

PRODUCT INFORMATION SHEET

| | | | | | |
|---|--------|---|---|-----------------------------|--|
| Supplier's name or trade mark: | | CYLINDA | | | |
| Supplier's address: | | Elektroskandia Sverige AB, Norrvikenleden 97, 19270 Sollentuna, Sweden | | | |
| Model identifier: | | KF7400NERFHE | | | |
| Type of refrigerating appliance: | | Refrigerator - Freezer | | | |
| Low-noise appliance: | no | Design type: | freestanding | | |
| Wine storage appliance: | no | Other refrigerating appliance: | no | | |
| General product parameters: | | | | | |
| Parameter | | Value | Parameter | | Value |
| Overall dimensions (millimeter) | Height | 2025 | Total volume (dm ³ or l) | 362 | |
| | Width | 595 | | | |
| | Depth | 670 | | | |
| EEL | 99 | Energy efficiency class | E | | |
| Airborne acoustical noise emissions (dB(A) re 1 pW) | 38 | Airborne acoustical noise emission class | C | | |
| Annual energy consumption (kWh/a) | 257,69 | Climate class: | SN-T | | |
| 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 ³ or l) | Recommended temperature setting for optimised food storage (°C) These settings shall not contradict the storage | Freezing capacity (kg/24 h) | Defrosting type (auto-defrost=A, manual defrost=M) |
| Pantry | no | - | - | - | - |
| Wine storage | no | - | - | - | - |
| Cellar | no | - | - | - | - |
| Fresh food | yes | 253,0 | 4,0 | - | A |
| Chill | no | - | - | - | - |
| 0-star or ice-making | no | - | - | - | - |
| 1-star | no | - | - | - | - |
| 2-star | no | - | - | - | - |
| 3-star | no | - | - | - | - |
| 4-star | yes | 109,0 | -18,0 | 5,00 | A |
| 2-star section | no | - | - | - | - |
| Variable temperature compartment | - | - | - | - | - |
| For 4-star compartments | | | | | |
| Fast freeze facility | | yes | | | |
| Light source parameters^{a,b}: | | | | | |
| Type of light source | | LED | | | |
| Energy efficiency class | | G | | | |
| Minimum duration of the guarantee offered by the manufacturer (b): 12 months | | | | | |
| Additional information: | | | | | |
| Weblink to the manufacturer's website, where the information in point 4(a) Annex of Commission Regulation (EU) 2019/2019 (1)(b) is found: http://support.beko.com | | | | | |
| https://www.cylinda.se/support | | | | | |
| a as determined in accordance with Commission Delegated Regulation (EU) 2019/2015 2. | | | | | |
| b changes to these items shall not be considered relevant for the purposes of point 4 of Article 4 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: CYLINDA
Model Identifier: KF7400NERFHE

Product specifications:

General product specifications:

| Parameter | Value | Parameter | Value |
|------------------------------------|--------|--------------------------|-------|
| Annual energy consumption (kWh/a) | 258 | Auxiliary energy (kWh/a) | 0 |
| Standard annual energy consumption | 259,46 | EEl (%) | 99 |
| Temperature rise time (h) | 18,00 | Combi parameter | 1,56 |
| Door heat loss factor | 1,000 | Load factor | 1,0 |
| Anti-condensation heater type | - | | |

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

| Parameter | Value | Parameter | Value |
|---|-------|---|-------|
| Daily energy consumption at 16 °C (kWh/24h) | 0,445 | Daily energy consumption at 32 °C (kWh/24h) | 0,967 |
| Incremental defrost and recovery energy consumption at 16 °C (Wh) | 79,0 | Incremental defrost and recovery energy consumption at 32 °C (Wh) | 82,0 |
| Defrost interval at 16 °C (h) | 40,0 | Defrost interval at 32 °C (h) | 40,0 |

Additional product specifications for low noise refrigerating appliances:

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

Compartment specifications:

| Compartment type | Compartment parameters and values | | | | | |
|----------------------------------|-----------------------------------|------------------------------|-----|------|---------------------|----------------------|
| | Target temperature (°C) | Thermodynamic parameter (rc) | Nc | Mc | Defrost factor (Ac) | Built-in factor (Bc) |
| Pantry | - | - | - | - | - | - |
| Wine storage | - | - | - | - | - | - |
| Cellar | - | - | - | - | - | - |
| Fresh food | 4 | 1,00 | 75 | 0,12 | 1,00 | 1,00 |
| Chill | - | - | - | - | - | - |
| 0-star or ice making | - | - | - | - | - | - |
| 1-star | - | - | - | - | - | - |
| 2-star | - | - | - | - | - | - |
| 3-star | - | - | - | - | - | - |
| 4-star | -18 | 2,10 | 138 | 0,15 | 1,10 | 1,00 |
| 2-star section | - | - | - | - | - | - |
| Variable temperature compartment | - | - | - | - | - | - |

Additional information:

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_{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.

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

Δt_{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 ΔE_{df} and Δt_{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 (¹⁾ | N_c | M_c | C |
|---------------------|-----------------------|-------|-------|--|
| Pantry | 0,35 | 75 | 0,12 | between 1,15 and 1,56 for combi appliances with 3- or 4-star compartments (²⁾ , 1,15 for other combi appliances, 1,00 for other refrigerating appliances |
| Wine storage | 0,60 | | | |
| Cellar | 0,60 | | | |
| Fresh food | 1,00 | 138 | 0,12 | |
| Chill | 1,10 | 138 | 0,15 | |
| 0-star & ice-making | 1,20 | | | |
| 1-star | 1,50 | | | |
| 2-star | 1,80 | | | |
| 3-star | 2,10 | | | |
| Freezer (4-star) | 2,10 | | | |

⁽¹⁾ $r_c = (T_c - T_f)/20$; with $T_c = 24$ °C and T_f with values as set out in Table 3.

⁽²⁾ C for combi appliances with 3- or 4-star compartments is determined as follows:

where fr_{ef} is the 3- or 4-star compartment volume V_f as a fraction of V with $fr_{ef} = V_f/V$:

— if $fr_{ef} \leq 0,3$ then $C = 1,3 + 0,87 \times fr_{ef}$;
 — else if $0,3 < fr_{ef} < 0,7$ then $C = 1,87 - 1,0275 \times fr_{ef}$;
 — 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 _i | | B _i | | 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 _i at 16 °C | Probability R _i at 22 °C | Probability R _i 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 _{H1} | P _{H11} | P _{H21} |
| 10 to 20 % | 15 % | 0,61 % | 6,86 % | 2,01 % | P _{H2} | P _{H12} | P _{H22} |
| 20 to 30 % | 25 % | 3,11 % | 14,57 % | 1,61 % | P _{H3} | P _{H13} | P _{H23} |
| 30 to 40 % | 35 % | 5,03 % | 14,83 % | 0,86 % | P _{H4} | P _{H14} | P _{H24} |
| 40 to 50 % | 45 % | 5,09 % | 11,67 % | 0,18 % | P _{H5} | P _{H15} | P _{H25} |
| 50 to 60 % | 55 % | 4,67 % | 8,31 % | 0,01 % | P _{H6} | P _{H16} | P _{H26} |
| 60 to 70 % | 65 % | 3,39 % | 5,54 % | 0,00 % | P _{H7} | P _{H17} | P _{H27} |

| Relative Humidity | RH band mid-point | Probability R _i at 16 °C | Probability R _i at 22 °C | Probability R _i at 32 °C | Heater W at 16 °C | Heater W at 22 °C | Heater W at 32 °C |
|-------------------|-------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------|-------------------|-------------------|
| 70 to 80 % | 75 % | 3,17 % | 2,51 % | 0,00 % | P _{H8} | P _{H18} | P _{H28} |
| 80 to 90 % | 85 % | 2,85 % | 0,66 % | 0,00 % | P _{H9} | P _{H19} | P _{H29} |
| 90 to 100 % | 95 % | 2,05 % | 0,07 % | 0,00 % | P _{H10} | P _{H20} | P _{H30} |

Note : EN 62552-3:2020, Annex F 2.5, Equation 40, Table F.1

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

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

for Variable Defrost Controller

$$\Delta t_{df32} = \frac{\Delta t_{d-max} \times \Delta t_{d-min}}{[0.2 \times (\Delta t_{d-max} - \Delta t_{d-min}) + \Delta t_{d-min}]} \quad (27)$$

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