



Savings, Performance, 3 Technologies

NEW SILENSYS®

Silence to meet
your highest expectation



Tecumseh

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[®], 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.

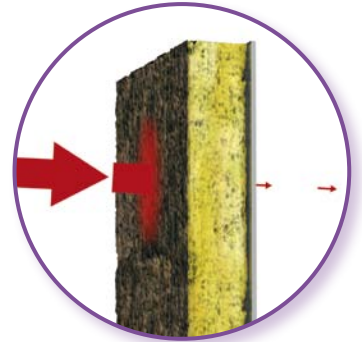


Silensys[®]'s benefits

Acoustics

Silensys[®], 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[®] condensing units are manufactured with **high quality components**.

Silensys[®] 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.

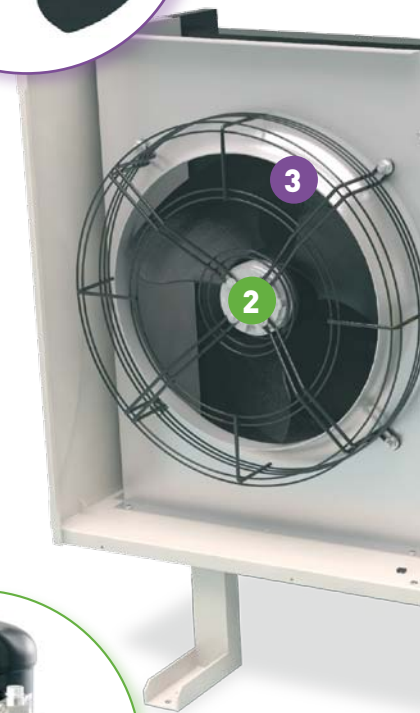


SILENSYS® RANGE

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

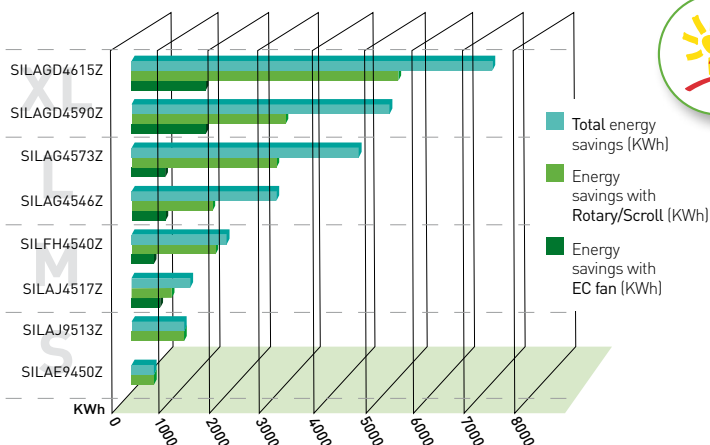
- 1 Reduced electrical input power with Rotary and Scroll technologies due to higher volumetric efficiency
- 2 Improved AC fan performance with permanent capacitor for S size
- 3 Fan speed regulator direct mounted on 3-way valve (or liquid receiver)



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

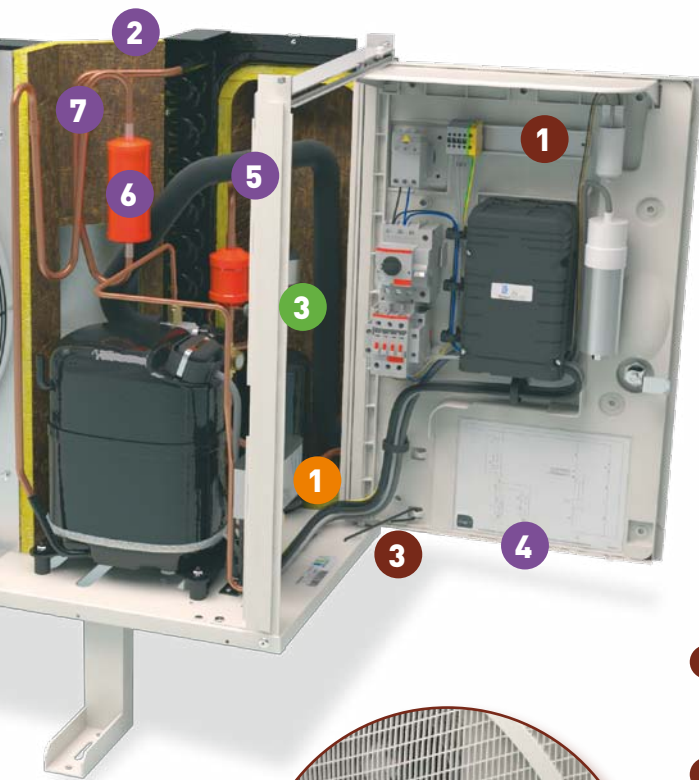


What's new?

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.

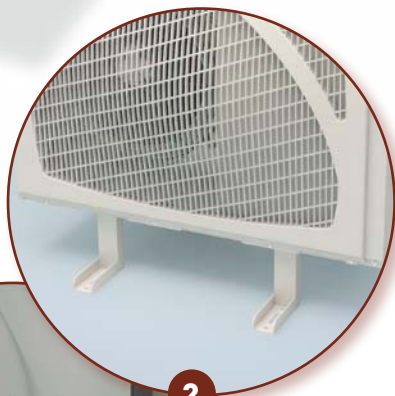
The ErP European directive sets minimum efficiency numbers for fans: applicable for fan input power > 125 W.

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 m³ to 170 m³

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 m³ to 400 m³

XL: 15 kW to 30 kW

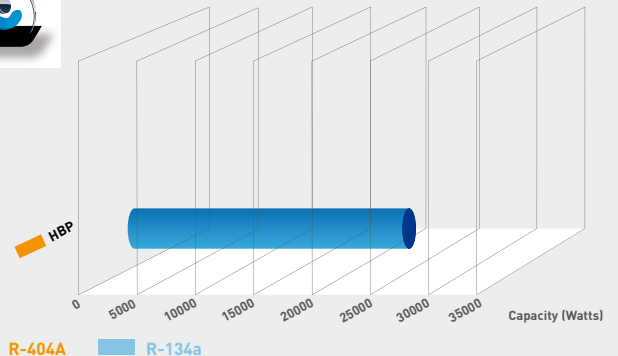
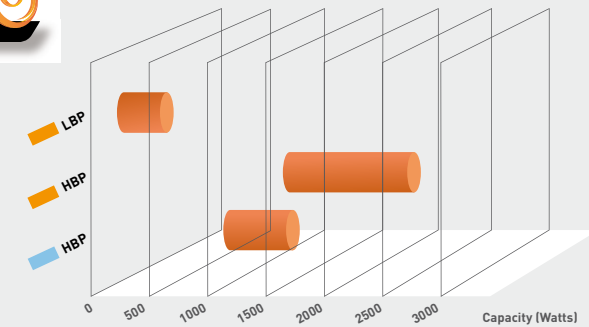
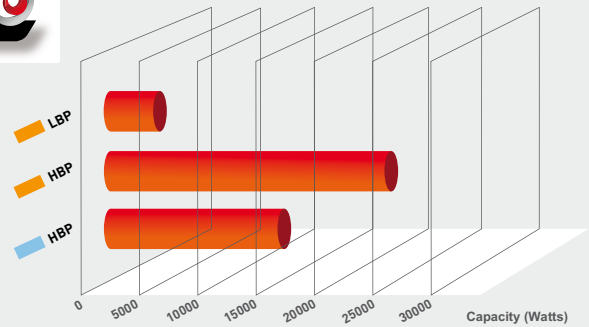


Mini markets /Discounter

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

	VOLTAGE CODE	Cooling capacity (Watts) EN13215 Return suction gas 20 °C								EN13215 Super heating 10K		Sound pressure 10 m	Sound pressure 5 m	
		FZ TZ KZ	Ambient temperature	-40 °C	-35 °C	-30 °C	-25 °C	-20 °C	-15 °C	-10 °C	Cool. cap. (W) -35 °C	Power input (W)	Acoustic* [dB(A)]	
	SILAJ2432Z	FZ/TZ	25	381	539	729	953	1210	1500	1823	445	492	27	33
			32	316	459	631	833	1065	1326	1617	370	483		
			43	214	333	475	641	833	1050	1291	255	470		
	SILAJ2440Z	FZ	25	453	622	824	1060	1330	1634	1972	510	570	28	34
			32	378	531	714	926	1169	1442	1746	426	564		
			43	269	398	550	726	927	1153	1405	304	555		
	SILAJ2446Z	FZ/TZ/KZ	25	589	799	1047	1333	1660	2028	2436	662	669	29	35
			32	491	679	898	1149	1433	1751	2103	569	667		
			43	346	500	675	872	1091	1333	1598	427	664		
SILAJ2464Z	FZ/TZ/KZ	25	821	1095	1416	1785	2199	2654	3145	901	888	30	36	
		32	705	956	1249	1583	1956	2365	2805	769	880			
		43	526	739	985	1264	1573	1910	2271	566	866			
	SILFH2480Z	FZ/TZ/KZ	25	1064	1480	1952	2474	3039	3636	4252	1211	1339	33	39
			32	862	1263	1711	2201	2726	3278	3844	1011	1308		
			43	525	902	1311	1750	2214	2696	3187	690	1260		
SILFH2511Z	FZ/TZ/KZ	25	1425	1973	2603	3313	4100	4958	5880	1609	1671	34	40	
		32	1161	1679	2269	2929	3658	4450	5299	1338	1611			
		43	736	1205	1729	2311	2948	3637	4374	915	1517			
	SILAG2516Z	TZ/KZ	25	2054	2918	3927	5081	6379	7822	9409	2392	2352	38	44
			32	1607	2410	3335	4379	5545	6831	8238	1930	2251		
			43	905	1612	2403	3277	4235	5275	6398	1230	2091		
SILAG2522Z	TZ/KZ	25	2530	3516	4629	5870	7239	8734	10357	2867	2616	39	45	
		32	2081	2986	4006	5141	6391	7755	9234	2379	2541			
		43	1376	2154	3028	3996	5059	6217	7469	1635	2423			
	SILAGD2532Z	TZ	25	4086	5561	7301	9306	11576	14110	16910	4524	4190	43	49
			32	3063	4500	6144	7994	10051	12314	14784	3577	4091		
			43	1456	2833	4326	5933	7655	9491	11442	2148	3935		
SILAGD2544Z	TZ	25	4786	6712	8845	11185	13732	16486	19446	5437	5109	44	50	
		32	3902	5659	7604	9737	12057	14565	17261	4470	4960			
		43	2512	4004	5653	7461	9426	11548	13828	3001	4725			

Preliminary data.

* Sound level at maximum speed ventilation

** In: nominal current - Im: maximal current

Sound power	Technical data				FZ Voltage code			TZ Voltage code			KZ Voltage code			Weight	
	Air flow (m ³ /h)	Liquid receiver volume (L)	For tubing O.D.		220V - 240V 50 Hz 1~			400V 50 Hz / 440V 60 Hz 3~			220V 50 Hz / 220V 60 Hz 3~			Gross (kg)	Net (kg)
			Suction	Liquid line	Power input (W)	In (A)**	Im (A)	Power input (W)	In (A)	Im (A)	Power input (W)	In (A)	Im (A)		
58	1650	1,5	1/2	1/4	483	2,2	6,8	541	1	2,7	-	-	-	88	67
59	1650	1,5	1/2	1/4	564	2,5	6,2	-	-	-	-	-	-	88	68
60	1650	1,5	1/2	3/8	667	3,1	8,4	647	1,5	3,4	659	3	6,1	89	69
61	1650	1,5	5/8	3/8	880	4,1	10,5	838	2	3,8	826	3,8	8,4	92	72
64	2700	2,35	5/8	1/2	1380	6,8	17,1	1257	3	5,9	1293	5	12,7	106	84
65	2700	2,35	5/8	1/2	1683	9,6	25,1	1530	3,7	6,1	1703	6,2	14,4	108	86
69	5400	6	7/8	3/8	-	-	-	2395	4,8	12	2609	9,3	26,9	144	129
70	5400	6	7/8	3/8	-	-	-	2685	6,2	14,7	3221	11,9	31,7	146	135
74	6600	9,5	1 1/8	5/8	-	-	-	4471	8,8	21,8	-	-	-	284	257
75	6600	9,5	1 1/8	5/8	-	-	-	5340	10,7	27,2	-	-	-	290	263

Old letter code	New letter code	Designation
F	FZ	220-240V-50Hz
/	XC	220-240V-50Hz
K	KZ	220V 3-50Hz 220V 3-60Hz
T	TZ	400V 3-50Hz 440V 3-60Hz
/	XG	380-420V 3-50Hz 460V 3-60Hz

Cooling capacity according EN 13215 conditions: suction gas 20 °C, sub cooling 3K, Ambient T° 32 °C.

Cooling performances are listed for single phase groups.

For three-phase groups in some cases they may be different.

Presentation of acoustic values of maximum fan speed in a straight line and according EN 13215.

In a constant effort to reconcile reported and actual acoustic values,

Tecumseh Europe meets the acoustic standard EN ISO 3743-1.

Silensys® is designed to operate in high ambient temperatures

[Ambient T° 46 °C].