

Submitting Products to Topten

Overview of selection criteria and accepted standards

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Criteria for all products

- Criteria:
- ✓ Natural refrigerant with global warming potential $GWP \leq 3$ (e.g. R290/propane, R600a/isobutane, R744/CO₂)
 - ✓ Plug-in (integral, self-contained)

Beverage Coolers

- Criteria:
- ✓ Forced-air circulation (capable of pulling down temperature within 4 hours, respectively)
 - ✓ Maximum draft energy efficiency index of 30 according to 2014 working document; R744 models with a maximum draft energy efficiency index of 50 according to 2014 working document
- Data:
- Measurement at climate class 3 (EN ISO 23953) / CC1 (EN 16902) → 25°C, 60% relative humidity
 - Temperature class must be one of the following: M1 or M2 (EN ISO 23953); K1, K2, K3 or K4 (EN 16902)
 - Primarily according to the new European standard for beverage coolers (EN 16902)
 - In a transitional phase until 30.06.2018, measurements were also accepted according to EN ISO 23953-2:2015 (or national adaptations based on it)

Ice Cream Freezers

- Criteria:
- ✓ With lid, maximum 600 litres net volume, static
 - ✓ Maximum draft energy efficiency index of 50 according to 2014 working document
- Data:
- Measurement at climate class 4 (30°C, 55% relative humidity) preferred, if measurement at climate class 3 (25°C, 60% RH) then energy consumption is multiplied by a factor of 1.24
 - Temperature class must be one of the following: L1, L2 or L3 (EN ISO 23953); C1 or C2 (EN 16901)
 - Primarily according to the new European standard for ice cream freezers (EN 16901)
 - In a transitional phase until 30.06.2018, measurements were also accepted according to EN ISO 23953-2:2015 (or national adaptations based on it)

Refrigerated Display Cabinets

- Criteria:
- ✓ Maximum draft energy efficiency index as given in table below according to 2014 working document, except value for M = 8.5 instead of 1.6 for vertical, semi-vertical and combined supermarket freezer cabinets.

Category	Energy efficiency index
Horizontal display freezers	≤ 50
Small counter-top freezers	≤ 10
Vertical freezers with glass doors (TDA < 2 m ²) *	≤ 30
Vertical freezers with glass doors (TDA > 2 m ²) *	≤ 60
Horizontal chilled display cabinets	≤ 50
Vertical chilled display cabinets	≤ 50

* with closed sides

- Data:
- Measurement at climate class 3 (25°C, 60% relative humidity)
 - Temperature class must be one of the following: M1, M2, H1, H2, L1, L2 or L3
 - Primarily according to EN ISO 23953-2:2015
 - In a transitional phase until 31.12.2017, measurements were also accepted according to EN ISO 23953:2005/A1:2012 *

* Energy consumption was multiplied by a factor of 1.1 for vertical chilled cabinets (no correction for frozen or horizontal cabinets). The correction factor accounts for the higher number and longer duration of door openings

under EN ISO 23953:2015 compared to A1:2012.

Refrigerated Vending machines

- Criteria: ✓ Maximum draft energy efficiency index of 75 according to 2014 working document
- Data:
- Measurement at climate class 3 (25°C, 60% relative humidity)
 - Primarily according to the new European standard for vending machines (EN 50597:2015)

Storage Refrigerators and Freezers

- Criteria: ✓ Energy efficiency class according to the EU energy label (EU regulation No 2015/1094) as given in the following table (or better):

Category	Energy efficiency class	Energy efficiency index
Storage counter refrigerators	A	<25
Storage refrigerators 1-door	A	<25
Storage refrigerators 2-doors	C	<50
Storage counter freezers	B	<35
Storage freezers 1-door	C	<50
Storage freezers 2-doors	D ; from 01.08.19 min. C	<75 ; from 01.08.19 <50
Storage refrigerator-freezers	D	<75

Minibars

- Criteria: ✓ Energy efficiency class according to the EU energy label (EU regulation No 1060/2010) as given in the following table (or better):

Category	Energy efficiency class	Energy efficiency index
Minibars	A+	<42

Wine coolers

- Criteria: ✓ Energy efficiency class according to the EU energy label (EU regulation No 1060/2010) as given in the following table (or better):

Category	Energy efficiency class	Energy efficiency index
One temperature zone	A+	<42
Multi temperature zones	A	<55

Links to documents

- EU energy label for refrigerated commercial display cabinets, latest working document:
[http://www.topten.eu/uploads/File/CF_draft%20Energy_label_DG%20ENER%20Lot%2012%20refrigerated%20commercial%20display%20cabinets%20\(2\).docx](http://www.topten.eu/uploads/File/CF_draft%20Energy_label_DG%20ENER%20Lot%2012%20refrigerated%20commercial%20display%20cabinets%20(2).docx)
- EU energy label for storage refrigerators and freezers:
http://www.topten.eu/uploads/File/2015-1094_EN_Professional-equipment_Label.pdf
- EU energy label for household refrigerating appliances:
<http://www.topten.eu/uploads/File/Energy%20Label%20regulation%20cold%202010.pdf>

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