

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 |   |                             |  |
| Model identifier (d) :   |        | RSSE445K31WN   |   |                             |  |
| Type of refrigerating appliance:   |        |  |   |                             |  |
| Low-noise appliance:   |        | NO   | Design type:  |                             | Free-Standing                                      |
| Wine storage appliance:  |        | NO   | Other refrigerating appliance:  |                             | YES  |
| General product parameters:  |        |  |   |                             |  |
| Parameter  |        | Value  | Parameter   |                             | Value  |
| Overall dimensions (millimetre)  | Height | 1850   | Total volume (dm <sup>3</sup> or l)   |                             | 402  |
|  | Width  | 595  | Energy efficiency class   |                             | F  |
|  | Depth  | 655  | Airborne acoustical noise emission class  |                             | C  |
| EEI  |        | 124  | Climate class:  |                             | Extended temperate / Tropical                      |
| Airborne acoustical noise emissions (dB(A) re 1 pW)  |        | 38   |   |                             |  |
| Annual energy consumption (kWh/a)  |        | 153  |   |                             |  |
| Minimum ambient temperature (°C), for which the refrigerating appliance is suitable  |        | 10   | Maximum ambient temperature (°C), for which the refrigerating appliance is suitable   |                             | 43   |
| Winter setting   |        | NO   |   |                             |  |
| Compartment Parameters:  |        |  |   |                             |  |
| Compartment type   |        | Compartment parameters and values                                  |   |                             |  |
|  |        | Compartment Volume (dm <sup>3</sup> or l)                          | Recommended temperature setting for optimised food storage (°C) These settings shall not contradict the storage conditions set out in Annex IV, Table 3 | Freezing capacity (kg/24 h) | Defrosting type (auto-defrost=A, manual defrost=M) |
| Pantry   | NO     | -  | -   | -                           | -  |
| Wine storage   | NO     | -  | -   | -                           | -  |
| Cellar   | NO     | -  | -   | -                           | -  |
| Fresh food   | YES    | 402,0  | 4   | -                           | M  |
| Chill  | NO     | -  | -   | -                           | -  |
| 0-star or ice- making  | NO     | -  | -   | -                           | -  |
| 1-star   | NO     | -  | -   | -                           | -  |
| 2-star   | NO     | -  | -   | -                           | -  |
| 3-star   | NO     | -  | -   | -                           | -  |
| 4-star   | NO     | -  | -   | -                           | -  |
| 2-star section   | NO     | -  | -   | -                           | -  |
| Variable temperature compartment   | NO     | -  | -   | -                           | -  |
| For 4-star compartments  |        |  |   |                             |  |
| Fast freeze facility   |        | NO   |   |                             |  |
| <b>For wine storage appliances</b>   |        |  |   |                             |  |
| Number of standard wine bottles  |        | -  |   |                             |  |
| Light source parameters (a) (b):   |        |  |   |                             |  |
| Type of light source   |        | LED  |   |                             |  |
| Energy efficiency class  |        | G  |   |                             |  |
| Minimum duration of the guarantee offered by the manufacturer (b),(d) :  |        | 24 Months  |   |                             |  |
| 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:</b>  |        |  |   |                             |  |
| <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) : RSSE445K31WN

Product specifications:

General product specifications:

| Parameter                                  | Value  | Parameter   | Value                         |
|--|--------|---|-------------------------------|
| Annual energy consumption (kWh/a)          | 153,30 | EI (%)  | 124,4                         |
| Standard annual energy consumption (kWh/a) | 123,40 | Combi parameter                                     | 1,00                          |
| Temperature rise time (h)                  | 0,00   | Load factor   | 1,0                           |
| Door heat loss factor                      | 1,000  | Climate class:                                      | Extended temperate / Tropical |
| Anti-condensation heater type              | None   | Airborne acoustical noise emissions (dB(A) re 1 pW) | 38                            |

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

| Parameter                                   | Value |
|---|-------|
| Daily energy consumption at 32 °C (kWh/24h) | 0,641 |

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/24 h) | Thermodynamic parameter (rc) | Nc | Mc   | Defrost factor (Ac) | Built-in factor (Bc) |
| Pantry   | -                                 | -   | -                           | -                            | -  | -    | -                   | -                    |
| Wine storage   | -                                 | -   | -                           | -                            | -  | -    | -                   | -                    |
| Cellar   | -                                 | -   | -                           | -                            | -  | -    | -                   | -                    |
| Fresh food   | 4                                 | 402,0                                     | -                           | 1,00                         | 75 | 0,12 | 1,00                | 1,00                 |
| Chill  | -                                 | -   | -                           | -                            | -  | -    | -                   | -                    |
| 0-star or ice- making  | -                                 | -   | -                           | -                            | -  | -    | -                   | -                    |
| 1-star   | -                                 | -   | -                           | -                            | -  | -    | -                   | -                    |
| 2-star   | -                                 | -   | -                           | -                            | -  | -    | -                   | -                    |
| 3-star   | -                                 | -   | -                           | -                            | -  | -    | -                   | -                    |
| 4-star   | -                                 | -   | -                           | -                            | -  | -    | -                   | -                    |
| 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> ] |                                   | 402                                       |                             |                              |    |      |                     |                      |
| The sum of the volumes of the frozen compartment(s) [l or dm <sup>3</sup> ]                                |                                   | -   |                             |                              |    |      |                     |                      |

Additional information (b),(d) :

The references of the harmonised standards or other reliable accurate and reproducible methods applied: EN 62552-1:2020, EN 62552-2:2020, EN 62552-3:2020, EN60704-2-14:2019

## Calculations

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

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

Where

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

24 is h/d

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

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

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

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

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

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

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

$$AE = 365 \times E_{\text{daily}}/L + E_{\text{aux}} \quad E_{\text{daily}} = 0,5 \times (E_{16} + E_{32})$$

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 parameters are set out in Table 4.

Table 4

The values of the modelling parameters per compartment type

| Compartment type    | $r_c$ (°) | $N_c$ | $M_c$ | 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 (°), 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      |       |       |   |

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

(°) C for combi appliances with 3- or 4-star compartments is determined as follows:  
 where  $fr_{df}$  is the 3- or 4-star compartment volume  $V_p$  as a fraction of V with  $fr_{df} = V_p/V$ :  
 — if  $fr_{df} \leq 0,3$  then  $C = 1,3 + 0,87 \times fr_{df}$ ;  
 — else if  $0,3 < fr_{df} < 0,7$  then  $C = 1,87 - 1,0275 \times fr_{df}$ ;  
 — 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>i</sub> |              | B <sub>i</sub>         |                    | D       |       |       |         |
|---------------------|----------------|--------------|------------------------|--------------------|---------|-------|-------|---------|
|                     | Manual defrost | Auto-defrost | Freestanding appliance | Built-in appliance | ≤ 2 (*) | 3 (*) | 4 (*) | > 4 (*) |
| Pantry              | 1,00           |              | 1,00                   | 1,02               | 1,00    | 1,02  | 1,035 | 1,05    |
| Wine storage        |                |              |                        |                    |         |       |       |         |
| Cellar              |                |              |                        |                    |         |       |       |         |
| Fresh food          |                |              |                        |                    |         |       |       |         |
| Chill               |                |              |                        | 1,03               |         |       |       |         |
| 0-star & ice-making | 1,00           | 1,10         |                        | 1,05               |         |       |       |         |
| 1-star              |                |              |                        |                    |         |       |       |         |
| 2-star              |                |              |                        |                    |         |       |       |         |
| 3-star              |                |              |                        |                    |         |       |       |         |
| Freezer (4-star)    |                |              |                        |                    |         |       |       |         |

(\*) 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>  |

Incremental defrost and recovery energy consumption at 16 /32 °C (Wh)

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

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

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