

## Детали типов установок, типов магазинов и возможных хладагентов

ECO EFFICIENCY BETA (SUPERMARKET REFRIGERATION SYSTEMS)					@Honeywell 2021
System Architectures		Default Refrigerant Settings		Other Refrigerant Options	
		LT	MT		
1	Centralized	R404A	R404A	R448A	
2	Semi Distributed	R448A	R448A	R455A(in small size store)	
3	Distributed Air Cooled	R455A	R455A	R290	
4	Distributed Water Cooled	Propane	Propane	R455A	
5	Direct Expansion Cascade	CO2	R515B	R513A, R134a (in MT)	
6	CO2 Trans-Critical	CO2	CO2	-	
Store Size & Default Configurations		Area (m2)		<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <b>START</b> </div>	
1	Small	500			
2	Medium	2000			
3	Large	4000			
4	Hyper	8000			

- Store I
- Country **France**
- Argentina
  - Australia
  - Brazil
  - China
  - France
  - Germany
  - India
  - Italy**
  - Japan
  - India
  - Italy
  - Japan
  - Malaysia
  - Poland
  - Spain
  - UK
  - USA**

Eco Efficiency - Supermarket Refrigeration

Store Location and Size | System Details and Analysis | Sensitivity Analysis

**Store Location**  
Country **France** City **Paris**

**Store Size**  
Size **Small** Floor Area (sqm) **500**

MEDIUM TEMPERATURE (MT) SIDE

Typical MT Cases	Product Temperature	Capacity
<input checked="" type="checkbox"/> Multideck open	0 to 7 °C	11.9 to 19.3 kW
<input checked="" type="checkbox"/> Multideck closed	-2 to 4 °C	2.8 to 5.9 kW
<input type="checkbox"/> Semi vertical closed	2 to 6 °C	- to - kW
<input type="checkbox"/> Roll-in	2 to 8 °C	- to - kW
<input type="checkbox"/> Ultra-Freshness	-1 to 3 °C	- to - kW
<input checked="" type="checkbox"/> Counter	0 to 6 °C	1 to 1.7 kW

**Bin Temperature (DBT) - France/Paris**

**IMPORTANT NOTE:**  
Contact Honeywell if you do not see Temperature Bins in above screen

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Eco Efficiency - Supermarket Refrigeration

Store Location and Size | System Details and Analysis | Sensitivity Analysis

**Store Location**  
Country **UK** City **London**

**Store Size**  
Size **Small** Floor Area (sqm) **500**

MEDIUM TEMPERATURE (MT) SIDE

Typical MT Cases	Product Temperature	Capacity
<input checked="" type="checkbox"/> Multideck open	0 to 7 °C	11.9 to 19.3 kW
<input checked="" type="checkbox"/> Multideck closed	-2 to 4 °C	2.8 to 5.9 kW
<input type="checkbox"/> Semi vertical closed	2 to 6 °C	- to - kW
<input type="checkbox"/> Roll-in	2 to 8 °C	- to - kW
<input type="checkbox"/> Ultra-Freshness	-1 to 3 °C	- to - kW
<input checked="" type="checkbox"/> Counter	0 to 6 °C	1 to 1.7 kW
<input checked="" type="checkbox"/> Glass Door	0 to 4 °C	0.4 to 0.6 kW
<input checked="" type="checkbox"/> Storage room #MT 1	-1 to 2 °C	1.2 to 1.6 kW
<input checked="" type="checkbox"/> Storage room #MT 2	0 to 2 °C	1.1 to 1.5 kW
<input type="checkbox"/> Storage room #MT 3	6 to 8 °C	- to - kW
<input type="checkbox"/> Laboratory, dock #MT	8 to 12 °C	- to - kW

LOW TEMPERATURE (LT) SIDE

Typical LT Cases	Product Temperature	Capacity
<input checked="" type="checkbox"/> Island single row with lids	-18 to -24 °C	1.5 to 3.1 kW
<input type="checkbox"/> Island double row with lids	-18 to -24 °C	- to - kW
<input checked="" type="checkbox"/> Combi	-18 to -24 °C	1 to 1.6 kW
<input type="checkbox"/> Glass door	-18 to -24 °C	- to - kW
<input checked="" type="checkbox"/> Storage room #LT	-24 to -28 °C	1.4 to 1.6 kW

**Bin Temperature (DBT) - UK/London**

**IMPORTANT NOTE:**  
Contact Honeywell if you do not see Temperature Bins in above screen

Case Schematics

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Доступно несколько стран и городов  
 Детали конфигурации могут быть  
 настроены в соответствии с магазинами

Eco Efficiency - Supermarket Refrigeration

Store Location and Size | System Details and Analysis | Sensitivity Analysis

CHOOSE THE SYSTEMS

	MT SIDE	LT SIDE	BASELINE
1. Centralized	R404A	R404A	<input type="checkbox"/>
2. Semi Distributed	R455A	R455A	<input type="checkbox"/>
3. Distributed Air Cooled	R448A R455A		<input type="checkbox"/>
4. Distributed Water Cooled			<input type="checkbox"/>
5. Direct Expansion Cascade			<input type="checkbox"/>
6. CO2 Transcritical			<input type="checkbox"/>

LOAD SETUP

COMPRESSOR SETUP

PARAMETER SETUP

SIMULATION SETUP

RUN CALCULATIONS

CAPEX, OPEX & EMISSIONS

ECO-EFFICIENCY

Choose all Configurations

Default Refrigerants

**IMPORTANT NOTE:**  
 1. Always press RUN CALCULATIONS button if you change any of input  
 2. Always press CAPEX, OPEX & EMISSIONS button everytime you run calculations  
 3. Always press ECO-EFFICIENCY button everytime you run calculations

Press the blue color output tabs only after running the calculations

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Distributed (MT Rack 1)/Compressor Selection

Store Size: Small | 500 sqm

Target MT Load: 19.4 kW

Selected MT Compressor Load: 19.8 kW

MEDIUM TEMPERATURE (MT) RACK 1

REFRIGERANT: R455A | TYPE: Recp | COMPANY: Bitzer

Compressors	Count	COP	EN Rating	Capacity
Compressor #	0	3.1	4.6 kW	0 kW
Compressor #	1	3.2	8.3 kW	8.3 kW
Compressor #	1	3.3	11.6 kW	11.6 kW
Compressor #	0	3.4	21.4 kW	0 kW
Compressor #	0	3.5	29.8 kW	0 kW
Compressor #	0	3.5	40.3 kW	0 kW
Compressor #	0	3.3	54.4 kW	0 kW
Compressor #	0	3.3	76.8 kW	0 kW
Compressor #	0	3.2	93.6 kW	0 kW

CO2 Transcritical/Compressor Selection

Store Size: Small | 500 sqm

Target MT Load: 33 kW

Selected MT Compressor Load: 34.7 kW

Target LT Load: 6 kW

Selected LT Compressor Load: 6.4 kW

MEDIUM TEMPERATURE (MT) RACK

REFRIGERANT: R744 | TYPE: Recp | COMPANY: Bitzer

Compressors	Count	COP	EN Rating	Capacity
Compressor #	0	1.7	6.2 kW	0 kW
Compressor #	0	1.5	7.3 kW	0 kW
Compressor #	0	1.7	12 kW	0 kW
Compressor #	0	1.7	18.1 kW	0 kW
Compressor #	0	1.8	24 kW	0 kW
Compressor #	1	1.8	34.7 kW	34.7 kW
Compressor #	0	1.7	44.7 kW	0 kW
Compressor #	0	1.8	61.4 kW	0 kW
Compressor #	0	1.7	77.2 kW	0 kW

LOW TEMPERATURE (LT) RACK

REFRIGERANT: R744 | TYPE: Recp | COMPANY: Bitzer

Compressors	Count	COP	EN Rating	Capacity
Compressor #	1	3.3	2 kW	2 kW
Compressor #	0	4.2	2.7 kW	0 kW
Compressor #	1	4.2	4.4 kW	4.4 kW
Compressor #	0	4	5.7 kW	0 kW
Compressor #	0	4.5	8.8 kW	0 kW
Compressor #	0	4.5	11.2 kW	0 kW
Compressor #	0	4.7	16.4 kW	0 kW
Compressor #	0	4.7	21.5 kW	0 kW
Compressor #	0	4.7	27.2 kW	0 kW

Возможность установки фактических данных для каждого выбранного типа установки

Simulation Setup

SIMULATION PARAMETER	PARAMETER SETUP
REFRIGERANT PRICE	Setup
ELECTRICITY INTENSITY	Setup
ELECTRICITY PRICE	Setup
LIFE SPAN OF SYSTEM	Setup
LEAKAGE RATE	Setup

**Set to Default**  
Press the green colored button "Set to Default" first

**FIX BASE SIMULATION PARAMETERS**  
Press **FIX BASE SIMULATION PARAMETERS** button at last

Решающие критерии могут быть скорректированы в соответствии с реальной ситуацией в магазине

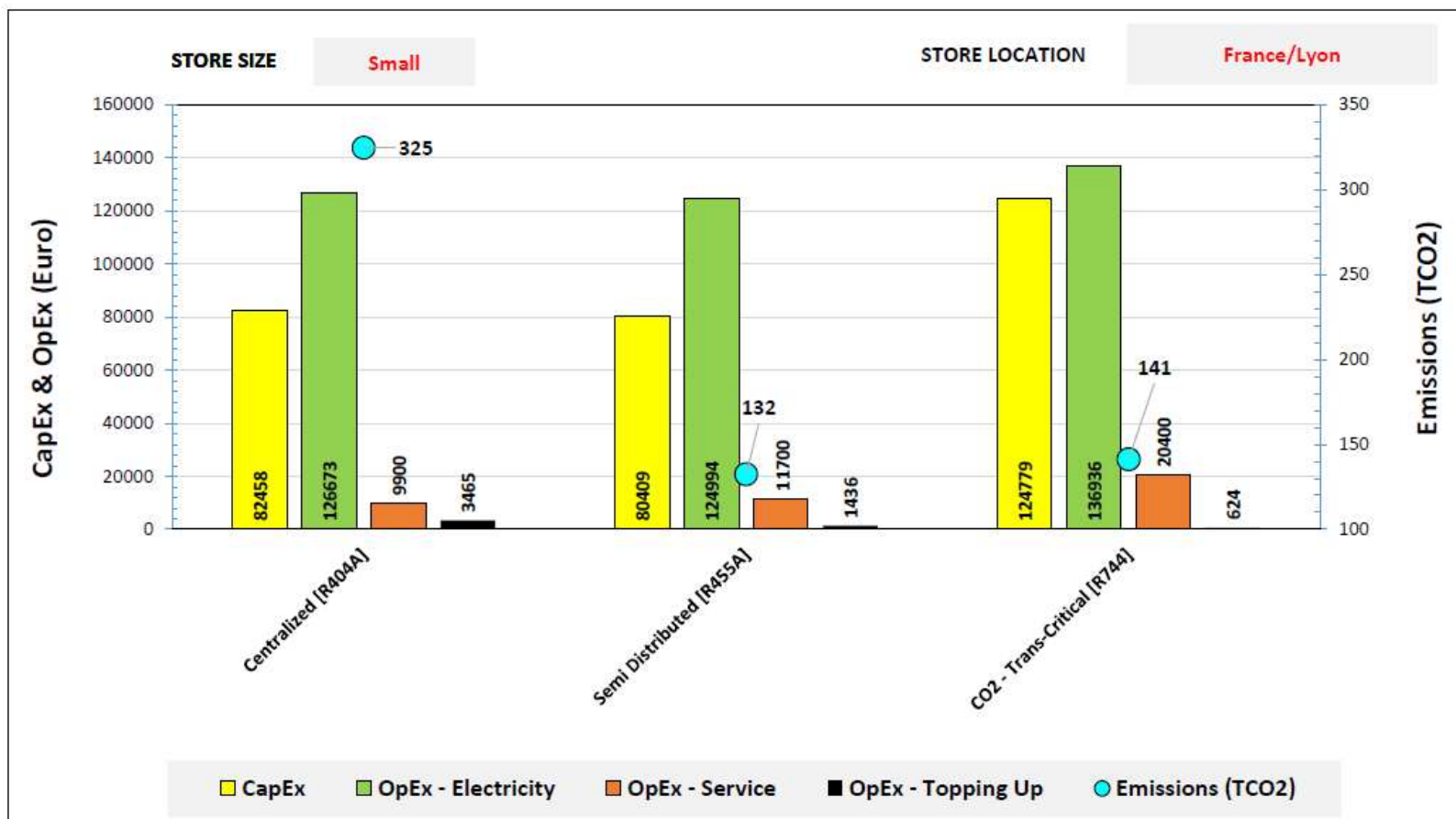
Base Leakage Rate

**SET BASE LEAKAGE RATE**

SYSTEM	VALUE (in %)
Centralized	0.1
Semi Distributed	0.05
Distributed Air Cooled	
Distributed Water Cooled	
Direct Expansion Cascade	
CO2 Transcritical	0.1



Визуализация затрат и воздействия на окружающую среду выбранных объектов в течение всего срока их службы



Расчеты основаны на годовой норме утечки 10% для R-404A и CO2 и 5% для R-455A

Сарех = стоимость установки / Орех = эксплуатационные расходы / Орех обслуживание = стоимость технического обслуживания / Орех долив = стоимость долива хладагента / Т CO2 выбросы = выбросы CO2, связанные с утечками (прямое воздействие) и электростанциями (косвенное воздействие).