

PRODUCT INFORMATION SHEET

<b>Supplier's name or trade mark (b),(d):</b>		BEKO			
<b>Supplier's address (b),(d):</b>		Arctic S.A Gaesti, Dambovita, 13 Decembrie Street, No 210, Romania			
<b>Model identifier (d) :</b>		BDSA250K4SN LH 7521620018			
<b>Type of refrigerating appliance:</b>		Refrigerator - Freezer			
<b>Low-noise appliance:</b>	NO	<b>Design type:</b>		Built In	
<b>Wine storage appliance:</b>	NO	<b>Other refrigerating appliance:</b>		YES	
<b>General product parameters:</b>					
<b>Parameter</b>		<b>Value</b>	<b>Parameter</b>		<b>Value</b>
<b>Overall dimensions (millimeter)</b>	<b>Height</b>	1448	<b>Total Volume (dm<sup>3</sup> or l)</b>		220
	<b>Width</b>	540	<b>Energy efficiency class</b>		E
	<b>Depth</b>	545	<b>Airborne acoustical noise emission class</b>		C
<b>EEl</b>		100	<b>Climate class:</b>		Extended temperate /Subtropical
<b>Airborne acoustical noise emission (db(A) ref 1 pW)</b>		37			
<b>Annual energy consumption (kWh/a)</b>		186			
<b>Minimum ambient temperature (°C), for which the refrigerating appliance is suitable</b>		10	<b>Maximum ambient temperature (°C), for which the refrigerating appliance is suitable</b>		38
<b>Winter setting</b>		NO			
<b>Compartment Parameters:</b>					
<b>Compartment type</b>		<b>Compartment parameters and values</b>			
		<b>Compartment Volume (dm<sup>3</sup> or l)</b>	<b>Recommended temperature setting for optimised food storage (°C) These settings shall not contradict the storage conditions set out in Annex IV, Table 3</b>	<b>Freezing capacity (kg/24h)</b>	<b>Defrosting type (auto-defrost=A, manual defrost=M)</b>
<b>Pantry</b>	NO	-	-	-	-
<b>Wine storage</b>	NO	-	-	-	-
<b>Cellar</b>	NO	-	-	-	-
<b>Fresh Food</b>	YES	176,0	4	-	A
<b>Chill</b>	NO	-	-	-	-
<b>0-star or ice-making</b>	NO	-	-	-	-
<b>1-star</b>	NO	-	-	-	-
<b>2-star</b>	NO	-	-	-	-
<b>3-star</b>	NO	-	-	-	-
<b>4-star</b>	YES	44,0	-18	2,1	M
<b>2-start section</b>	NO	-	-	-	-
<b>Variable temperature compartment</b>	NO	-	-	-	-
<b>For 4-star compartments</b>					
<b>Fast freeze facility</b>		NO			
<b>For wine storage appliances:</b>					
<b>Number of standard wine bottles</b>		-			
<b>Light source parameters (a) (b):</b>					
<b>Type of light source</b>		LED			
<b>Energy efficiency class</b>		G			
<b>Minimum duration of the guarantee offered by the manufacturer (b),(d) :</b>		24 Months			
<b>Additional information (b),(d):</b>					
Weblink to the manufacturer's website, where the information in point 4(a) Annex of Commission Regulation (EU) 2019/2019 (1) (b) is found:					
<a href="http://support.beko.com">http://support.beko.com</a>					

(a) as determined In accordance with Commission Delegated Regulation (EU) 2019/2015 (2) , (b) changes to this item shall not be considered relevant for the purposes of point 4 of Article 4 of Regulation (EU) 2017/1369. ( d) this item shall not be considered relevant for the purpose of Article 2(6) of Regulation (EU) 2017/1369.

## TECHNICAL DOCUMENTATION

A general description of the refrigerating model, sufficient for it to be unequivocally and easily identified:

Brand name BEKO

Model identifier (d) : BDSA250K4SN LH 7521620018

Product specifications:

General product specifications:

Parameter	Value	Parameter	Value
Annual energy consumption (kWh/a)	185,97	EEL (%)	99,9
Standard annual energy consumption (kWh/a)	186,13	Combi parameter	1,47
Temperature rise time (h)	13,00	Load factor	1,0
Door heat loss factor	1,000	Climate class:	Extended temperate/ Subtropical
Anti-condensation heater type	None	Airborne acoustical noise emissions (dB(A) ref 1 pW)	37

Additional product specifications for refrigerating appliances, except for low noise refrigerating appliances:

Parameter	Value
Daily energy consumption at 32 °C (kWh/24h)	0,750

Additional product specifications for low noise refrigerating appliances:

Parameter	Value
Daily energy consumption at 25 °C (kWh/24h)	-

Additional product specifications for wine storage appliances:

Parameter	Value	Parameter	Value
Internal humidity (%)	-	Number of bottles	-

Compartment specifications:

Compartment type	Compartment parameters and values							
	Target temperature (°C)	Compartment Volume (dm <sup>3</sup> or l)	Freezing capacity (kg/ 24h)	Thermodynamic parameter (rc)	Nc	Mc	Defrost factor (Ac)	Built-in Factor (Bc)
Pantry	-	-	-	-	-	-	-	-
Wine storage	-	-	-	-	-	-	-	-
Cellar	-	-	-	-	-	-	-	-
Fresh Food	4	176,0	-	1,00	75	0,12	1,00	1,00
Chill	-	-	-	-	-	-	-	-
0-star or ice-making	-	-	-	-	-	-	-	-
1-star	-	-	-	-	-	-	-	-
2-star	-	-	-	-	-	-	-	-
3-star	-	-	-	-	-	-	-	-
4-star	-18	44,0	-	2,1	138	0,15	1,00	1,00
2-star section	-	-	-	-	-	-	-	-
Variable temperature compartment	-	-	-	-	-	-	-	-
The sum of the volumes of the chill compartment(s) and the unfrozen compartment(s) [l or dm <sup>3</sup> ]		176,0						
The sum of the volumes of the frozen compartment(s) [l or dm <sup>3</sup> ]		44,0						

Additional information (b),(d) :

## Calculations

### Annual energy consumption (kWh/a), T average (°C) :

$$E_{\text{daily}} = P \times 24 + \frac{\Delta E_{\text{df}} \times 24}{\Delta t_{\text{df}}} \quad (2)$$

Where

$E_{\text{daily}}$  is the energy in Wh over a period of 24h

24 is h/d

P is the **steady state** power in watt for the **selected temperature control setting** as per Annex B.

$DE_{\text{df}}$  is the representative incremental energy for **defrost and recovery** in Wh in accordance with Annex C (See C.5).

$Dt_{\text{df}}$  is the estimated **defrost interval** in hours in accordance with Annex D.

Where there are additional defrost system (each with its own **defrost control** cycle), the value of term based on  $DE_{\text{df}}$  and  $Dt_{\text{df}}$  is also added in Formula (2) for each additional defrost system

$$T_{\text{average}} = T_{\text{SS}} + \frac{\Delta T h_{\text{df}}}{\Delta t_{\text{df}}} \quad (3)$$

NOTE: EN 60552-3:2020, 6.8.2 clause, Equation 2-3,

### Annual Energy, Daily energy consumption at 16 °C/ 32 °C (kWh/24h)

$$AE = 365 \times E_{\text{daily}}/L + E_{\text{aux}}$$

$$E_{\text{daily}} = 0,5 \times (E_{16} + E_{32})$$

NOTE: EN 60552-3:2020, 6.8.2 clause, Equation 4, (EU) 2019/2019 Ecodesign Requirements Directive

### Standard annual energy consumption (kWh/a)

SAE, expressed in kWh/a and rounded to two decimal places, is calculated as follows:

$$SAE = C \times D \times \sum_{c=1}^n A_c \times B_c \times [V_c/V] \times (N_c + V \times r_c \times M_c)$$

The modelling paramets are set out in Table 4.

Table 4

The values of the modelling parametrs per compartment type

Compartment type	$r_c^{(a)}$	$N_c$	$M_c$	C
Pantry	0,35			
Wine storage	0,60	75	0,12	between 1.15 and 1.56 for combi appliances with 3 - or 4-star compartments <sup>(b)</sup> , 1.15 for other combi appliances, 1.00 for other refrigerating appliances
Cellar	0,60			
Fresh Food	1,00			
Chill	1,10	138	0,12	
0-star & ice-making	1,20	138	0,15	
1-star	1,50			
2-star	1,80			
3-star	2,10			
Freezer (4-star)	2,10			

<sup>(a)</sup>  $r_c = (T_c - T_a)/20$ ; with  $T_a = 24^\circ\text{C}$  and  $T_c$  with values as set out in Table 3.

<sup>(b)</sup> C for combi appliances with 3- or 4-star compartments is determined as follows:  
where  $fr_{\text{ref}}$  is the 3- or 4-star compartment volume  $V_c$  as a fraction of V with  $fr_{\text{ref}} = V_c/V$ :  
— if  $fr_{\text{ref}} \leq 0,3$  then  $C = 1,3 + 0,87 \times fr_{\text{ref}}$ ;  
— else if  $0,3 < fr_{\text{ref}} \leq 0,7$  then  $C = 1,87 - 1,0275 \times fr_{\text{ref}}$ ;  
— else  $C = 1,15$ .

The compensation factors are set out in Table 5.

Table 5

The values of the compensation factors per compartment type

Compartment Type	A <sub>c</sub>		B <sub>c</sub>		D			
	Manual defrost	Auto defrost	Freestanding appliance	Built-in appliance	<2 <sup>(a)</sup>	3 <sup>(a)</sup>	4 <sup>(a)</sup>	>4 <sup>(a)</sup>
Pantry	1,00		1,00	1,02	1,00	1,02	1,035	1,05
Wine storage								
Cellar								
Fresh-Food								
Chill	1,00		1,00	1,03	1,00	1,02	1,035	1,05
0-star & ice-making								
1-star								
2-star								
3-star								
Freezer (4-star)	1,00	1,10		1,05				

<sup>(a)</sup> number of external doors or compartments, whichever is lowest.

Note : (EU) 2019/2019 Ecodesign Requirements Directive, Clause 5, Table 4-5

5. Determination of the EEI:

EEI, expressed in % and rounded to the first decimal place, calculated as:

$$EEI = AE/SAE.$$

Note : (EU) 2019/2019 Ecodesign Requirements Directive, Clause 5

Auxiliary energy (kWh/a)

$$W_{heaters} = \left[ \sum_{i=1}^k (R_i \times P_{H_i}) \right] \times 1,3 \quad (40)$$

Table F.1 — Format for temperature and humidity data – Ambient controlled anti-condensation heaters

Relative Humidity	RH band mid-point	Probability R <sub>i</sub> at 16°C	Probability R <sub>i</sub> at 22°C	Probability R <sub>i</sub> at 32°C	Heater W at 16°C	Heater W at 22°C	Heater W at 32°C
0 to 10%	5%	0,00%	0,00%	0,34%	P <sub>H1</sub>	P <sub>H11</sub>	P <sub>H21</sub>
10 to 20%	15%	0,61%	6,86%	2,01%	P <sub>H2</sub>	P <sub>H12</sub>	P <sub>H22</sub>
20 to 30%	25%	3,11%	14,57%	1,61%	P <sub>H3</sub>	P <sub>H13</sub>	P <sub>H23</sub>
30 to 40%	35%	5,03%	14,83%	0,86%	P <sub>H4</sub>	P <sub>H14</sub>	P <sub>H24</sub>
40 to 50%	45%	5,09%	11,67%	0,18%	P <sub>H5</sub>	P <sub>H15</sub>	P <sub>H25</sub>
50 to 60%	55%	4,67%	8,31%	0,01%	P <sub>H6</sub>	P <sub>H16</sub>	P <sub>H26</sub>
60 to 70%	65%	3,39%	5,54%	0,00%	P <sub>H7</sub>	P <sub>H17</sub>	P <sub>H27</sub>
70 to 80%	75%	3,17%	2,51%	0,00%	P <sub>H8</sub>	P <sub>H18</sub>	P <sub>H28</sub>
80 to 90%	85%	2,85%	0,66%	0,00%	P <sub>H9</sub>	P <sub>H19</sub>	P <sub>H29</sub>

90 to 100%	95%	2,05%	0,07%	0,00%	P <sub>H10</sub>	P <sub>H20</sub>	P <sub>H30</sub>
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Incremental defrost and recovery energy consumption at 16/32 °C (Wh)

$$\Delta E_{dfj} = (E_{end-F} - E_{start-D}) - \frac{(P_{SS-D} + P_{SS-F})}{2} \times (t_{end-F} - t_{start-D}) \quad (19)$$

$$\Delta E_{df} = \frac{\sum_{j=1}^m \Delta E_{dfj}}{m} \quad (22)$$

Note : EN 62552-3:2020 Annex C, Clause C.3.3, Equation 19-22

Defrost interval at 16/32 °C (h)

for Compressor Run Time Defrost Controller

$$\Delta t_{df} = \frac{\Delta t_{rt} - \Delta t_{dr} - \Delta t_{dh}}{CRt_{SS}} + \Delta t_{dxy} \quad (26)$$

for Variable Defrost Controller

$$\Delta t_{df32} = \frac{\Delta t_{d-max} \times \Delta t_{d-min}}{[0,2 \times (\Delta t_{d-max} - \Delta t_{d-min}) + \Delta t_{d-min}]} \quad (27)$$

$$\Delta t_{df16} = 2 \times \Delta t_{df32}$$

Note : EN 62552-3:2020 Annex D, Equation 26-27