Guidelines for Topten Public Procurers

Refrigerated Display Cabinets

Steffen Hepp, July 2021

Why follow Topten criteria?

- Topten.eu/pro (www.topten.eu/pro) is a European web portal helping buyers, professionals, public procurers and large buyers to find the most energy efficient products available in Europe. The products are selected and updated continuously, according to their high energy and environmental performances, independently from the manufacturers.
- The Topten criteria below can be inserted directly into tendering documents.
- All refrigerated display cabinets displayed on www.topten.eu meet the criteria contained in these guidelines. Procurers can therefore use the website to check the availability and assortment of products currently on the market, which meet the **Topten selection criteria for Refrigerated Display Cabinets**.
- Topten.eu/pro links to national partners Topten Pro websites and was developed under the Topten Act project, supported by the European Union through Horizon 2020 programme.

How much can you save?

The commercial refrigerated displays listed on www.topten.eu are plug-in cabinets (remote cabinets are not considered). It includes various types of commercial display refrigerators and freezers.

Nevertheless, also products with remote cooling do have an EU energy label and it is worth considering a good energy class in selecting offers. However, this document does not indicate a minimum required class for remote cabinets.

Considering the models listed on Topten and the following assumptions, it is possible to achieve the savings indicated in the next table.

Assumptions
- Lifetime expectation: 8 years
- Electricity cost: 0,20 €/kWh

		Volume (litres)	Energy (kWh/year)	Electricity costs (€ in 8 years)	Savings (€ in 8 years)
Horizontal freezer cabinets	Topten model	900	2,300	3,679	**51% energy/unit 3,884 €/unit**
	Inefficient model	893	4,727	7,563	

Small counter top freezers	Topten model	100	456	730	**64% energy/unit 1,280 €/unit**
	Inefficient model	65	1,256	2,010	
Medium cabinet freezers	Topten model	500	2,847	4,555	**68% energy/unit 9,723 €/unit**
	Inefficient model	500	8,924	14,278	
Large cabinets freezers	Topten model	700	7,044	11,270	**64% energy/unit 20,090 €/unit**
	Inefficient model	700	19,600	31,360	
Horizontal refrigerator cabinets	Topten model	400	1,142	1,828	**61% energy/unit 2,886 €/unit**
	Inefficient model	400	2,946	4,714	
Vertical refrigerator cabinets	Topten model	700	3,493	5,589	**59% energy/unit 7,949 €/unit**
	Inefficient model	700	8,461	13,538	

Comparing models with similar net capacity, the Topten models allow electricity savings, in 8 years, from around 1,300 €/unit, for small counter top freezers, to nearly 21,100 €/unit for large cabinet freezers. Best models on www.topten.eu consume 51% to 68% less energy than inefficient models.

Procurement criteria

The following criteria can be inserted directly into tendering documents. The Topten selection criteria and the product lists are updated regularly. The newest versions are always available at **www.topten.eu/pro**.

SUBJECT: HIGHLY ENERGY-EFFICIENT COMMERCIAL DISPLAY REFRIGERATORS

TECHNICAL SPECIFICATIONS

1. Energy class

Products must fulfill minimum the following Energy Classes (or EEI):

	Type of Display Cabinet	Energy Efficiency Index	Energy Class
Freezer	Horizontal freezer cabinets	< 35	min C
	Vertical, semi-vertical and combined supermarket freezer cabinets:		
	○ Small counter top freezers (TDA < 0.33 m²)	< 10	min A
	○ Medium cabinet freezers w glass doors* (0.33 m² ≤ TDA < 2.00 m²)	< 30	-
	○ Large cabinets freezers w glass doors* (TDA ≥ 2.00 m²)	< 60	-
Refrigerator	Horizontal refrigerator cabinets	< 50	min D
	Small counter top refrigerators (height <=110cm)	< 20	min B
	Vertical, semi-vertical and combined supermarket refrigerator cabinets	< 35	min C

** no display area on side walls (closed sides)*
TDA = total display area (in m2)

Verification

Bidders must supply the energy label and technical data according to EU Regulations No. 2019/2018 and No. 2019/2024.

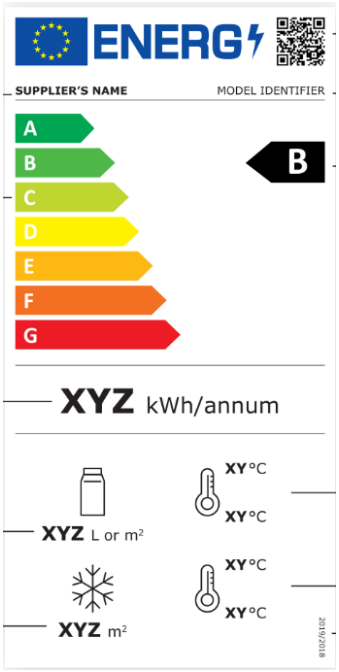
2. Refrigerants

Required is a natural refrigerant with global warming potential (GWP) ≤ 3.
For example R290/propane, R600a/isobutane, R744/CO2.

Verification

Bidders must supply the information on refrigerant(s) used.

BACKGROUND INFORMATION



EU Regulation No 2019/2018	
Energy efficiency class	**Energy efficiency index**
A	EEI < 10
B	10 ≤ EEI < 20
C	20 ≤ EEI < 35
D	35 ≤ EEI < 50
E	50 ≤ EEI < 65
F	65 ≤ EEI < 80
G	EEI ≥ 80

Since 1st March 2021, the EU energy label for refrigerating appliances with a direct sales function (incl. commercial refrigerated display cabinet) is mandatory. It shows:

- the energy efficiency class
- the annual electricity consumption in kWh per year,
- the sum of the net volumes of all chilled compartments functioning at chilled operating temperature,
- the sum of the net volumes of all chilled compartments functioning at frozen operating temperature,
- and the temperature class (indicated by the warmest temperature of the warmest m-package and the lowest temperature of the coldest m-package).

Commercial display refrigerators with a direct sales function with EEI > 100 are not been permitted on the market since March 2021. Products with EEI > 80 will be banned as of September 1st 2023.

NOTES ON IMPLEMENTATION

To increase savings and reduce environmental impact, procurers should evaluate life cycle costs when tendering for refrigerated display cabinets. Thus, it is advisable to include in the tender a costing exercise - even if simple - for the product life cycle costs.

Example of a breakdown costs table, to be filled in by bidders:

	Information details	Different unit costs in € (excluding tax)	Total cost in € (excluding tax)
Delivery			
Installation			
Use	Energy consumption in kWh/year x nº units	Electricity cost: 0,20 €/kWh*	
Maintenance			
Recycling and disposal			

* Example of how use costs can be determined.

** This figure is just an example. The procurer can use the average electricity price paid during the last 2 or 3 years, and also include subscription fee and taxes.

Advice and support

If you would like further assistance in using the information presented here in your own procurement actions or more information on Topten Pro contact your national Topten team (find it on Topten.eu).

The European Commission's Green Public Procurement website contains valuable legal and practical guidance together with procurement criteria for a range of commonly procured products and services.

The elaboration of these procurement guidelines has been supported by funding from WWF Switzerland. The sole responsibility for the content of the Topten procurement guidelines lies with the authors.

Topten ACT has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement nº649647. The sole responsibility for the content of the Topten Pro procurement guidelines lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither EASME, nor European Commission and project partners are responsible for any use that may be made of the information contained therein.