





About Carrier

Founded by the inventor of modern air conditioning, Carrier is the world's leader in high-technology heating, air conditioning and refrigeration solutions. Carrier experts provide sustainable solutions, integrating energy-efficient products, building controls and energy services for residential, commercial, retail, transport and food service customers.

With more than a century of expertise, we drive innovation while putting our customers first, helping protect our planet, and inspiring and empowering our people.



\$ 17.5B

2020 NET sales



56,000

employees



~ 8.000

Active patents and pending patent applications worldwide



80+

brands



160+

countries



100+

new products for the 6th consecutive year

Delivering confidence

through innovative & sustainable refrigeration solutions

Carrier Commercial Refrigeration is a part of Carrier Global Corporation and a leading supplier of innovative, sustainable and intelligent cold chain solutions in the food retail and cold storage industries.

Remote and plug-in cabinets. Chillers and freezers. Systems and controls. Carrier provides the design, installation, service and support you need to enjoy optimum performance – from day one through the entire life-cycle.

We deliver a comprehensive range of solutions to keep goods cool, energy costs low and environmental footprint to a minimum. Delivering confidence.



connected stores



22.000+ sites maintained



700+
top trained technicians



50K+Carrier Refrigeration products in stores and warehouses





COUNTERS



CABINETS





Check our complete range of solutions.



Content

About Carrier	2	Multinor® customization	44
Content	4	Multinor® Salad bar	46
Portfolio overview	6	Premor®	48
Compact meets Counter line	8	Visor®	50

Counters

Areor® family	12
Areor® Total Transparency	14
Areor®	16
Areor® Stepped	18
Areor® ST 1040	20

Multidecks

Optimer®	Low front
Optimer®	LG door versions

Vertical Freezers

Velando® Compact Space	
Top Freezer	

Islands

EasyCube chiller	38
EasyCube switchable	40
Multinor® chiller	42
Multinor® switchable	43

The development and testing of refrigeration equipment are conducted in a climate room, in accordance with ISO 23953 test methods.

Actual storage temperatures in installed equipment may differ due to factors out of the manufacturer's control, and may have an impact on the energy consumption and efficiency of the equipment. The actual data may therefore differ from the data presented in this brochure.

Application recommendations are based on German requirements; legislation may differ in other countries and should be taken into consideration.

Ambient conditions: 25° C / 60 r. h. The technical data refers to a standard cabinet equipment (cross section). The installed electrical loads are referring to 230 V (electrical consumers).

Application



Beverages



Fruits & vegetables



Prepacked cheese



Dairy products





Prepacked fresh meat

Fresh cut salads

Delicatessen

Prepacked sandwiches



Prepacked poultry

Bottle Coolers

12	GD with display	54
14	GD E	55
16	Impulse cooler	56

Technical pages

	The EcoDesign regulation	60
	LED solutions	62
24	Powder paint selection guide	64
27	Excellence in tests and qualification of cabinets	66
20	Plug-in & remote cabinets in comparison	68
30	Carrier's small store program	69

Prepacked fish

Frozen food

Ice cream

Minced meat prepacked







Pastry













Portfolio overview

Counters

Multidecks

Vertical Freezers







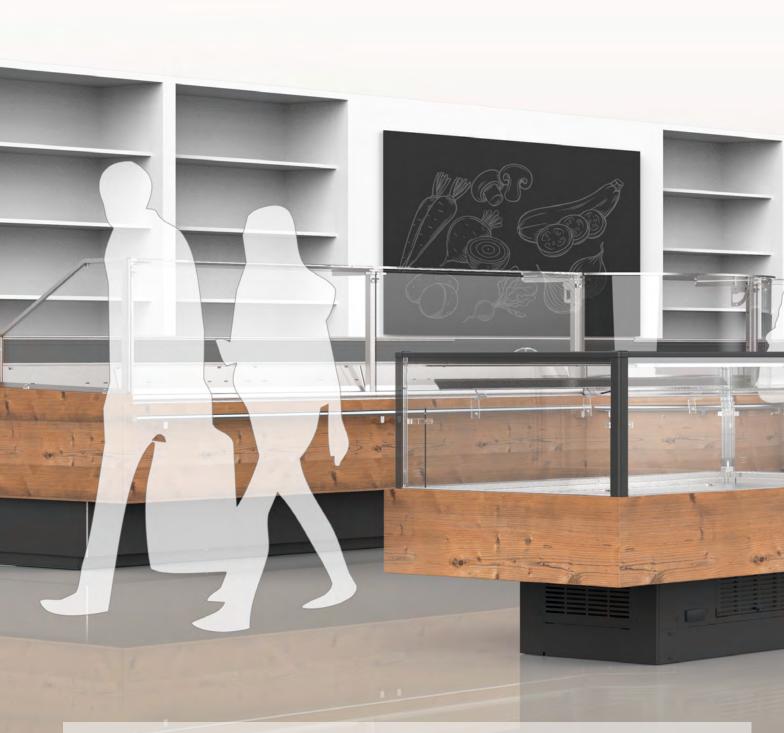
Islands Bottle Coolers





Compact meets Counter Line

Use the synergies of our Compact and Counter Line to boost your sales!



Create a welcoming store atmosphere for your customers and increase your sales! The combination of highly transparent and flexible plug-in cabinets as well as a modern, uniform and widely applicable counter line with a harmonized design ensure an outstanding and attractive shopping experience.

Carrier Commercial Refrigeration provides a wide range of different colors and materials for the cabinets of its Counter and Compact Line - enabling every store to be unique!







Areor® family

With the **Areor® family** you have the perfect solution to display your convenience products. All follow the same principle to deliver:



Perfect **product visibility**, thanks to the transparent superstructure – for an unobstructed view of the products



Harmonized design for the whole stepped range



Optimized **floor space usage** whether designed as a single, row or block layout



Low life-cycle costs thanks to a sliding condensing unit improving maintenance & serviceability



Different heights available to fit your needs and preferences



Flexible for daily use thanks to an easy re-allocation

		Number of display levels	Display area		Approximate height*
		4	Areor® 1231 SQ		1.5 m
	Prime category	3	Areor® 1232 ST / 1241 ST	Areor® 1040 ST	1.3 m
Height	Prime c	2	Areor® 1241 SD		1.2 m
		1	Areor® 1241 TT / 1251 TT G		1m
	Basic category	1	Areor® 1241 / 1251 G		1m
App	oroximate	cabinet width x depth*	1.3 x 1.1 m	1 x 1.1 m	

*for exact dimensions please check technical data sheet





Areor® Total Transparency

Highly transparent, plug-in counter-island



Benefits at a glance

- Full product view through highly transparent cabinet design
- Robust and durable for daily use through scratch resistant glass superstucture
- Simplified maintenance and service due to slidable condensing unit
- Stylish design and cladding options for seamless integration into store layout



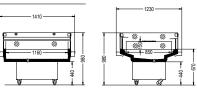
Areor® TT 1251 G

Standard configuration

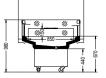
- Elegant, highly transparent glass superstructure
- Plinth of galvanized steel with powder coated finish, body internal and external PVC, outside and inside color black (RAL 9005)
- Stainless steel bumper
- Factory installed castors

- Temperature-assured forced-air cooling
- Solar-thermometer
- Electronic controller
- Energy saving fans
- Sliding condensing unit
- Natural refrigerant R290 (propane)

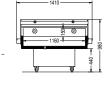




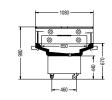
Areor® TT 1241 (Front view)



Areor® TT 1241 (Side view)



Areor® TT 1251 G (Front view)



Areor® TT 1251 G (Side view)

Areor® Total Transparency	Unit	TT 1241	TT 1251G
Temperature	[°C]	+2+4	-1+1
Refrigerant			R290
Width (without / with bumper)	[mm]	12	265 / 1410
Depth (without / with bumper)	[mm]	10	80 / 1230
Height	[mm]		980
Volume	[L]		148
Shelf area	[m²]	0.99	
Total display area	[m²]	1.56	
Power consumption refrigeration	[W]	842 854	
Power consumption defrost	[W]	29	
Energy consumption	[kWh/d]	8.9 4.9	
Heat dispatch*	[W]	370	205
Temperature class		3H2 3M1	
Energy label**		(a)	
Application			

Colors

Paintable area		Color options
F/M01	EXTERIOR	RAL9005 (JET BLACK) RAL7042 (TRAFFIC GREY)
F/M11	PLINTH PANEL	
F/M35	INTERIOR EQUIPMENT	Carrier approved colors



Cooling unit



Power cable



Modbus interface with 2xRJ45 sockets



CO₂ remote (closed version)

External fittings



Installation kit: Side-by-side



Owner plate



Castors, factory installed



Bottom bumper stainless steel, rounded, d=20 mm



Bottom bumper stainless steel, squared, 20 x 20 mm

Internal fittings



Transparent divider: front back



Transparent divider: Z-shape



Transparent divider: V-shape



Price rail: long side: 40 or 60 mm



Solar thermometer (factory installed)

Lighting



Smart LED handrail lighting



Wooden cladding incl. stainless steel bumper, squared

Areor®

Energy-efficient, plug-in counter-island with modern styling



Benefits at a glance

- Outstanding flexibility
- High product visibility with easy access
- Improved energy efficiency
- Simplified maintenance



Areor® 1241

Standard configuration

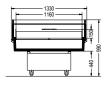
- Plinth of galvanized steel with powdercoated finish, sidewalls and front air deflectors of PVC
- Temperature-assured forced-air cooling
- Energy saving fans
- Sliding condensing unit
- Factory installed castors

- Sliding glass lid (1251G)
- Electronic controller
- Digital thermometer
- Natural refrigerant R290 (propane)

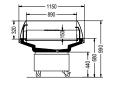




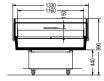
Areor® 1241 (Side view)



Areor® 1241 (Front view)



Areor® 1251G (Side view)



Areor® 1251G (Front view)

Areor®	Unit	1241	1251 G	
Temperature	[°C]	+2+4	-1+1	
Refrigerant			R290	
Width	[mm]		1330	
Depth	[mm]		1150	
Height	[mm]	990	1040	
Volume	[l]	154		
Total display area	[m²]	1.64		
Power consumption refrigeration	[W]	690		
Power consumption defrost	[W]	36		
Energy consumption	[kWh/d]	8.5 3.4		
Heat dispatch*	[W]	354 142		
Temperature class		3H2 3M1		
Energy label**		â C		
Application				

Colors

Paintable area		Color options
F/M01	EXTERIOR	RAL9005 (JET BLACK) RAL7042 (TRAFFIC GREY)
F/M11	PLINTH PANEL	Convinuence
F/M35	INTERIOR EQUIPMENT	Carrier approved colors



Cooling unit



Power cable



CO₂ remote (closed version)



Modbus interface with 2xRJ45 sockets

Internal fittings



Lighting

Solar thermometer (factory installed)



Transparent divider front / back



Transparent divider: Z-shape



Transparent divider: V-shape



Smart LED handrail lighting (only at 1251 G)

External fittings



Fitting kit for installation side-by-side



Bottom bumper stainless steel, squared, 20 x 20 mm



Fitting kit for installation back-to-back



Castors, factory installed



Fitting kit installation side-by-side and back-to-back



Bottom bumper stainless steel, tube, $d = 20 \, \text{mm}$

Areor® Stepped

Plug-in, counter-island with modern design

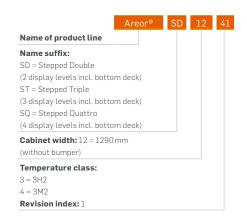


SD 1241 ST 1232 SQ 1231



Benefits at a glance

- Outstanding design and product visibility
- Actively chilled bottom deck (Areor® ST/SD 1241)
- Extended product presentation on all levels
- Block grouping possibilities
- Sliding condensing unit for easy service & maintenance

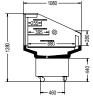


Standard configuration

- Stepped superstructure with two acrylic sidewalls and adjustable glass shelves
- Temperature-assured forced-air cooling with air outlet
- Plinth of galvanized steel with powder-coated finish, sidewalls and front air deflectors of PVC, outside and inside color black (RAL 9005)
- Sliding condensing unit
- Energy saving fans
- Electronic controller
- Factory installed castors
- Digital thermometer (solar)
- Air cooled bottom deck (ST/SD 1241)
- Natural refrigerant R290 (propane)



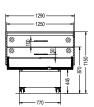




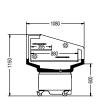
Areor® ST 1232 (Side view)



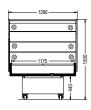
Areor® ST 1241 (Side view)



Areor® SD (Front view)



Areor® SD (Side view)



Areor® SQ 1231 (Front view)



Areor® SQ 1231 (Side view)

Areor® Stepped	Unit	SQ 1231	ST 1232***	ST 1241	SD 1241	
Temperature	[°C]	+2	2+4	0+2		
Refrigerant		R290				
Width (without / with bumper)	[mm]		1290/	1410		
Depth (without / with bumper)	[mm]		1080/	1150		
Height	[mm]	1500	128	0	1150	
Volume	[L]	336.3	185	133	100	
Shelf area	[m²]	2.32	1.83	1.83	1.52	
Total display area		3.53	2.8	2.71	2.29	
Power consumption refrigeration	[W]	982	95	0	890	
Power consumption defrost	[W]	285	186.4		186.4	
Energy consumption	[kWh/d]	21.7	13.8	14.8	13.4	
Heat dispatch*	[W]	905	575	620	560	
Temperature class		3H2		31	M2	
Energy label**		A E	Å D	A C	A C	
Application			() [Q]			

Colors

Paintable area		Color options
F/M01	EXTERIOR	RAL9005 (JET BLACK) RAL7042 (TRAFFIC GREY)
F/M11	PLINTH PANEL	
F/M35	INTERIOR EQUIPMENT	Carrier approved colors



Cooling unit



Power cable



Modbus interface with 2xRJ45 sockets



CO₂ remote

External fittings



Installation kit: Side-by-side



Installation kit: Back-to-back



Installation kit: Block grouping

Accessories



Water level sensor – recommended in regular store conditions



Castors, factory installed



Bottom bumper stainless steel, tube



Bottom bumper stainless steel, squared*



Price rail for front glass



Wooden cladding incl. stainless steel bumper, squared

Internal fittings



Air cooled bottom deck (Areor® ST/ SD 1241), factory installed



Price rail: short



Transparent divider: front back



Price rail: shelf length



Transparent divider: Z-shape



Solar thermometer (factory installed)



Transparent divider: V-shape

Areor® ST 1040

Small plug-in counter-island in transparent design



Benefits at a glance

- Outstanding design and product visibility
- Small size fits in each corner for cross-selling of products
- Block grouping possibilities



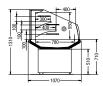
Areor® ST 1040

Standard configuration

- Transparent superstructure with acrylic sidewalls
- Two glass shelves (Areor® ST)
- Temperature-assured forced-air cooling with air outlet
- Powder coated finish in black
- Stainless steel bumper
- Energy saving condenser fan

- Electronic controller
- Factory installed castors on back-side
- Natural refrigerant R290 (propane)





Areor® ST 1040 (Side view)

Areor® Stepped	Unit	ST 1040
Temperature	[°C]	0+2
Refrigerant		R290
Width (with bumper)	[mm]	1030
Depth (with bumper)	[mm]	1050
Height	[mm]	1300
Volume	[L]	138.7
Shelf area	[m²]	1.12
Total display area	[m²]	2.2
Power consumption refrigeration	[W]	610
Power consumption defrost	[W]	60
Energy consumption	[kWh/d]	9.57
Heat dispatch*	[W]	400
Temperature class		3M2
Energy label**		â C
Application		

Colors

Paintable area		Color options	
F/M01	EXTERIOR	RAL9005 (JET BLACK)	
F/M11	PLINTH PANEL	DALOGOS (JET DI AGIC)	
F/M35	INTERIOR EQUIPMENT	RAL9005 (JET BLACK)	



Cooling unit



Power cable

External fittings



Installation kit: Side-by-side



Bottom bumper stainless steel, squared







Optimer® Low front

Refrigerated plug-in multideck with maximized display area



Benefits at a glance

- Harmonized design with Velando® CS and Mendos® for a consistent store layout
- Ideal merchandising with enlarged product facing area and fully transparent doors
- Multiplexing for improved floor space productivity

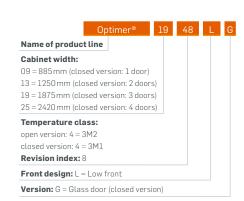


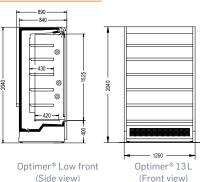
Optimer® 0948LG

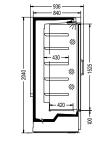
Standard configuration

- Painted panels galvanized steel with hard-wearing powder coated finish, FA0605 white interior, FA0633 nimbus grey exterior
- Panorama endwalls
- Integrated front bumper
- Temperature-assured forced-air cooling with honeycomb air outlet
- Energy saving fans

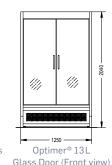
- 5 Display shelves with 40 mm scanner price rails
- Premium LED for canopy lighting
- Manual nightblind or double glass door, tempered
- Electronic controller
- Sliding condensing unit for easy service







Optimer® Low front Glass Door (Side view)



Optimer® Low front	Unit	0948L	1348L	1948L	2548 L***	0948 LG	1348LG	1948 LG	2548 LG
Temperature	[°C]		0	.+2			-1	+1	
Refrigerant					R2	290			
Width	[mm]	885	1250	1875	2420	885	1250	1875	2420
Depth	[mm]				8-	40			
Height	[mm]				20	140			
Volume	[L]	485	716	1102	1436	570	716	1102	1436
Total display area	[m2]	2.3	2.88	3.89	4.74	2.3	2.88	3.89	4.75
Power consumption refrigeration	[W]	1500	1265	2177	-	485	679	1238	1358
Power consumption defrost	[W]	790	508	673	-	452	512	704	1024
Energy consumption* (12 h LED light and blind)	[kWh/d]	21.59	21.18	35.11	-	8.9	12.8	18.2	25.6
Heat dispatch*	[W]	900	885	1465	_	370	535	760	1070
Temperature class		3M2 3M1							
Energy label**		A F ****	A E ****	A F ****	A F ****	A C ****	A C ****	A C ****	A D ****
Application									5

Colors

Paintab	le area	Color options
F/M01	EXTERIOR	Carrier
F/M12	KICKPLATE	approved
F/M35	INTERIOR EQUIPMENT	colors
F/M40	RETURN AIR GRILLE	RAL9003 (SIGNAL WHITE) RAL9005 (DEEP BLACK) RAL9006 (WHITE ALUMINIUM)
F/M04	ENDWALL INTERNAL	FA0369 (HERLIT GREY) RAL9005 (DEEP BLACK) RAL9003 (SIGNAL WHITE)
F/M29	ENDWALL FRAME	FA0632 (STRATUS GREY) FA9005 (DEEP BLACK)
F/M58	PRICE RAIL FOR DISPLAY SHELF	RAL9003 (SIGNAL WHITE)
F/M90	GRID/WIRE/DIVIDER/ BASKET	RAL9005 (DEEP BLACK) RAL9006 (WHITE ALUMINIUM)
F/M07	DECOR FRONT PANEL	FA0632 (STRATUS GREY) FA9005 (DEEP BLACK) FA7016 (ANTHRACIT GREY)



Cooling unit



Sound absorbing package (only LG)



Power cable



Modbus interface with 2xRJ45 sockets

External fittings



Multiplex kit



Gap cover



Partition transparent on cabinet joint



 ${\it Castors, swivel-parking\ with\ frame}$



Floor close off seal for front and sides



Rear wall panelling

Optimer® Low front

Customization

External fittings



Night blind manual / motorized



Panorama endwall



Endwall, internally mirrored

Internal fittings



Display shelf 430 mm



Wire divider for shelves and baskets, height 165 mm



Shelf divider 35 mm high



Wire shelf with wire fence



Set of baskets



Acrylic glass fence 50 mm



Wire fence 50 mm and 100 mm



Acrylic glass fence 100 mm



Top mirror 330 mm



Lateral mirror trim 330 mm (Cover for panorama side-wall)



Scanner price rail for shelves and bottom deck 40 mm



Scan hook 400 mm



Euro hook 400 mm



Hook support rail



Air baffle acrylic (air guidance needed for hooks)

External fittings



Premium or smart LED horizontal lighting



Premium or smart LED horizontal and vertical lighting



Premium or smart LED horizontal and shelf lighting



Premium front shelf lighting

Optimer® LG door versions

Default Carrier OEM door



Optional transparent door

available in 2 versions

- with antireflex coating
- without antireflex coating



3 handle colour possibilities



Standard handle FA 0633 Nimbus Grey



Optional handle Transparent



Optional handle FA 0631 Cirrus Grey

3 handle colour possibilities



Standard handle FA 0633 Nimbus Grey



Optional handle Transparent



Optional handle FA 0631 Cirrus Grey





Velando® Compact Space

Advanced freezer solution for small supermarkets and C-stores

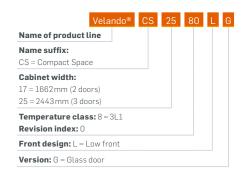


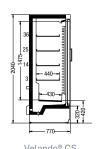
Benefits at a glance

- Consistent store layout
- Environmentally sustainable design using natural refrigerant
- Energy efficient
- Large display area and product visibility
- Multiplexible

Standard configuration

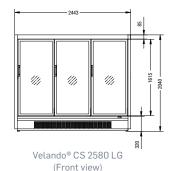
- Painted panels galvanized steel with hard-wearing powder coated finish, FA0605 white interior, FA0633 nimbus grey exterior
- Non-glazed endwalls, triple glass door, tempered
- Integrated front bumper
- Temperature-assured forced-air cooling with honeycomb air outlet
- Energy saving fans
- 4 rows of wire shelves, top 2 rows are with wire shelf covers, 40 mm scanner price rails
- 40 mm scanner price rail for bottom shelf
- Vertical lighting LED
- Electronic controller
- Sliding condensing unit for easy service





Velando® CS (Side view)





Velando® Compact Space	Unit	1780 LG		2580 LG	
Temperature	[°C]		-2224		
Refrigerant			R290		
Width	[mm]	1662		2443	
Depth	[mm]		770		
Height	[mm]		2040		
Volume	[L]	995 1493		1493	
Total display area (with panorama endwall)	[m²]	3.32		4.36	
Power consumption refrigeration	[W]	2126 2990			
Power consumption defrost	[W]	2223	3211		
Energy consumption* (12 h LED light)	[kWh/d]	40.5	60.1		
Heat dispatch*	[W]	1690		2505	
Temperature class		3L1			
Energy label**		\$ E ★**			
Application					

 $^{^{\}star} \, \text{At climate class 3 according to ISO 23953 | *^{\star} \, \text{Label might change depending on configuration | *^{\star\star} \, \text{With panorama endwalls}}$

Colors

Paintab	ole area	Color options	
F/M01	EXTERIOR	-	
F/M12	KICKPLATE		
F/M35	INTERIOR EQUIPMENT	Carrier approved colors	
F/M40	RETURN AIR GRILLE		
F/M04	ENDWALL INTERNAL	FA9005 (DEEP BLACK) FA0605 (WHITE)	
F/M58	PRICE RAIL FOR DISPLAY SHELF		
PRICE RAIL BOTTOM DECK		FA6005 (SIGNAL WHITE) FA9005 (DEEP BLACK)	
F/M90	GRID/WIRE/DIVIDER/ BASKET	FA9006 (WHITE ALUMINIUM)	
F/M07	DECOR FRONT PANEL	FA0632 (STRATUS GREY) FA9005 (DEEP BLACK) FA7016 (ANTHRACITE)	



Cooling unit



Fan motor condenser, reversible



Power cable



Modbus interface with 2xRJ45 sockets

Lighting



Smart LED vertical lighting



Velando® CS 1780 LG

Velando® Compact Space

Customization

External fittings



Panorama and solid endwall



Rear wall pannelling



Floor close off seal for front and side



Holder for electronic price marking rail



Gap cover



Multiplex kit

Internal fittings



Scanner price rail for baskets 40 mm



Wire shelf



Wire shelf for bottom position



Wire shelf cover



Wire divide



Wire basket



Wire basket for bottom



Scanner price rail for shelves



Scanner price rail for bottom shelf



Partition transparent on cabinet joint





A homogeneous store layout in a row with Mendos $^{\circ}$ (Modular Line) and Velando $^{\circ}$ CS (Compact Line)

Top Freezer

Advanced solution to extend the chest freezers



Benefits at a glance

- Environmentally sustainable design using natural refrigerant
- Energy efficient
- Large display area and product visibility
- Optimized floor space
- Perfect combination with Visor® or other chest freezers

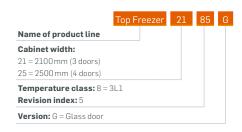


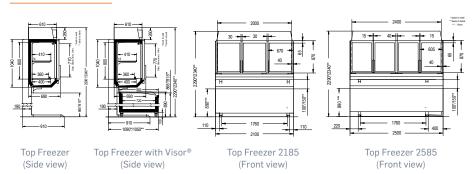
Top Freezer 2585 G

Standard configuration

- Internal panels galvanized steel with hard-wearing RAL 9003 white powder-coated finish.
- External panels galvanized steel with hard-wearing RAL 7045 grey powder-coated finish
- Triple glass doors, tempered
- Energy saving fans

- Temperature-assured air-forced cooling with honeycomb air outlet
- Variable speed drive compressor
- 1 row of wire shelves
- Vertical lighting LED
- Electronic controller
- Telescopic rack for easy installation





Top Freezer	Unit	2185G	2585 G	
Temperature	[°C]	-2	2224	
Refrigerant		1	R290	
Width	[mm]	2100	2500	
Depth	[mm]		910	
Height	[mm]		2290	
Volume	[L]	632 750		
Total display area	[m2]	1.28		
Power consumption refrigeration	[W]	580		
Power consumption defrost	[W]	1760 1900		
Energy consumption* (12 h LED light)	[kWh/d]	10.8	11.2	
Heat dispatch*	[W]	450	466	
Temperature class		3L1		
Energy label**		â C		
Application				

Colors

Paintable area		Color options
F/M01	EXTERIOR	FA0588 (TELEGREY 1) FA0666 (ANTHRACITE)
F/M35	INTERIOR EQUIPMENT	Carrier essential and smart colours
F/M58	PRICE RAIL FOR DISPLAY SHELF	FA0605 (SIGNAL WHITE)
F/M59	INTERNAL PLASTIC PARTS	FA0117 (WHITE) RAL9005 (DEEP BLACK)
F/M78	PRICE RAIL FOR BOTTOM DECK	FA0605 (SIGNAL WHITE)
F/M90	GRID/WIRE/ DIVIDER/ BASKET	FA0605 (SIGNAL WHITE) FA9005 (DEEP BLACK)
Rack		FA0588 (TELEGREY 1) FA0666 (ANTHRACITE)



Cooling unit



Variable speed drive compressor



Power cable



Modbus interface with 2xRJ45 sockets

Internal fittings



Wire shelf



Wire divider



Scanner price rail 52 mm



Owner plate

External fittings



Holder for additional top cover



Claddings to cover side and front

Lighting



Vertical and horizontal lighting



EasyCube chiller

Transparent plug-in chiller island for promotional sales



Benefits at a glance

- Highly transparent island for attractive promotion presentation
- Modern & ergonomic design
- Easy service and maintenance for improved lifecycle

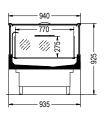


EasyCube 1551 G

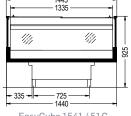
Standard configuration

- Internal and external panels galvanized steel with hard-wearing powder-coated finish (RAL 7016)
- Electronic controller
- Temperature forced air cooling
- Temperature display
- Automatic defrost with drip water evaporation
- Natural refrigerant R290 (propane)
- Energy saving fans

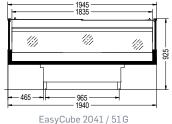




EasyCube 41 / 51G (Side view)



EasyCube 1541 / 51G (Front view)



(Front view)

EasyCube chiller	Unit	1551G	2051G	1541	2041	
Temperature	[°C]	-1+1		0	+2	
Refrigerant			R2	10		
Width	[mm]	1445	1945	1445	1945	
Depth	[mm]		94	40		
Height	[mm]		92	5		
Volume	[L]	280	400	240	330	
Total display area	[m2]	2.01	2.63	1.85	2.45	
Power consumption refrigeration	[W]	300	510	305	525	
Power consumption defrost	[W]	425	520	430	515	
Energy consumption	[kWh/d]	3.81	5.43	4.98	6.94	
Heat dispatch*	[W]	160	230	207	290	
Temperature class		31	M1	31	M2	
Energy label**		A C	A D	↑ E	₹ E	
Application						

Customization

Colors

Paintable	e area	Color options			
F/M01	EXTERIOR				
F/M12	KICKPLATE	Carrier approved colors			
F/M35	INTERIOR EQUIPMENT				
F/M60	HANDRAIL	FA7016 (ANTHRAZITGREY)			
F/M90	GRID/WIRE/DIVIDER/ BASKET	FA0117 (WHITE) FA9005 (DEEP BLACK) FA9006 (WHITE ALUMINIUM)			



Cooling unit



Power cable

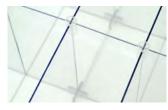


Modbus interface with 2xRJ45 sockets

Internal fittings



Wire shelves



Product divider



Wire shelf steps



Wire divider, front-back



Scanner price rail and holder 40 mm

External fittings



Wooden cladding incl. stainless steel bumper, squared

Gap cover



Bottom cover

Lighting



Smart LED handrail lighting



Castors, factory installed

EasyCube switchable



Highly transparent plug-in chiller & freezer island for promotional sales



Benefits at a glance

- Excellent energy efficiency for a switchable cabinet
- Outstanding transparency for maximum product visibility
- Huge storage capacity for chilled and frozen food
- Comfortable to use and ergonomic design
- Slim superstructure elements for a lightweight look



EasyCube 1550/80 G

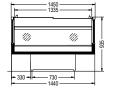
Standard configuration

- Internal and external panels with galvanized steel with hard-wearing powder coated finish
- Easy to open sliding glass lids
- Triple insulated glass panels, tempered
- Electronic control with integrated temperature display
- Temperature forced air cooling
- Automatic defrost with drip water evaporation
- Natural refrigerant R290 (propane)
- Energy saving fans

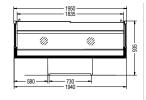




EasyCube 50/80 G (Side view)



EasyCube 1550/80G (Front view)



EasyCube 2050/80 G (Front view)

EasyCube switchable	Unit	1550/80G	2050/80 G***
Temperature	[°C]		-1+1 -2224
Refrigerant			R290
Width	[mm]	1450	1950
Depth	[mm]		945
Height	[mm]		935
Volume	[L]	280	380
Total display area	[m2]	2.01	2.62
Power consumption refrigeration Freezer mode Chiller mode	[W]	527 732	tbd tbd
Power consumption defrost Freezer mode Chiller mode	[W]	1054 1016	tbd tbd
Energy consumption Freezer mode Chiller mode	[kWh/d]	13.2 6.8	tbd tbd
Heat dispatch* Freezer mode Chiller mode	[W]	317 163	tbd tbd
Temperature class			3M1/3L1
Energy label**		A D	
Application			

Customization

Colors

Paintable	e area	Color options			
F/M01	EXTERIOR				
F/M12	KICKPLATE	Carrier approved colors			
F/M35	INTERIOR				
F/M60	HANDRAIL	FA7016 (ANTHRAZITGREY)			
F/M90	GRID/WIRE/DIVIDER/ BASKET	FA0117 (WHITE) FA9005 (DEEP BLACK) FA9006 (WHITE ALUMINIUM)			



Cooling unit



Power cable



Modbus interface with 2xRJ45 sockets



Condenser filter for extreme conditions

Internal fittings



Wire shelves



Product divider



Wire shelf steps



Wire divider, front-back



Scanner price rail and holder 40 mm

External fittings



Castors with brakes (factory installed)

Lighting





Optional wooden cladding incl. stainless steel bumper and castors with brakes

Multinor® chiller

Plug-in chiller island for promotional sales



Benefits at a glance

- Attractive ergonomic design
- Large branding surfaces for increased customer attention
- Optimal use of floor space provided by four model lengths



Multinor® 2030 G

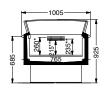
Standard configuration

- Internal and external panels galvanized steel with powder-coated finish
- Integrated bumper all around
- Electronic controller
- Energy saving fans

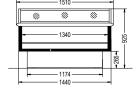
- Temperature-assured air-forced cooling with honeycomb air outlet
- Automatic defrost with drip water evaporation
- Natural refrigerant R290 (propane)



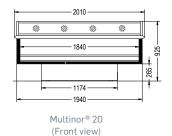
Basic models



Multinor® (Side view)



Multinor® 15 (Front view)



Multinor® chiller	Unit	1540	1541	2040	1530 G	1531 G	2030 G	1550G	2050 G
Temperature	[°C]	0+2			+2+4		-1+1		
Refrigerant					R	290			
Width	[mm]	15	510	2010	1	510	2010	1510	2010
Depth	[mm]				10	005			
Height	[mm]		925				945		
Volume	[L]	242	260	331	280	288	366	268	366
Total display area	[m²]	1.03	1.03	1.39	1.03	1.03	1.39	1.03	1.39
Power consumption refrigeration	[W]	365	365	419	255	255	271	276	297
Power consumption defrost	[W]	755	755	815	455	455	480	785	900
Energy consumption	[kWh/d]	5.41	5.41	5.89	3.94	3.94	4.64	5.31	5.99
Heat dispatch*	[W]	225	225	245	165	165	195	225	250
Temperature class			3M2			3H		3	M1
Energy label**		A F	Å F	ậ E	E	A E	A E	A E	A E
Application									

Multinor® switchable

Plug-in chiller & freezer island for promotional sales



Benefits at a glance

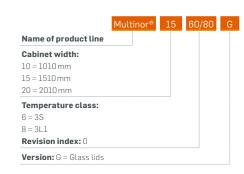
- Two-in-one solution for optimized merchandising flexibility
- Attractive ergonomic design
- Different length for optimized floor space utilization



Multinor® 2060/80 G

Standard configuration

- Internal and external panels galvanized steel with hard-wearing white powder-coated finish
- Integrated bumper all around
- Electronic controller
- Energy-saving fans with reverse function for condenser
- Temperature-assured air-forced cooling with honeycomb air outlet
- Automatic defrost with drip water evaporation
- Natural refrigerant R290 (propane)



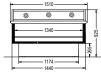
Basic models



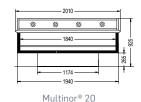
Multinor® (Side view)



Multinor® 10 (Front view)



Multinor® 15 (Front view)



(Front view)

Multinor® switchable	Unit	1060/80G	1560/80G	2060/80 G
Temperature	[°C]		-20 -2224	
Refrigerant	_		R290	
Width	[mm]	1010	1510	2010
Depth	[mm]		1005	
Height	[mm]		945	
Volume	[L]	150	242	331
Total display area	[m²]	0.64	1.03	1.39
Power consumption refrigeration Freezer mode Chiller mode	[W]	368 430	733 481	1050 758
Power consumption defrost Freezer mode Chiller mode	[W]	1300 1300	1546 1546	1633 1633
Energy consumption Freezer mode Chiller mode	[kWh/d]	7.7 3.2	13.72 6.5	18.05 7.3
Heat dispatch* Freezer mode Chiller mode	[W]	321 133	572 271	752 304
Temperature class			3S/3L1	
Energy label**		↑ F	â G	â G
Application				

Multinor®

Customization

Colors

Paintable	e area	Color options		
F/M01	EXTERIOR			
F/M12	KICKPLATE	Carrier approved colors		
F/M35	INTERIOR EQUIPMENT			
F/M60	HANDRAIL	FA0369 (HERLIT GREY)		
F/M90	GRID/WIRE/DIVIDER/ BASKET	FA0117 (WHITE) FA9005 (DEEP BLACK) FA9006 (WHITE ALUMINIUM)		
F/M76	ALL AROUND BUMPER	FA0639 (HERLIT GREY)		



Cooling unit



Power cable



Fan motor condenser, reversible (switchable version only)



Modbus interface with 2xRJ45 sockets



Additional temperature display

Internal fittings



Wire shelves

Product divider



Wire divider / display racks



Wire shelf cover



Night cover



Wire shelf steps

Lighting



Smart LED handrail lighting

External fittings



Additional bumper rails (all around)



Castors, factory installed



Stainless steel (outside)



Scanner price rails 40 mm



Scanner price rails 60 mm



Display frame



Stickers







Multinor® Salad bar



Fresh selection - Modern plug-in chiller island for food courts and deli food



Benefits at a glance

- Ideally fitted for a wide selection of fresh salads & deli food
- High degree of food protection
- Optimized transparency for enhanced product visibility
- Installation and application flexibility

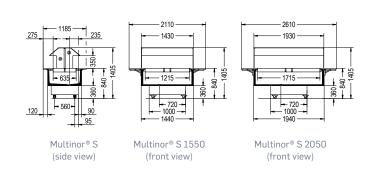


Multinor® S 1550

Standard configuration

- Glass superstructure with frameless glass and transparent spacers
- Closed version with easy to open sliding glass lids
- Horizontal Smart-LED lighting in the glass superstructure
- Highly solid & moisture-resistant worktop all around (foldable on both ends)
- Removable gastronorm containers in stainless steel for a flexible, fresh & clean food presentation (1,5 m version: 8 small, 2 big containers / 2 m version: 8 small, 4 big containers)
- Castors with brakes for comfortable and easy installation
- Energy saving fans
- Natural refrigerant R290 (propane)





Multinor® Salad bar	Unit	1550	1550G	2050	2050 G
Temperature	[°C]		-1	+1	
Refrigerant			R2	90	
Total width (incl. worktop)	[mm]	211	0	26	10
Total depth (incl. worktop)	[mm]		11	35	
Total height	[mm]		14	05	
Volume (gastronorm containers)	[L]	59.4	4	86	6.8
Energy consumption	[kWh/d]	4.68	2.50	5.13	2.84
Temperature class			М	1	
Energy label*			n/	a	
Application				76	

^{*} not within the scope of "Commission Regulation (EU) 2019/2024 laying down ecodesign requirements for refrigerating appliances with a direct sales function" and "Commission Delegated Regulation (EU) 2019/2018 supplementing Regulation (EU) 2017/1369" with regard to energy labelling

Customization

Colors

Paintable	e area	Color options		
F/M01	EXTERIOR	Opening and and and		
F/M12	KICKPLATE	Carrier approved colors		
F/M35	INTERIOR EQUIPMENT	Stainless steel		



Cooling unit



Power cable



Modbus interface with 2xRJ45 sockets

External fittings



Storage compartment for the front sides



Worktop foldable on both ends to install the cabinet at walls or cabinets without losing space. Optional storage compartment for the cabinet front.

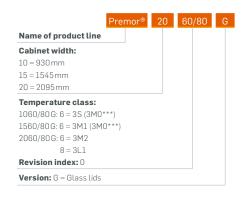
Premor®

Plug-in freezer & switchable island for promotional sales



Benefits at a glance

- Promotion in view
- Excellent product visibility and orientation
- High storage capacity for chilled and frozen food
- Attractive and robust design



Standard configuration

- Internal and external panels galvanized steel with hard-wearing powder coated finish
- Electronic control inclusive temperature readout
- Temperature-assured air-forced cooling with honeycomb air outlet
- Electronic controller

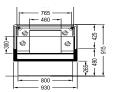
- Automatic defrost with drip water evaporation
- Energy-saving fans with reverse function for condenser
- Energy-saving sliding glass lids
- LED handrail lighting
- Wire shelves (switchable)



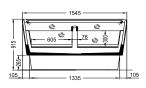




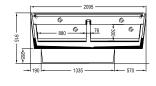
Premor® 10 (Front view)



Premor® 15/20 (Front view)



Premor® 15 (Front view)



Premor® 20 (Front view)

Premor® freezer & switchable	Unit	1080 G	1580 G	2080 G	1060/80G	1560/80G	2060/80G
Temperature	[°C]		-2224		-20 -2224	-1+1 -2224	0+2 -2224
Refrigerant					R290		
Width	[mm]	930	1545	2095	930	1545	2095
Depth	[mm]	900	9	30	900	930)
Height	[mm]				915		
Volume Freezer mode Chiller mode	[L]	158	317	453	158 52	317 109	453 157
Total display area	[m²]	0.99	2.0	2.68	0.99	2.0	2.68
Power consumption refrigeration	[W]	470	930	1036	470	930	1036
Power consumption defrost	[W]	543	1139	1217	543	1139	1282
Energy consumption Freezer mode Chiller mode	[kWh/d]	9.8	17.4	22.3	9.8	17.4 10.5	22.3 15.5
Heat dispatch* Freezer mode Chiller mode	[W]	408	725	929	408 263	725 438	929 646
Temperature class			3L1		3S (3M0***) / 3L1	3M1 (3M0***) / 3L1	3M2/3L1
Energy label**		Å E	Å E	A E	Å E	↑ E	↑ E
Application							

Customization

Colors

Paintable area			Color options		
F/M01	EXTERIOR		Carrier approved colors		
E/M10	KIOKDI ATE	Size 10	Carrier approved colors		
F/M12	KICKPLATE	Size 15/20	FA0633 (NIMBUS GREY)		
F/M35	INTERIOR EQU	JIPMENT	Carrier approved colors		
F/M60	HANDRAIL		FA0631 (CIRRUS GREY)		
F/M90	GRID/WIRE/DI BASKET	VIDER/	FA0605 (SIGNAL WHITE) FA0257 (WHITE ALUMINIUM) FA9005 (DEEP BLACK)		



Cooling unit



Power cable



Fan motor condenser, reversible



Modbus interface with 2xRJ45 sockets

External fittings



Front bumper



Castors: 4 covered rollers, factory installed



Castors: 2 big & 2 small



Scanner price rails 40 mm

Internal fittings

Stickers for lower front and sides



Product divider



Reinforced product divider

Lighting





Premor® 2060/80 G

Visor®

Plug-in freezer & switchable island for promotional sales



Visor® 18 51/81 CE Name of product line Cabinet width: 18 = 1856 mm 21 = 2106 mm 25 = 2506 mm Temperature class: 5 = 3S / 3M18 = 31.1Revision index: 1 Version: CE = Crown End Version: G = Glass lids

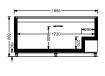
Benefits at a glance

- Large capacity freezer with many layout options
- Modern design with curved sliding lids
- Energy saving components
- Large product facing area
- Optimized floor space especially in combination with Top Freezer

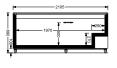
Standard configuration

- External and internal panels galvanized steel with hard-wearing white powder-coated finish
- Top and bottom bumper at the front
- Automatic defrost & static cooling
- Second cable for lighting
- Electronic control
- Grille insert for automatic defrost incl. wire dividers & divider set
- Curved sliding glass lids & LED lighting

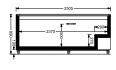




Visor® 1881G (Front view)



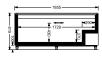
Visor® 2181G (Front view)



Visor® 2581G (Front view)



Visor® 1881 CE G (Side view)



Visor® 1881 CE G (Front view)

* max 200 mm adjustable | ** with wheels: 910 mm

Visor® freezer & switchable	Unit	18816	2181 G	2581 G	1881 CE G	1851/81G	2151/81G	2551/81 G	1851/81 CE G
Temperature	[°C]		-22	24			-2224 / -	20 / -1+1	
Refrigerant						R:	290		
Width	[mm]	1856	2106	2506	1856	1856	2106	2506	1856
Depth	[mm]					8	58		
Height	[mm]		890		832		890		832
Volume	[l]	511	595	729	433	413	483	594	335
Total display area	[m²]	1.25	1.44	1.73	1.25	1.25	1.44	1.73	1.25
Power consumption refrigeration Freezer mode Chiller mode	[W]	336	387	423	329	352 426	393 490	433 553	318 458
Power consumption defrost Freezer mode Chiller mode	[W]	689 -	778	896	681	699 746	771 811	897 928	665 778
Energy consumption Freezer mode Chiller mode	[kWh/d]	7.21 -	8.05	9.53	7.16	6.78 4.18	8.61 5.30	9.69 5.71	6.10 4.47
Heat dispatch* Freezer mode Chiller mode	[W]	300	335	397	294	283 174	359 221	404 238	254 186
Temperature class			3	L1			3L1/3	S/3M1	
Energy label**		D	A D	A D	A D	A ↑ G	A D	D	A C
Application							**************************************		

Customization

Colors

Other external colors (metal parts) on request

If color is available – minimum order quantity one truck load (13.6)

- Visor® 1881 & 1851/81G = 28 pcs
- Visor® 2181 & 2151/81G = 24 pcs
- Visor® 2581 & 2551/81G = 20 pcs
- Visor® 1881 & 1851/81 CE G = 28 pcs

Cooling unit



Power cable

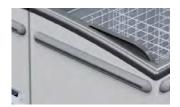


Variable speed drive compressor



Modbus interface with 2xRJ45 sockets

External fittings



Endwall bumper (both sides)



Block grouping sets



Front bumper

Internal fittings



Divider set



Pricing rail 40 mm

Lighting









Bottle Coolers

GD with display

Plug-in glass door cooler with display header in various sizes



Benefits at a glance

- Customization with stickers directly from factory
- Quick cooling of beverages with forced air cooling
- Illuminated display header for better merchandise

GD380

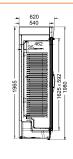




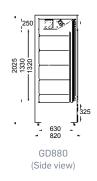
Standard configuration

- Temperature-assured forced-air cooling
- Double glass door, tempered, with black frame
- Exterior color white
- Interior color white

- Door lock
- Adjustable leveller feet
- Analog thermometer
- Internal panels in robust plastic
- Display shelves incl. price rails



GD380 (Side view)



GD with display	Unit	GD380	GD880		
Temperature	[°C]	+4+6			
Refrigerant		R600a	R290		
Width	[mm]	595	1110		
Depth	[mm]	640***	825		
Height	[mm]	1980	2010		
Volume	[l]	372	989		
Capacity 0.331 can		364	1008		
Capacity 0.5 l PET bottle		245	560		
Power consumption refrigeration	[W]	350	940		
Energy consumption* (10 h light)	[kWh/d]	3.38	5.92		
Heat dispatch*	[W]	140	247		
Temperature class		>3H			
Energy label**		D	å F		
Application					

Plug-in glass door cooler with improved design



Benefits at a glance

- Customization with stickers directly from factory
- Quick cooling of beverages with forced air cooling
- Lower operating costs due to low energy consumption

GD380 E



Standard configuration

- Double glass door, tempered, with grey frame
- Exterior color white
- Interior color white
- Door lock
- Adjustable leveller feet
- Analog thermometer

- Internal panels in robust plastic
- Display shelves incl. price rails
- Power cable
- Temperature-assured forced-air cooling

Basic models





GD380 E (Side view)



GD381 E (Side view)

Optimized for stand-alone installation, no line-up possible

GD E	Unit	GD380 E	GD381 E		
Temperature	[°C]	+4+6	6		
Refrigerant		R600a	a		
Width	[mm]	595			
Depth	[mm]	640***			
Height	[mm]	1980	1840		
Volume	[l]	372			
Capacity 0.331 can		364			
Capacity 0.5 l PET bottle		191			
Power consumption refrigeration	[W]	325			
Energy consumption* (10 h light)	[kWh/d]	3.23	2.79		
Heat dispatch*	[W]	134	116		
Temperature class		>3H			
Energy label**		â D	â D		
Application		الله الله الله الله الله الله الله الله	3		

Impulse cooler

Bottle cooler for promotion and impulse sales



IC 100



IC 100 Name of product line IC = Impulse cooler **Volume:** 100 = 110 l

Benefits at a glance

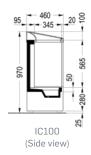
- A point-of-purchase merchandiser and marketing tool like no other
- High product visibility increases impulse sales
- Easy refill of products
- Small footprint ideal for c-stores and kiosks

Standard configuration

- Panels galvanized steel grey powder-coated finish
- Robust plastic opening on top
- Automatic drip water evaporation using waste heat of refrigeration
- Single-row lighting in canopy
- Power cable







Impulse cooler	Unit	IC100
Temperature	[°C]	+4+6
Refrigerant		R600a
Width	[mm]	660
Depth	[mm]	460
Height	[mm]	970
Volume	[l]	110
Capacity 0.331 can		144
Capacity 0.5 l PET bottle		84
Power consumption refrigeration	[W]	170
Energy consumption* (10 h light)	[kWh/d]	2.5
Heat dispatch*	[W]	104
Temperature class		>3H
Energy label**		â D
Application		

^{*} At climate class 3 according to ISO 23953 | ** Label might change depending on configuration.



The EcoDesign regulation

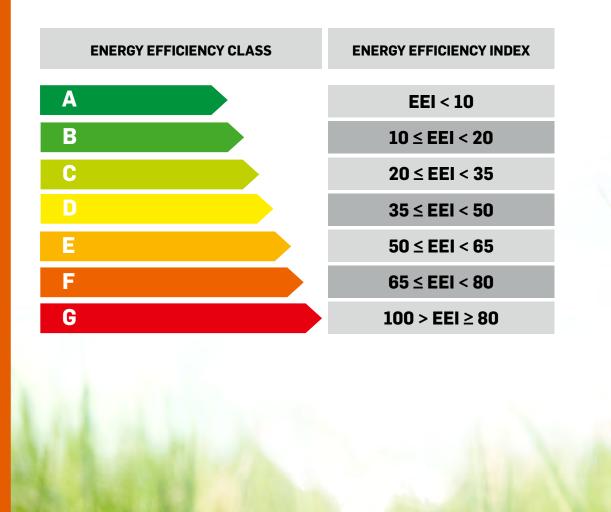
The implementation of the EcoDesign directive for "refrigerated display cabinets with a direct sales function" was adopted by the European Union Commission in October 2019. The application date for the requirements is the $1^{\rm st}$ of March 2021. The directive applies to newly produced refrigerated cabinets only – the

systems, racks and condensing units are covered by other regulations. The compliance is declared by the manufacturer with the declaration of conformity and with providing technical data to a European database called EPREL and the CEmark. A verification procedure will be applied by the member states.

All Carrier products presented in this catalogue are EcoDesign compliant.

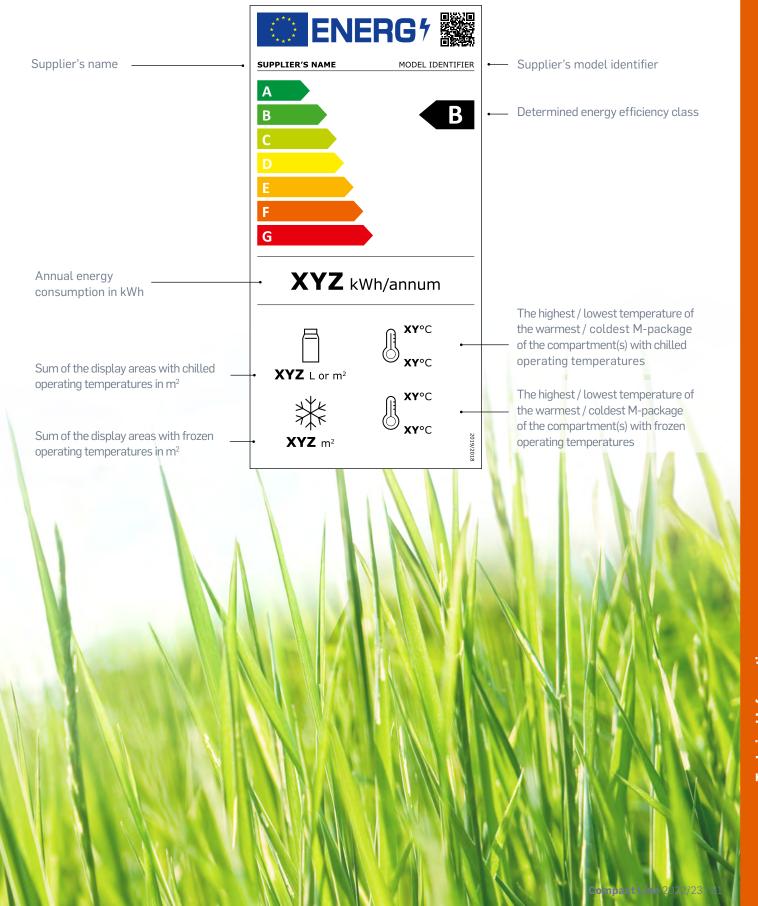
Energy Labelling

The objective of Energy Labelling is to give clear, easy-tounderstand label information on the product energy efficiency, and classify products according to their level of efficiency (from G to A), with an overall effect of pulling the market towards more energy efficient products. Products marketed prior to March 2021 are not affected.



The Label

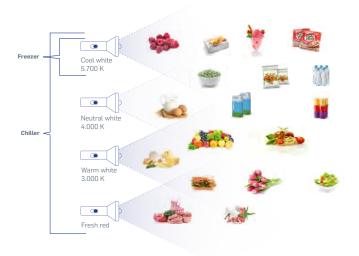
Each new refrigerating appliance will be supplied with a printed label gathering energy related information:



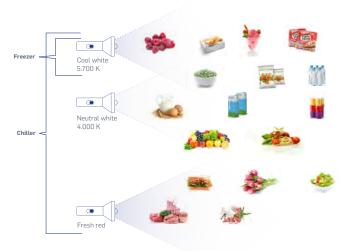
LED solutions

for the best merchandising

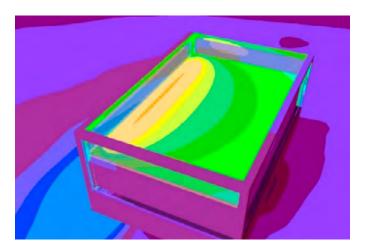
Premium LED (all colors)



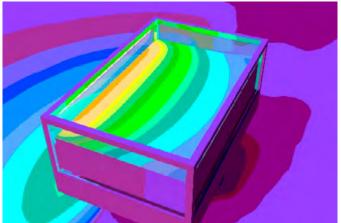
Smart LED



Premium LED Light distribution



Smart LED Light distribution



Features Premium LED

- Robust aluminium housing
- Full color range
- Improved light distribution

Features Smart LED

- Plastic housing
- Limited color range
- Good light distribution

Group	Name	Cabinet type	Premium LED	Smart LED	Position of possible LEDs
Counters	Areor® TT G	-			
	Areor® G		×	YES	horizontal
Multidecks	Optimer® L				canopy, shelf,
	Optimer® LG		YES	YES	vertical
Vertical freezers	Velando® CS		×	YES	vertical
	Top Freezer		YES	×	horizontal, vertical
Islands	EasyCube		×	YES	horizontal
	Multinor®		×	YES	horizontal
	Multinor® Salad bar		×	YES	horizontal
	Premor®		×	YES	horizontal
	Visor®		×	YES	horizontal
Bootle Coolers	GD		×	YES	horizontal, vertical, canopy
	GD E		×	YES	horizontal, vertical, canopy
	Impulse cooler		×	YES	canopy

Powder paint selection guide

When it comes to customization, Carrier offers a wide range of possibilities in the design of each product – from the front aesthetic to the endwalls and pedestals. These are available in a variety of designs, material finishings and colors. Through the creative use of colors, you can illustrate an inviting and pleasant atmosphere that evokes positive emotions. Shades of reds can express passion, enthusiasm, and energy; whereas blue and green express nature and freshness.

Essential colors

Benefit from a nice design at the best price level





Smart colors

Make the cabinet your style at the best value for money











Exclusive colors

Differentiate your market and customize your cabinet in a wide range of colors. Contact your local sales representative for more information.

A wide spectrum of colors and shades to set your store's ambiance await you...

The natural way



A promotion world



The premium retailer





Excellence in tests and qualification of cabinets

Outstanding technology based on 60 years development experience

With around twenty testing rooms, Carrier is one of the best-equipped manufacturers in Europe. Most testing rooms are equipped according to the ISO 23953 standard (refrigerated display cabinets classification, requirement and test conditions) to ensure comparable and good product performance. Besides fulfilling ISO 23953 requirements, Carrier has its own internal tests, standards and requirements that each cabinet has to pass before going to market. This ensures the right quality and is reflected in robust, reliable products to maximize the lifetime of each refrigerated display cabinet.

Measuring temperature performance

Carrier declares the temperature performance of the cabinet according to the ISO 23953 standard, which defines the refrigerated cabinet requirements and test conditions.

ISO 23953 - Refrigerated display cabinets classification, requirement and test conditions

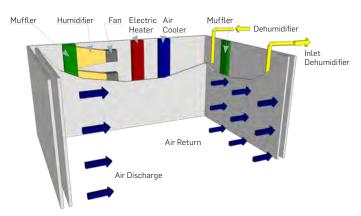
The refrigerated display cabinets are classified according to the standard ISO 23953. This standard defines the classification, requirement and test conditions for representative refrigerated display cabinets, including the minimum size of the test room, side air-flow, light intensity, temperature and humidification control, calibrated measurements, etc.

Thanks to ISO 23953, customers can compare the temperature classification according to the same testing procedure for all manufacturers in Europe who strictly follow the standard.

Climate room requirements and setup

ISO 23953 defines exactly the requirements and tolerances of a climate room including:

- Size of the room
- Side airflow speed and direction relative to the cabinet
- Calibration of the measurement equipment
- Where to place the cabinet in the climate room
- Color of room and light intensity



Example of Carrier testing room. The above picture illustrates how a climate room for testing the refrigeration equipment looks like.

Climate class – describes the environment outside of the cabinet

The climate class defines the certain ambient test condition (temperature and relative humidity) during the testing period. The standard describes several climate classes out of which for commercial refrigeration usually climate class 3 is used to measure and declare the temperature performance.

Example: "climate class 3" Temperature: 25 °C Rel. humidity: 60 %

Temperature class – describes the temperature performance inside the cabinet

The temperature performance is tested in a cabinet with product-simulation models, called M-package. The M-package simulates the thermal characteristic of meat products.

Cabinet temperature performance means:

- How well can the cabinet hold the temperature of a chilled or frozen product – simulation models at lab climate conditions
- How small is the cabinet storage temperature deviation of product – simulation models at lab climate conditions
- Temperature performance is tested by simulating different operation use cases: shop closed (light off, night curtain down, no door opening) shop open and commissioning of cabinet (doors / lids long open) shop open consumer take products (regular door / lid opening)

There are three main temperature class groups: Low, Medium and High temperature. These main groups are split into different temperature classes indicated by a number following the group letter: Example M2. The higher the number, the higher the difference between the lowest M-package temperature and the highest M-package temperature.

Example: "Temperature Class M2" (Medium temperature class 2) Warmest M-package: max. +7°C Coldest M-package: min. -1°C

Link between climate class and temperature class

Because the temperature inside a cabinet is strongly influenced by the environment's temperature and humidity, the temperature class is only a meaningful declaration if it is linked to a climate class. For this reason, a full cabinet declaration always consists out of climate class and temperature class.

Example "3M2" (At climate class 3, the cabinet reaches temperature performance M2)

3= climate class (certain ambient test condition during testing) M2= Temperature class (specified highest and lowest M-package temperature)

Laboratory vs. operation in real store environment

According to the ISO 23953-2 standard Appendix B, there are significant different operation conditions between lab and store operation, especially for remote cabinets. The following section describes and explains the difference to the application in the field.

Difference between laboratory and store data for remote cabinets

The conditions of a remote cabinet in the store differ greatly from the lab conditions. Usually, the cabinets in a store are multiplexed, located against a wall and the ambient conditions are lower. Using direct lab data for remote cabinets would lead to oversizing of piping and compressor racks. Based on this, Carrier provides for E6 remote cabinets in the technical data sheets rack sizing data for the standard configuration at store condition $25^{\circ}\text{C} / 60\,\%$ rel. H. and $22^{\circ}\text{C} / 55\,\%$ rel. h. This data is available and optimized for each investment and life cycle.

Based on Carrier's leading expertise in refrigerant system design, our general recommendation is:

- Rack design data 25/60 application:
 Stores in warm climates, stores with difficult climate situations, cabinet in a non-ideal place (high humidity, high temperature, close to a door, etc.)
- Rack design data 22/55 application:
 Store in middle and north Europe, stores with moderate climate (with air conditions, remote multiplexing cabinets)

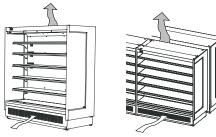
Technical data for plug-in cabinets

To have comparable energy consumption within the Carrier range, we specify the energy consumption for the standard configuration of plug-in cabinets, according to ISO 23953 and climate class 3 conditions. This makes the data comparable; however, the real energy consumption in a store is usually lower.

Influence of the cabinet installation on the performance

The installation can have significant effects on the energy and temperature performance. There are some requirements, which need to be kept to ensure that the cabinets are working properly.

- Do not install the cabinet outside or next to heating radiators or other heat sources
- Keep a distance from the wall as indicated in the operating manual
- Avoid direct sunlight radiation impact
- Keep free the air intake and outlet area (only plug-in)



Example of a plug-in cabinet which needs free air flow in front and on top of cabinet.

Carrier internal testing

To ensure a long lifetime and proper operation, Carrier has defined internal standards for robustness and stress tests of a cabinet as well as components.

Static robustness test

To test the cabinet and shelf strength, all shelves are loaded with a certain weight for several days. The deflection of brackets and shelves is checked under load and after unloading the cabinet. Only if the cabinet deflection and deformation stay within the small tolerances defined by the Carrier quality department, the cabinet will be released to the market. With high requirements on cabinet stability and strength, Carrier ensures a high-quality product, safe and stable for years of operation.

Dynamic testing of doors and lids

The door opening test makes it possible to simulate several years of usage that our doors, hinges, and handles are likely to experience within just a few weeks. During the test, the system is continuously monitored and checked in terms of abrasion, break / damage and deformation. The system will only pass the internal qualification if it can resist several simulated years in the tough life of a supermarket.

For double glass doors, Carrier requires additional tests to ensure that the sealing works properly and the doors do not get condensation between the glasses after some years.

Packaging and shipping test

Before each serial launch, Carrier conducts a special packaging and transportation test. This happens with one or several cabinets in a truck going on a defined road with various road conditions. After the transport, the cabinet and the packaging are checked visually. This ensures that the cabinets will arrive to our customers in the same condition as they were packaged in the factory.

CE (Conformité Européenne) certification

The Carrier cabinets are compliant with the relevant standards or parts of the standards, as confirmed with the CE declaration of conformity:

- ISO 23953-1 (Refrigerated display cabinets, general)
- ISO 23953-2 (Refrigerated display cabinets, requirement)
- EN 60335-1 (Household and similar electrical appliances. Safety. General requirements)
- EN 60335-2-89 (safety requirement for households and similar electrical appliances, particularly for commercial refrigerating appliances)

To ensure maximum safety, all plug-in cabinets with flammable refrigerant are additionally CE certified by an independent body.

Factory certifications

All Carrier cabinet factories have a certified quality management and environnemental management systems

- EN ISO 9001 (General quality management system)
- EN ISO 14001 (Environmental management systems)

Plug-in & remote cabinets in comparison

We can split the refrigerated display cabinets into two types. Remote cabinets have a common central condensing system which supplies several units with the refrigerant. The cabinets have a fix location and are connected with pipes and wires to the central compressor rack and controller unit. Plug-in cabinets work like a household fridge and have the compressor, condenser and controller unit built into the cabinet itself. They only need a power supply. Both systems come with several advantages and trade-offs.

Plug-in system

Advantages:

- No piping / installation needed
- No machinery room
- Very flexible layout changes

Trade-offs:

- Head rejection in store (bigger air condition needed)
- Less space inside the cabinet
- Regular cleaning of condenser
- Higher energy consumption



Plug-in cabinet with characteristic machine compartment, which includes compressor, drip water evaporation and condenser.

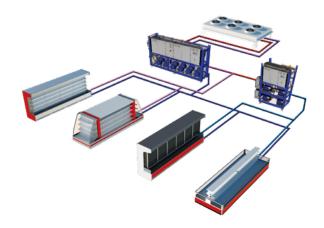
Remote system

Advantages:

- Lower system energy consumption
- Low-noise
- Large usable volume for products
- Wide range of multiplexing options
- Open Cabinet de-humidify store climate

Trade-offs:

- Installation needed
- Fixed installation, not flexible



Remote cabinets connected to the central rack with the gas cooler

Carrier's small store program

Carrier has developed a program that offers solutions for the specific conditions and requirements of small store formats. The chillers and freezer display cabinets in Carrier's small store program provide optimal presentation of food in limited retail space – small dimensioned and in homogeneous design.

A variety of lengths allow for the ideal adaptation of the cabinets to any given store dimensions (such as wall lengths). The combination of remote and plug-in solutions are well suited to the small store concept with building restrictions and are flexible enough to accommodate changes or enlargement of the refrigerated or frozen food range. Carrier's small store program has been designed with forthcoming environmental legislation in mind – both the remote as well as the plug-in cabinets can be operated with natural refrigerants.

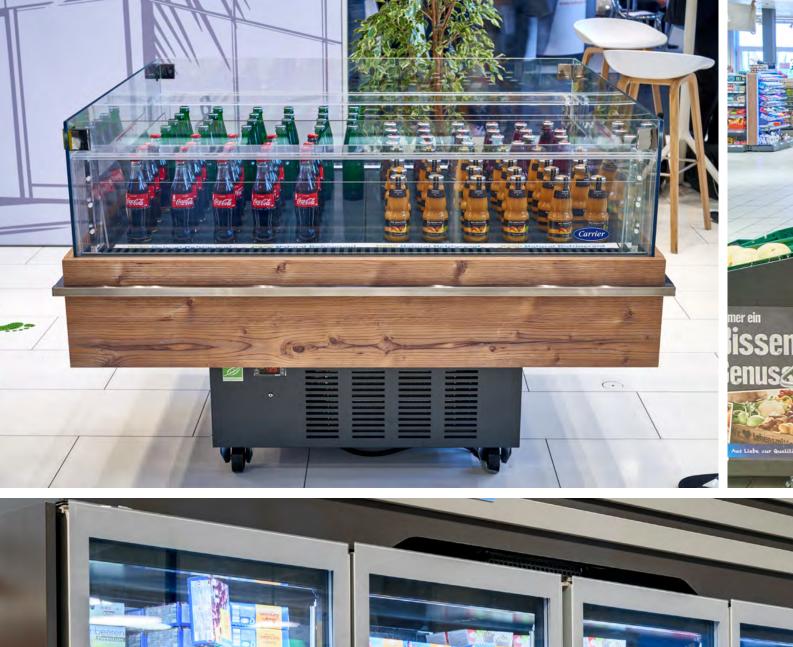


Remote and plug-in

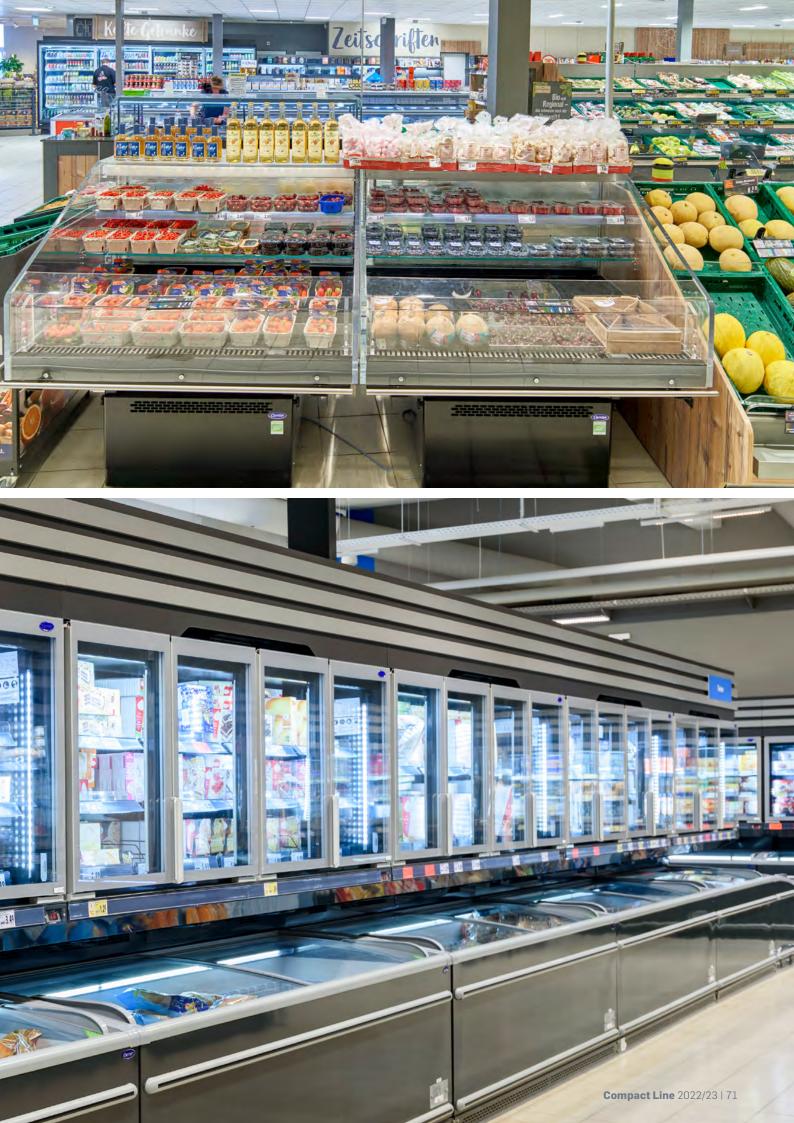
(Mendos® XU & Velando® CS)



(Velando® CS, Optimer® L & Optimer® LG)







Complete & Sustainable Refrigeration Solutions for Food Retailers

... Project Planning

- Display cabinets to maximize merchandising opportunities
- Energy and environmental impact consulting and analysis
- Optimal refrigeration technology solutions for each store type
- Complete project design and documentation

Product Development & Manufacturing

- Next-generation display cabinets to help increase sales
- Advanced refrigeration technology and integrated systems
- · Energy-efficient solutions for the system lifecycle
- · Sustainable natural refrigerant technologies









... Lifecycle Care

- Preventative maintenance program
- 24/7 call center and service assistance
- Remote monitoring to ensure optimized performance
- System modernization for improved efficiency

Installation

- · Approach tailored to unique customer requirements
- Experienced teams with standard work processes
- · A focus on quality throughout the process
- Limited on-site time for minimal business disruption





