



Savings, Performance, 3 Technologies

## NEW SILENSYS®

Silence to meet  
your highest expectation



*Tecumseh*



PISTON



ROTARY



SCROLL

Cooling for a Better Tomorrow™



# SILENSYS®

The first condensing unit which combines **silence and performance**, available in **3 technologies**.

The only manufacturer to master the 3 compressor technologies.



PISTON

Tecumseh proven compressor technology. Reliability and robustness characterize these reciprocating compressors. Tecumseh continues to lead the way by designing energy efficiency, quiet operation and reliability into every new reciprocating compressor we produce.



ROTARY

Rotary technology ensures optimum performance especially for small cooling capacities. This compressor technology allows energy saving (due to reduced electrical input power on a large evaporation range) and a low acoustic level with a small footprint. Ideally suited for demanding applications, its design gives it great strength.



SCROLL

Scroll technology ensures high efficiency for medium and high cooling capacities regardless of the operating regime. This technology allows significant energy savings and is ideal for demanding applications. Its design gives it great resistance to liquid flooding.

## SILENSYS®, a range of cutting edge products

With 50 years of experience in the refrigeration industry, world leader Tecumseh develops and devises high performance condensing unit solutions.

Tecumseh continues to innovate and launches in 2011 three new Silensys® condensing unit ranges.



## SILENSYS<sup>®</sup>, an innovative idea, French designed and manufactured

**MADE IN FRANCE**

Tecumseh Europe's R&D department and accredited laboratory guarantee performance levels and validated improvements.

This level of excellence is recognized by the leading accreditation and certification bodies:

- Laboratory COFRAC accreditation
- Compressor performance ASERCOM certification.

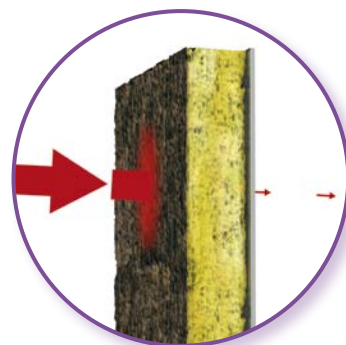


### Silensys<sup>®</sup>'s benefits

#### Acoustics

Silensys<sup>®</sup>, the ultra silent range, remains the acoustic reference on the market.

Decrease in sound power is **at least 50% on S, M and L** [-3 dB(A)] and **75% on size XL** [-6 dB(A)].



#### Energy efficiency

The Reciprocating range has been supplemented by two "High Efficiency" (HE) ranges, which integrate the new Rotary and Scroll compressors. With the addition of EC fan (motors) on some models Tecumseh further meets the needs to reduce energy consumption.

#### Coefficient of Performance (COP) improvement

- **Reciprocating technology:** on average +5%
- **Scroll technology:** on average +15%
- **Rotary technology:** on average +20%



#### Robustness and reliability

French made Silensys<sup>®</sup> condensing units are manufactured with **high quality components**.

Silensys<sup>®</sup> is designed to operate in a wide range of environments, including those with high ambient temperatures.



#### Installation and maintenance

Contents and functions of the new condensing units have been upgraded **in order to ease installation and maintenance**. Safety aspects have also been improved.

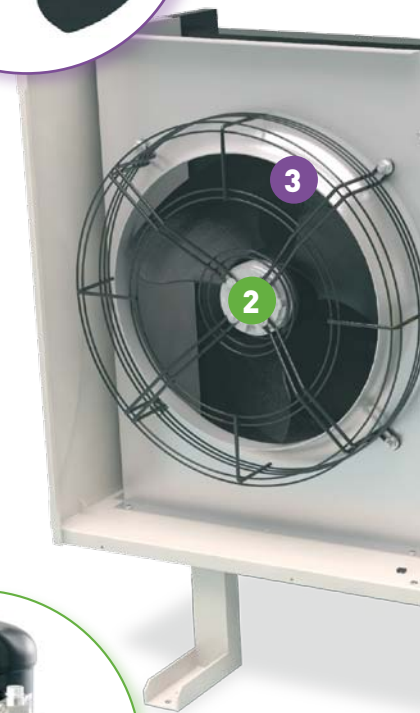


# SILENSYS® RANGE

## ACOUSTICS

### And the silence is

- 1 New fan blade design geometry
- 2 Added foam within the cover to encapsulate noise
- 3 Air flow optimization by adding a buffer around the fan
- 4 Noise transmission is further limited by the lateral double skin plastic door
- 5 Redesigned metal door frame for increased overall stiffness and reduced vibration
- 6 Discharge muffler line reduces the pulsations (depending on model)
- 7 Specific pipe-bending to reduce and absorb cooling circuit vibrations



## ENERGY EFFICIENCY

### Friendly power

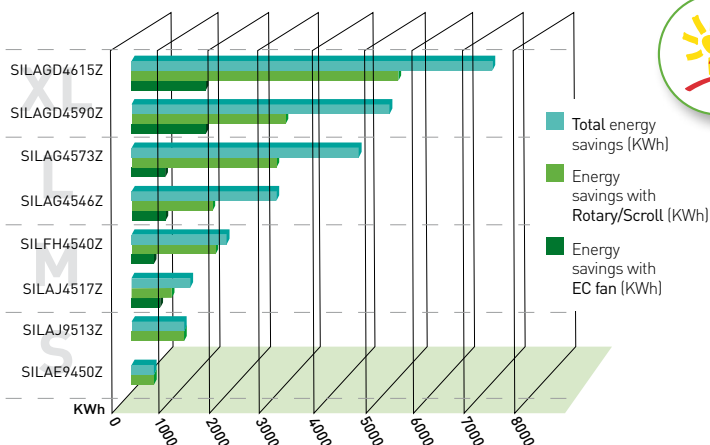
- 1 Reduced electrical input power with Rotary and Scroll technologies due to higher volumetric efficiency
- 2 Improved AC fan performance with permanent capacitor for S size
- 3 Fan speed regulator direct mounted on 3-way valve (or liquid receiver)



Rotary compressor



Scroll compressor



- In a condensing unit compressor power largely determines in the total power consumption
- Tecumseh has anticipated the Energy related Product (ErP) 2013/2015 directive requirements which sets minimum efficiency numbers for EC fans (permanent magnet motor)
- Digital controller on XL Scroll Silensys® for multiple evaporator capability
- Silensys®' condensers are devised to operate in High Ambient Temperature

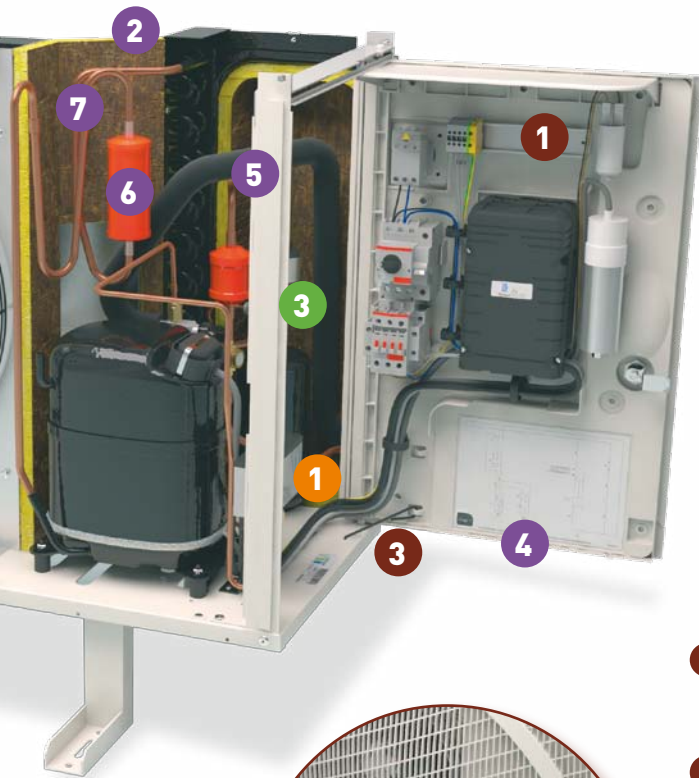


## What's new?

### ROBUSTNESS & RELIABILITY

## Built to last

- 1 Oil management: Silensys® ranges (Rotary, Reciprocating and Scroll) are equipped with an oil separator
- Check valve on cooling circuit for rotary compressors
- Oil equalization piping between 2 compressors (Silensys® DUO)
- IP44 Electrical Protection Class (resistant to water spray)
- Corrosion and UV-resistant condensing unit



### REGULATIONS - CERTIFICATIONS

Silensys® has anticipated the Energy related Product European directive (ErP), applicable for electrical motors placed in effect 2013 and 2015.

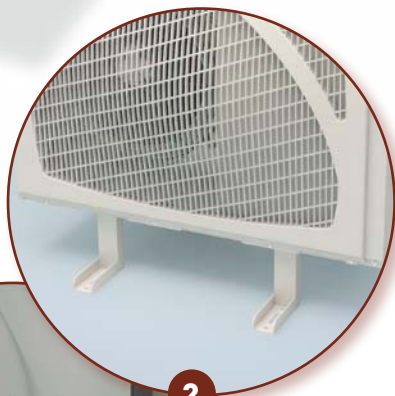
The ErP European directive sets minimum efficiency numbers for fans: applicable for fan input power > 125 W.

All Tecumseh fans are CE marked.

### INSTALLATION AND MAINTENANCE

## It could not be simpler

- 1 Rail DIN length increased to ease integration of additional components
- 2 Floor or wall setting installation (on S and M sizes)
- 3 90° open door lock
- Electrical safety reinforcement:
  - Power circuit breaker
  - Additional circuit breaker on EC fan motor
  - Internal or external overload on compressor
- Valve on liquid receiver for refrigerant capture during maintenance
- Easy removable front panel for accessibility (M, L and XL sizes)



### OPTIONS

- Fusible plug to protect over pressure
- Sightglass mount on liquid receiver
- HP/BP – HP pressure switch/ manual reset

# SILENSYS®

A range that meets all your needs

MODEL S

MODEL M

MODEL L

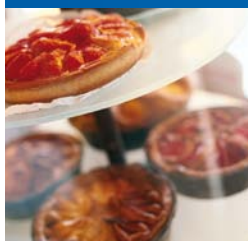


Volume

From S to L: 1 m<sup>3</sup> to 170 m<sup>3</sup>

Power

From S to L: 0,5 kW to 14 kW



Small business



Proximity stores/Bio medical



Petrol station



Whatever the volume to cool,  
a Silensys® product meets your needs:

**Applications:**

- Cold rooms
- Fermentation chambers
- Refrigerated cabinets
- Wine cellars
- Ice makers

**Segments:**

- Proximity food stores (small supermarket, petrol station, bakery, butcher's, delicatessen, fish shop...)
- Supermarkets
- Non food proximity stores

**Others:**

- Wine merchant, beer and wine bar, restaurants, community kitchen, biomedical units, morgue



## MODEL XL



XL: 170 m<sup>3</sup> to 400 m<sup>3</sup>

XL: 15 kW to 30 kW

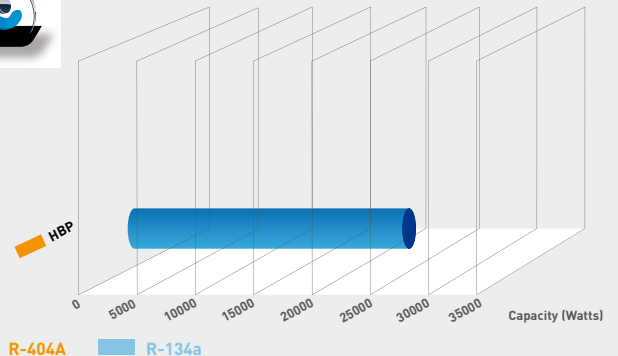
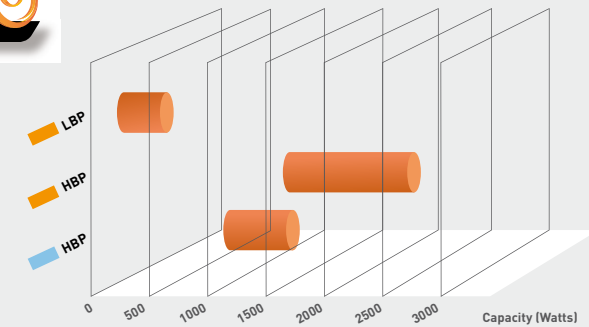
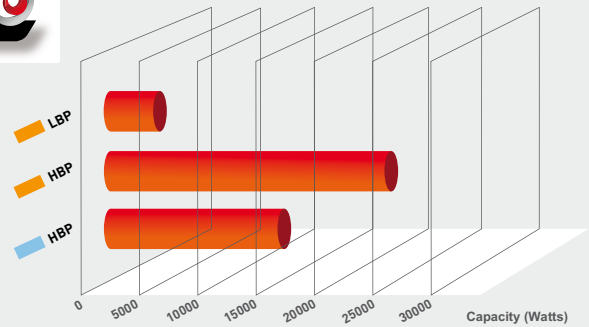


Mini markets /Discounter

### A piston range supplemented by a High Efficiency range

In order to reduce energy consumption and ensure greater efficiency, Tecumseh has developed an optimum range regardless the application.

This new product offer, which is part of the Tecumseh proactive approach for "eco-design", takes into account the environmental concern while ensuring silence and performance.



#### Rating conditions

EN 13215

	LBP	HBP
T° evaporating	-35 °C	+5 °C
T° Ambient	+32 °C	+32 °C
T° return gas (= evaporator outlet)	+20 °C	+20 °C
Sub-cooling	3K	3K



**PISTON**



VOL-TAGE CODE	Cooling capacity (Watts) EN13215 Return suction gas 20 °C										EN13215 Super heating 10K		Sound pressure 10 m	Sound pressure 5 m
	FZ TZ K	Ambient temperature	-20 °C	-15 °C	-10 °C	-5 °C	0 °C	5 °C	10 °C	15 °C	Cool. cap. (W) -10 °C	Power input (W)		
<b>SILAG4546Z</b>	TZ/KZ	25	4501	5714	7063	8522	10060	11642	13228	14778	6350	3094		
		32	3757	4875	6108	7434	8826	10257	11692	13101	5431	3082	37	43
		43	2629	3599	4649	5765	6932	8130	9338	10544	4038	3063		
<b>SILAG4553Z</b>	TZ/KZ	25	5060	6386	7855	9437	11100	12804	14511	16180	7071	3449		
		32	4270	5498	6839	8271	9768	11299	12831	14333	6092	3462	37	43
		43	3019	4107	5261	6471	7720	8990	10262	11526	4590	3482		
<b>SILAG4561Z</b>	TZ/KZ	25	5829	7268	8854	10555	12335	14153	15965	17727	7939	3904		
		32	4989	6329	7783	9328	10934	12568	14194	15778	6900	3927	37	43
		43	3630	4837	6106	7424	8773	10134	11487	12821	5288	3962		
<b>SILAG4568Z</b>	TZ/KZ	25	6995	8597	10370	12287	14317	16425	18574	20728	9318	4230		
		32	6062	7580	9236	11011	12879	14814	16786	18770	8207	4320	37	43
		43	4590	5972	7442	8992	10608	12278	13988	15741	6463	4461		
<b>SILAG4573Z</b>	TZ/KZ	25	7581	9302	11201	13243	15388	17592	19807	21983	10048	4740		
		32	6646	8244	9982	11834	13768	15748	17735	19691	8853	4802	37	43
		43	5119	6518	8002	9558	11166	12804	14451	16097	6933	4900		
<b>SILAGD4590Z</b>	TZ/KZ	25	8682	11106	13812	16755	19883	23134	26441	29733	12386	6100		
		32	7223	9425	11849	14458	17205	20036	22892	25716	10501	6087	44	50
		43	5023	6877	8863	10954	13113	15302	17486	19654	7663	6068		
<b>SILAGD4610Z</b>	TZ/KZ	25	9588	12170	15007	18039	21197	24400	27559	30588	13413	6955		
		32	8178	10568	13156	15890	18710	21545	24321	26967	11635	6923	44	50
		43	5947	8063	10283	12571	14883	17169	19382	21501	8903	6873		
<b>SILAGD4612Z</b>	TZ/KZ	25	10739	13341	16154	19110	22135	25152	28083	30863	14382	7770		
		32	9142	11529	14057	16664	19285	21855	24311	26616	12362	7799	44	50
		43	6546	8639	10759	12858	14892	16820	18636	20358	9221	7846		
<b>SILAGD4614Z</b>	TZ/KZ	25	12925	15632	18572	21685	24914	28215	31560	34948	16492	8647		
		32	11017	13536	16220	19019	21894	24819	27790	30857	14209	8780	44	50
		43	8018	10237	12517	14835	17182	19580	22118	24412	10648	8989		
<b>SILAGD4615Z</b>	TZ/KZ	25	13718	16609	19702	22922	26196	29459	32654	35758	17466	9583		
		32	11977	14572	17282	20037	22773	25435	27992	30469	15123	9658	44	50
		43	9192	11323	13434	15469	17388	19179	20905	21654	11436	9778		

Preliminary data.

\* Sound level at maximum speed ventilation  
 \*\* In: nominal current - Im: maximal current



## Tecumseh Europe: a commercial refrigeration specialist

A market leader in refrigeration & comfort cooling, Tecumseh Europe is part of the multinational Tecumseh Product Company. Tecumseh Europe designs and manufactures innovative compressors and condensing units specifically for commercial refrigeration applications. Currently, almost 25% of consumable food worldwide is wasted due to non respect of the cold chain. Based on this fact, Tecumseh offers high value-added products and a full product range.

### ■ Our values

For more than 77 years, Tecumseh's success has been based on shared company values:

- employees are our greatest asset
- a true customer service orientation
- the highest product quality & services
- perpetual technological innovation.

### ■ Tecumseh: People

This value comes from the professionalism of each employee, with strong technology, sales and industrial competency. Continuous training programs and internal promotion of talented employees guarantees a high level of commitment.

### ■ Tecumseh: Innovative products

Since 1934, Tecumseh has developed highly innovative products targeting high efficiency & high reliability.

Tecumseh in Europe is the only hermetic compressors manufacturers to provide a wide range of compressors in all three primary hermetic compressor technologies: **Reciprocating, Scroll & Rotary.**

### ■ Tecumseh: Known worldwide

Several key brands names such as Unité Hermétique®, Silensys®, Masterflux®, Celseon®, and Vector® are supported by more than 1,000 sales representatives and authorized wholesale distributors.

### ■ Tecumseh: Full range of services

Tecumseh proposes full support from product selection, **unit design, training, sales administration and technical support** on site.

### ■ Tecumseh: Green technology

Conscious of the economic and ecological stakes of tomorrow, **Tecumseh is committed to sustainable energy and efficiency development.** Tecumseh follows **ISO 14001** (environmental management system) as well as **ISO 9001** (quality management process).

With more than 1,350 employees, Tecumseh Europe is delivering on the promise of innovation, product quality and value. Tecumseh is fully customer focused toward being the best global commercial refrigeration supplier today and into the future.

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