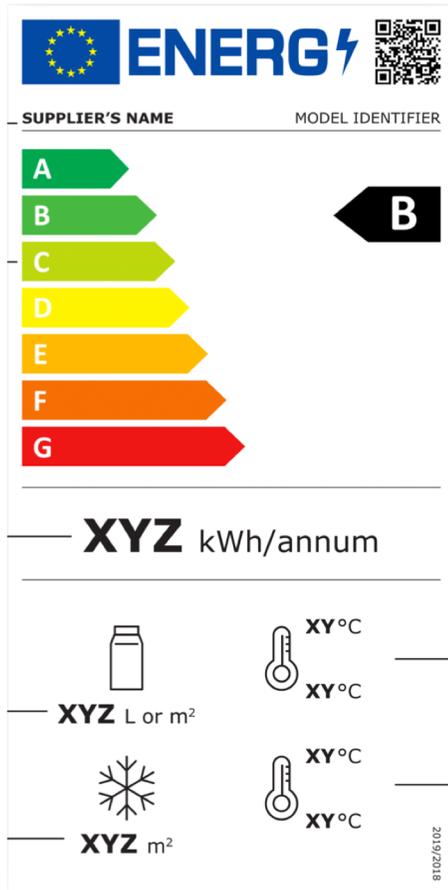


Energy Regulation Refrigerators with Direct Sales Function



E-Learning / Introduction-Tool
Topten.ch

Energy Labelling & Ecodesign
Refrigerating appliances with a
direct sales function

Source: Commission Regulation EU 2019/2018 / Fogalrefrigeration.com

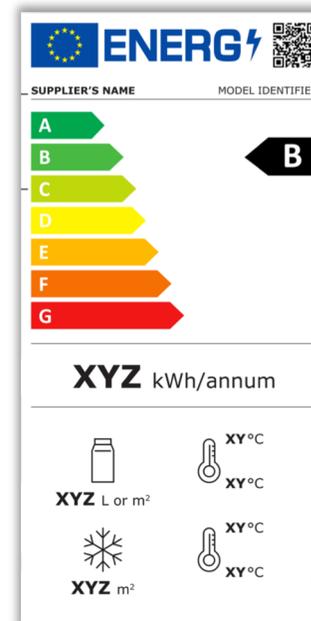
22.10.2020

What is the Energy Label?

- The energy label is a European tool to identify energy efficient appliances.
- It provides information on the energy efficiency of a product.

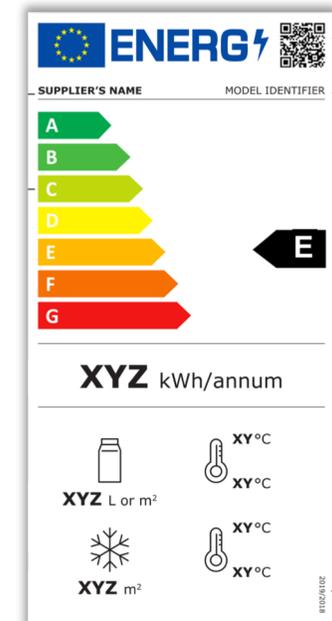
 For Professional Refrigerated Storage Cabinets, a separate energy label exists since 2016 that continues to remain the same.

The energy label helps to compare products with each other.



The class B appliance is more efficient than the class E appliance

The class E appliance consumes almost 3 times as much energy as the class B appliance



What is the scope of the new energy label?

With direct sales function (March 2021)

- Beverage Coolers
- Ice-Cream Freezers
- Refrigerated Vending Machines
- Integral Supermarket Refrigeration and Freezer Cabinets
- Remote Supermarket Refrigeration and Freezer Cabinets
- Serially and Individually Manufactured Cabinets

Other commercial & professional refrigerated cabinets are covered by different regulations

- Household refrigerators ([EU 2019/2016](#)):
 - Minibars
 - Wine Coolers
- Professional refrigerated storage cabinets ([EU 2015/1094](#))
 - Storage refrigerators
 - Storage freezers



What information is shown on the label?

- The layout distinguishes between beverage coolers, ice-cream freezers and all other refrigerating cabinets with a direct sales function
- The energy label provides information on energy consumption as well as other relevant information (see below)

	Temperature class conditions (highest / lowest temperature of the warmest / coldest M-package)
	Temperature class conditions (for beverage coolers and ice-cream freezers)
	Total display area or volume (l) for compartments with chilled operating temperatures
	Total display area or volume (l) for compartments with frozen operating temperatures
	Climate class conditions (for beverage coolers and ice-cream freezers)

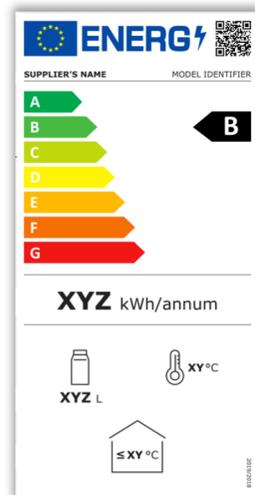
Refrigerator with direct sales function

Supplier's name or trade mark and model identifier		QR-Code to EPREL database (voluntary in Switzerland)
Scale of energy efficiency classes		Energy efficiency class of the model
	XYZ kWh/annum	Annual energy consumption (AE)
TDA (m²) or net resp. gross volume (l) for chilled and frozen compartments	   	Temperature class (testing conditions)
		Number of EU regulation

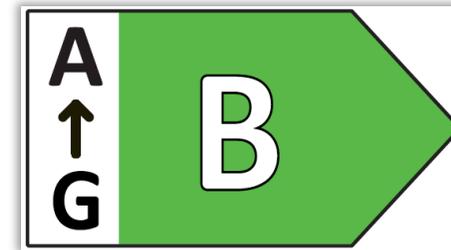
Significance for sales process 2021 (I)

Mandatory declaration at all points of sale (incl. stores and online):

- Appliances placed on the market after **1 March 2021** must be labelled with the new energy label and a product data sheet.



- In advertisements and internet sites the energy class is declared with a coloured arrow indicating the energy class of the product.



- In black is indicated the range of available energy efficiency classes from A to G.

Significance for sales process 2021 (II)

Ecodesign requirements for energy efficiency from 1 March 2021 in the EU and Switzerland

- Swiss efficiency requirements are stricter than EU requirements for beverage coolers, vertical & combined supermarket refrigerator & freezer cabinets

Maximum EEI EU	Maximum EEI Switzerland	Categories
100	<u>80</u>	Beverage Coolers
80	80	Ice-Cream Freezers*
100	<u>80</u>	Vertical and Combined Supermarket Refrigerator and Freezer Cabinets
100	100	Horizontal Supermarket Refrigerator and Freezer Cabinets, Refrigerated Vending Machines, Gelato-Scooping Cabinets**, Roll-in Cabinets

*for pre-packed ice-cream **storage, display and scooping of ice-cream

Significance for sales process 2023

Ecodesign requirements for energy efficiency from 1 September 2023 in the EU and Switzerland (2nd tier)

- Swiss efficiency requirements are stricter than EU requirements for beverage coolers, vertical & combined supermarket refrigerator & freezer cabinets

Maximum EEI EU	Maximum EEI Switzerland	Categories
80	<u>50</u>	Beverage Coolers
50	50	Ice-Cream Freezers*
80	<u>65</u>	Vertical and Combined Supermarket Refrigerator and Freezer Cabinets
80	80	Horizontal Supermarket Refrigerator and Freezer Cabinets, Refrigerated Vending Machines, Gelato-Scooping Cabinets**, Roll-in Cabinets

*for pre-packed ice-cream **storage, display and scooping of ice-cream

Transition period

- Appliances placed on the market after **1 March 2021** must be labelled with the new **energy label**.
- Appliances that do not meet the energy efficiency requirements may no longer be placed on the market after **1 March 2021**. Products already on the market may be sold until 31 December 2021 at the latest.

Use in sales process

The energy label helps during the sales pitch.

- It shows important information that is essential for the purchase decision.
 - Energy efficient appliances save electricity and operating costs.
 - Energy efficient appliances are often of better quality.
-
- First identify the customer's individual requirements.
 - Then choose the most energy efficient appliance of the appropriate dimension and configuration.

System: remote vs. integral



Efficiency classes of remote and integral (plug-in) appliances should **not be directly compared**.

For integral cabinets an additional factor of 1.10 is included in the calculation of the energy efficiency index, while this factor is 1.00 for remote cabinets.

- When deciding between remote and integral solutions, the complete system – including air conditioning, waste heat, etc. – must be considered.

Requirements for resource efficiency

Regarding reparability and recyclability of refrigerating appliances with a direct sales function

- From 01. March 2021
- **Maximum delivery time of spare parts** is 15 working days; availability of spare parts for a minimum of eight years after placing the last unit of the model on the market for common spare parts (i.a. light sources, thermostats, temperature sensors, door gaskets, handles and hinges, knobs, dials and buttons)
- Uncomplicated access to **repair and maintenance information** for professional repairer with technical competence

→ *Commission Regulation (EU) 2019/2024 of 1. October 2019
«Ecodesign requirements for refrigerating appliances with a direct sales function»
Annex II, Point 2 «Resource efficiency requirements» &
Point 3 «Information requirements»*

Categories without energy label but with recourse efficiency and information requirements

- Appliances that do not use a vapour compression refrigeration cycle
- Corner cabinets
- Saladettes
- Horizontal serve-over chilled counters with integrated storage
- Serve-over fish counters with flaked ice
- Vending machines designed for frozen operating temperatures
- Refrigerating appliances for the sale / display of live fish or shellfish, refrigerated aquaria & water tanks

Links and contact

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Energy labelling of refrigerating appliances with direct sales function: [\(EU\) 2019/2018](#)

Ecodesign requirements for refrigerating appliances with direct sales function: [\(EU\) 2019/2024](#)

SFOE page: Swiss energy labelling of refig. appliances with direct sales function: [to the page](#)

SFOE fact sheet for refig. appliances with direct sales function regulation: [PDF Download](#)

Swiss energy efficiency ordinance of 1 November 2017 (EnEV): [PDF Download](#)

Energy efficiency ordinance (EnEV), Annex 1.21: [PDF Download](#)

Annex

Definitions of key categories and concepts

1. Refrigerated Display Cabinets / Refrigerated Appliances with a Direct Sales Function
2. Beverage Coolers
3. Ice-Cream Freezers
4. Supermarket Refrigerators and Freezers / Supermarket Chilled and Frozen Cabinets
5. Refrigerated Vending Machine
6. Integral (Plug-In) vs. Remote
7. Total Display Area (TDA)

➤ *Definitions according to Commission Regulation (EU) 2019/2024 of 1. October 2019*

1. Refrigerated Display Cabinets

*„Refrigerating appliance with a direct sales function“ means an insulated cabinet with one or more compartments that are controlled at specific temperatures, cooled by natural or forced convection through one or more energy consuming means and is intended for displaying and selling, **with or without assisted serving**, foodstuffs and other items at **specified temperatures below the ambient temperature** to customers, accessible directly through open sides or through one or more doors, or drawers or both, including refrigerating appliances with a direct sales function with areas used for storage of foodstuffs and other items not accessible by customers, and excluding minibars and wine storage appliances.*

- Collective term
- Encompasses all refrigerated display cabinets, whether or not they are in the scope of the energy labelling or ecodesign regulation
- Includes cabinets at chilled and frozen operating temperatures

2. Beverage Coolers

*„Beverage cooler“ means a refrigerating appliance with a direct sales function designed to cool, **at a specified speed**, packaged non-perishable beverages, excluding wine, loaded at ambient temperature, for sale at specified temperatures below the ambient temperature. A beverage cooler allows accessing the beverages directly through open sides or through one or more doors, drawers or both. The **temperature inside the cooler may increase during periods of no demand**, for the purpose of energy saving, in view of the **non-perishable nature of beverages**.*

- Integrated / plug-in
- Often with night-time function, for non-perishable beverages
- Measured by manufacturers according to EN 16902
- EEI calculated with gross volume, not TDA



3. Ice-Cream Freezers

*„Ice-cream freezer“ means a **horizontal cabinet** intended to store and/or display and sell **pre-packed ice cream**, where access by the consumer to the pre-packed ice cream is achieved by opening a **non-transparent or transparent lid** from the top, with a net volume ≤ 600 litres (L) and, only in the case of transparent lid ice-cream freezers, a net volume divided by the total display area $\geq 0,35$ meters (m).*

- Integrated / plug-in
- Only horizontal, not for gelato-scooping
- Often covered in branding
- Measured by manufacturers according to EN 16901
- EEI calculated with net volume, not TDA



4. Supermarket Refrigerators and Freezers



„Refrigerator“ resp. „Freezer“ means a refrigerating appliance with a direct sales function that continuously maintains the temperature of the products stored in the cabinet at chilled operating temperature.

- *„horizontal cabinet“ means a refrigerating appliance with a direct sales function with horizontal display, opening on its top, and accessible from above.*
- *„vertical cabinets“ means a refrigerating appliance with a direct sales function with a vertical or inclined display opening from the front.*
- *„combines cabinet“ means a refrigerating appliance with a direct sales function which combines display and opening directions from a vertical and a horizontal cabinet.*

- **Serve-over counters** are per definition «horizontal counters» (goods are accessed from above)
- Measured by manufacturers according to EN ISO 23953-2:2015
- EEI calculated with total display area (TDA)



5. Refrigerated Vending Machines

*„Refrigerated vending machine“ means a refrigerating appliance with a direct sales function designed to **accept consumer payments** or tokens to dispense **chilled foodstuffs or other items without on-site labour** intervention.*

- *„Multi-temperature vending machine“ means a refrigerated vending machine including at least two compartments with different operating temperatures.*
- *„Refrigerated drum vending machine“ means a refrigerated vending machine with **rotating drums** each divided in partitions, in which the foodstuffs and other items are placed on a horizontal surface, and are retrieved through **individual delivery doors**.*

- Measured by manufacturers according to EN 50597:2015
- EEI calculated with net volume, not TDA



6. Integral vs. Remote

*„Integral cabinet“ means a refrigerating appliance with a direct sales function that has an **integrated refrigeration system** which incorporates a compressor and condensing unit.*

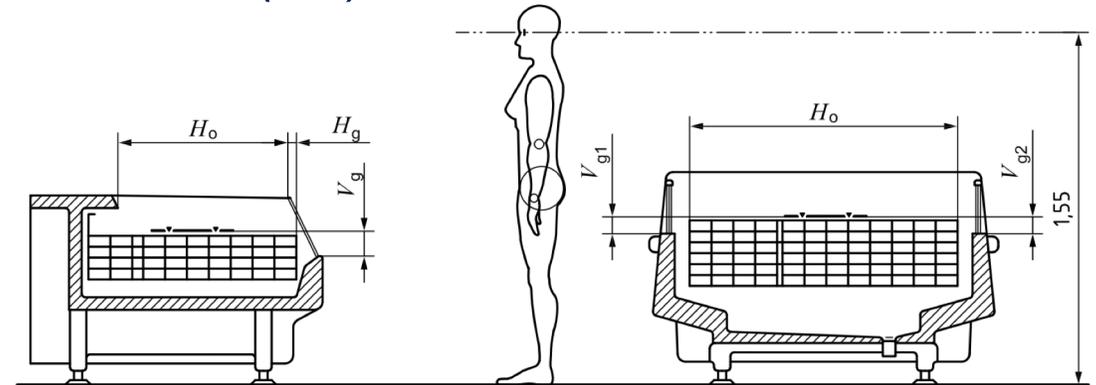
*„Remote cabinet“ means a refrigerating appliance with a direct sales function which consists of a factory-made assembly of components that in order to function as a refrigerating appliance with a direct sales function, **needs to be connected additionally to remote components** (condensing unit and/or compressor and/or water condensed unit) which are not an integral part of the cabinet*

- Integrated / plug-in = integriertes refrigeration system
- Nicht steckerfertig = zentralgekühlt / angeschlossen an Kühlanlage

7. Total Display Area

„**Total display area**“ (TDA) means the **total visible foodstuffs and other items area**, including visible area through glazing, defined by the **sum of horizontal and vertical projected surface areas** of the net volume, expressed in square meters (m²).

$$TDA = (H_o \times L_{oh}) + (H_g \times L_{gh}) + (V_o \times L_{ov}) + (V_g \times L_{gv})$$



H -> horizontal projection, in metres	index h -> horizontal
V -> vertical projection, in metres	index v -> vertical
L -> cabinet length without end walls, in metres	index t -> top
index o -> open surface	index b -> base
index g -> glazing surface	index w -> end wall

„TDA is determined by the sum of vertical and horizontal projected areas from visible foodstuff [...] for multi-deck and semi-vertical decks [...] measured from a plane located at 1,55 m from the ground.“