accordance with table 7	D	P
	e.Annual energy consumption (AE _C) (kWh)	150.7 kWh/year	P
	f.Storage volume of each compartment and applicable star categories in accordance with Table 3, if any.	marked	P
	g.The design temperature of 'other compartments' within the meaning of Annex B For special beverage storage compartments	-	N
	h.The mention 'frost-free' for the relevant compartment(s)	-	N
	i.Power cut safe "X" h' defined as 'temperature rise time'	-	N
	j.Freezing capacity' in kg/24 h	-	N
	k.Climate class' in accordance with Clause 4 Table 2	SN,T	P
	^l If the model is intended to be a built-in appliance, an indication to this effect	-	P

Design and Dimension of Energy Efficiency Label

	Figure 1 – Illustration of the label (informative)	Point to measure	Required value (mm)	Measured (mm)	verdict
					
		A	170	-	-
		B	100	-	-

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ANNEX B	Calculation of the Energy Efficiency Index (EEI)					
B.1	The Annual Energy Consumption of refrigerating appliance is compared to its Standard Annual Energy Consumption.					
$EEI = 100 \times AE_C / SAE_C$		AE _C	SAE _C			
		150.70	391.56		-	
		EEI = 38.5		P		
	AE _C = Annual Energy Consumption of the refrigerating appliance		-		P	
	SAE _C = Standard Annual Energy Consumption of the refrigerating appliance		-		P	
B.2	Determination of the Annual Energy Consumption AEC					
	Annual Energy Consumption (AEC) is calculated in kWh/year					
$AE_C = 365 \times E_{24h}$		365	E _{24h} = 0.413 kwh/24h		-	
		AE _C = 150.70		-		
	E _{24h} = energy consumption of the refrigerating appliance in kWh/24h		0.413 kwh/24h		-	
B.3	Determination of the Standard Annual Energy Consumption (SAE _C)				P	
	Standard Annual Energy Consumption (SAEc) (kWh/year)					
$SAE_C = V_{eq} \times M + N + CH$		V _{eq}	M	N	CH	
		629	0.233	245	0	P
		SAE _C = 391.56				-
	V _{eq} = equivalent volume of the refrigerating appliance		-		P	
	CH= 50 kWh/year for refrigerating appliances with a chill compartment with a storage; otherwise, CH is equal to 0 kWh/y22ear		-		N	
	M and N values are given in Table B3 for each refrigerating appliance category.		0.233/ 245		-	
B.4	Calculation of the Volume equivalent used for the calculation of the Standard Annual Energy Consumption SAE _C					
$V_{eq} = \left[\sum_{c=1}^{c=n} V_c \times \frac{(25 - T_c)}{20} \times FF_c \right] \times CC \times BI$		N =2	Total Vc	Vc	$\frac{(25-T_c)}{20}$	FFc
		Freezer	-	-	2.15	1.2
		Fresh Food	524.50	524.50	1	1
Total Vc		CC	BI	Veq = 629		
524.50		1.2	1			
	n= number of compartments		-		-	
	Vc = storage volume of the compartment(s)		-		-	
	Tc = nominal temperature of the compartment(s) (Table 3)		-		-	
	25-Tc/ 20 = thermodynamic factor (Table B1)		-		-	
	FFc, CC, BI = volume correction factors (Table B2)		-		-	

Remarks :
a.

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Photo No. 1 (Marking)

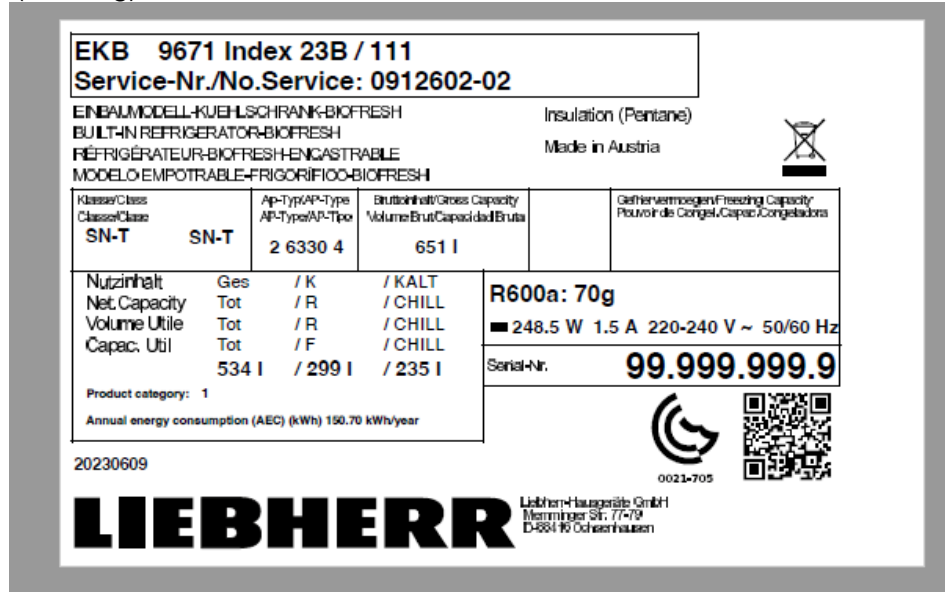

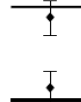
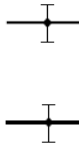
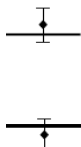

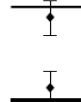
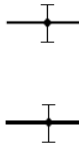
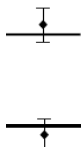


Photo No.2 (General view and Package)



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Conformity Decision is usually included in the report, unless the agreement states otherwise by the client.

Results Notes: The acceptance criterion is based on :		A-The relevant TR Requirements <input type="checkbox"/>	B-The relevant standard specifications <input type="checkbox"/>	
		C- Manufacturer's manual (product technical data sheet) <input type="checkbox"/>	D- Customer requirements <input type="checkbox"/>	
Acceptance Rule is based on:		Special Case	Rejection Rule (Failing) is based on:	
A- The measured value (+) measurement uncertainty value is less than the maximum required to criteria of acceptance. B- The measured value (-) measurement uncertainty value is greater than the minimum required to criteria of acceptance.		May be accept if: Measured result \leq the upper limit Measured result \geq lower limit May be rejected if : measured value < the upper limit measured result > lower limit	Reject when a confidence level of less than 95% is acceptable	
				
				
♦ = measurement result with agreed method			I = uncertainty interval of agreed method	

☒ The sample passed all the above-mentioned tests in accordance with the requirements of the product

☐ The sample passed all the tests mentioned above in accordance with the requirements for the product, except for the test where the measured value does not meet the requirements of the product mentioned in the attached standard specifications.

The result is for the sample referred to in the report, which has been tested only and is only representative of itself.


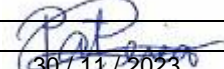

Accreditation statuses :

All tests are accredit : ☐

All tests are accredit except:

REMARK :

SOFT COPY OF THE CONTROL TEST RESULT SHEET IS AUDITED BY THE LAB SUPERVISOR

	Inspected by	Lab supervisor/ Reviewer	Technical Manager
Name			
Sign			
Date	30 / 11 / 2023	30 / 11 / 2023	30 / 11 / 2023

"End of Report"

