

StarlettePlus-E

Refrigeration dryer series



The Parker StarlettePlus-E series of refrigerated dryers (SPE) is the perfect solution for efficient removal of water vapour from compressed air and combines quality and efficiency in a reliable design with the smallest impact on the environment and on the operating costs.

Developed around a state-of-the-art Aluminium heat exchanger (E-Pack), with a patent pending all-in-one design, featuring an air-to-air section, an air-to-refrigerant section, a highly efficient stainless steel demister separator and a moisture collection chamber, the new StarlettePlus-E series provides air quality with unrivalled running costs.

Thanks to the highly efficient E-Pack design, the refrigerant circuit absorbs lower power and uses less refrigerant charges than other comparable dryer, making StarlettePlus-E the range in the market with the lowest running costs and the smallest impact on the environment. All models are equipped as standard with a digital controller that provides features useful in the day-by-day operations of any application: dew point level indication, free voltage alarm contact, maintenance reminder and integral timed drain control. In addition, thanks to its dual frequency design, StarlettePlus-E is ready to operate either in 50Hz or 60Hz environments.



A StarlettePlus-E version, equipped with the Energy Save feature, is optionally available for the models from 2.6 m³/min (SPE026 - SPE100). When equipped with this feature, the SPE models will save additional energy at partial load by cycling the fridge compressor activity while cooling the inlet air using the cold reserve stored in the E-Pack mass. Removable panels and internal compo-

nent disposition makes service inspections and maintenance activity a simple task. A pass-through drain niche is also available on all SPE models, allowing easy access to the drain from both sides of the dryer without opening the unit and in particular when it is installed next to a wall or even hung on a wall, thanks to the ready available hanging points (up to model SPE018).

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Key Benefits:

- The range with the lowest Carbon Footprint on the market
- The lowest running costs and the lowest absorbed power in this range
- High efficiency all-in-one Aluminium Heat Exchanger ("E-Pack", patent pending)
- Minimum refrigerant charges (avg. 25% lower than comparable ranges)
- Dual-Frequency ready for 50 or 60Hz applications
- Digital controller with:
 - Free contact
 - Maintenance reminder
 - Drain control (timed mode)
- Wall-hang ready (up to model SPE018)
- Easy drain access from both sides
- Compact dimensions

Key Applications:

- Industrial and general air applications requiring a dew point not lower than 3 °C.
E.g.:
 - Manufacturing
 - Automotive
 - Textile, Wood, Glass industry
 - Surface treatment
 - Materials handling
 - Material forming
 - Mining

Scope of supply:

StarlettePlus-E dryer – supplied ready for installation with:

- Digital Controller
- Voltage Free alarm contact
- Maintenance reminder
- Integral timed drain
- Dual frequency 50 / 60 Hz ready

Optional:

- External Float or Electronic Capacitive Drain
- Energy Saving versions (from model SPE026)



A pass-through drain niche allows easy drain access from both sides



Equipped with digital controller



Optional pre-filter (not part of the standard scope of supply).

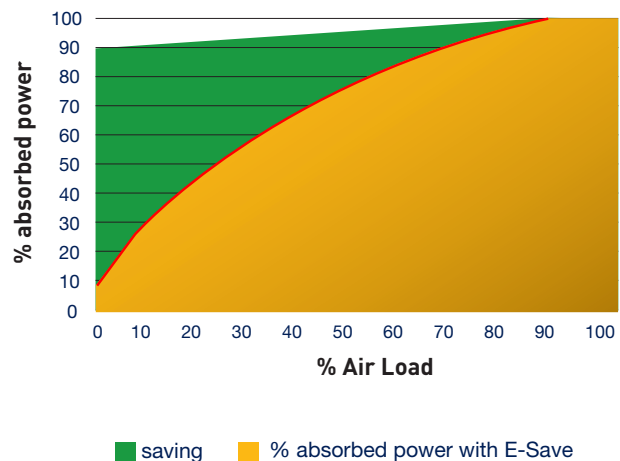
The Energy Save feature

Models from SPE026 to SPE100 can also be available in Energy Saving version (SPE026-ES - SPE100-ES).

The Energy Save feature allows the dryer to absorb lower power by controlling the periods of time the refrigerant compressor remains switched off.

During these periods, the lower load of compressed air is cooled down by the cold accumulated in the aluminium mass of the heat exchanger.

The diagram shows the absorbed power curve and the relevant saving at different loads when the Energy Save function is active.



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Ordering and performance data

Model	Order-No. Standard version	Air flow 50 Hz		Air flow 60 Hz		Abs. power kW		R134a charge Kg	Air connections BSPP-F
		m³/h	m³/min	m³/h	m³/min	50 Hz	60 Hz		
SPE 004	SPE004-A2301DF16TIS	24	0,4	28	0,47	0,13	0,16	0,14	1/2"
SPE 007	SPE007-A2301DF16TIS	42	0,7	47	0,78	0,14	0,17	0,15	1/2"
SPE 009	SPE009-A2301DF16TIS	54	0,9	60	1,00	0,15	0,19	0,15	1/2"
SPE 014	SPE014-A2301DF16TIS	84	1,4	96	1,60	0,15	0,18	0,17	3/4"
SPE 018	SPE018-A2301DF16TIS	108	1,8	124	2,07	0,16	0,20	0,18	3/4"
SPE 026	SPE026-A2301DF16TIS	156	2,6	176	2,93	0,29	0,36	0,33	1"
SPE 032	SPE032-A2301DF16TIS	192	3,2	218	3,63	0,3	0,37	0,34	1"
SPE 040	SPE040-A2301DF16TIS	240	4	272	4,53	0,31	0,38	0,35	1"
SPE 052	SPE052-A2301DF16TIS	312	5,2	361	6,02	0,46	0,56	0,39	1 1/2"
SPE 062	SPE062-A2301DF16TIS	372	6,2	429	7,15	0,57	0,69	0,4	1 1/2"
SPE 080	SPE080-A2301DF14TIS	480	8	555	9,25	0,73	0,90	0,74	1 1/2"
SPE 100	SPE100-A2301DF14TIS	600	10	689	11,48	0,74	0,91	0,75	1 1/2"

Reference conditions in accordance with DIN ISO 7183: air flow based on FAD 20 °C / 1 bar A, 7 bar_g working pressure, 25 °C cooling air temperature, 35 °C air inlet temperature and +3°C pressure dewpoint. All models supplied with refrigerant R134a.

Operating range

Site Selection	Frost-free indoor installation in a non-hazardous environment
Ambient Temperature	5 to 50 °C
Compressed air inlet temperature	5 to 65 °C
Operating pressure range	2 to 16 bar _g – SPE004-062; 2 to 14 bar _g – SPE080-100
Medium	Compressed air and gaseous nitrogen

Electrical connections

Mains Voltages	230V, 1-phase, 50 Hz and 60Hz (dual frequency ready)
Protection class	IP22

Materials of construction

Heat Exchanger fridge section	All-in-one "E-Pack" Aluminium heat exchanger with Stainless Steel demister
Refrigerant fluid	R134a

Pressure vessel approvals

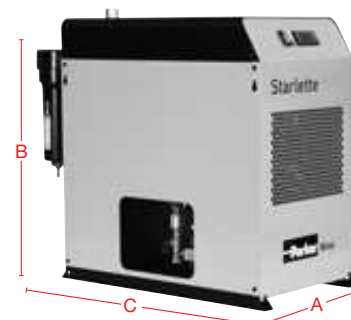
EU	Approval for fluid group 2 in accordance with the Pressure Equipment Directive 2014/68/EU
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Quality assurance

Development/Manufacturing	ISO 9001, ISO 14001, OHSAS 18001
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Dimensions and weight

Model	A Width mm	B Height mm	C Depth mm	Weight kg	Model	A Width mm	B Height mm	C Depth mm	Weight kg
SPE 004	300	520	400	24	SPE 032	400	650	630	46
SPE 007	300	520	400	24	SPE 040	400	650	630	47
SPE 009	300	520	400	25	SPE 052	400	650	630	53
SPE 014	330	580	550	35	SPE 062	400	650	630	55
SPE 018	330	580	550	36	SPE 080	450	840	780	80
SPE 026	400	650	630	46	SPE 100	450	840	780	80



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Correction factors for SPE model selection at 50Hz /60 Hz

Inlet Temperature (°C)	30	35	40	45	50	55	60	65
Correction Factor CFIT 50/60 Hz	0,83 0,85	1 1	1,30 1,32	1,61 1,61	2,00 2,04	2,33 2,56	2,38 2,63	2,50 2,78
Working Pressure (bar_g)	3	5	7	9	11	13	15	16
Correction Factor CFP 50/60 Hz	1,35 1,45	1,11 1,11	1 1	0,85 0,85	0,81 0,81	0,77 0,77	0,72 0,73	0,71 0,71
Ambient Temperature (°C)	20	25	30	35	40	45	50	
Correction Factor CFAT 50/60 Hz	0,93 0,96	1 1	1,02 1,06	1,09 1,11	1,15 1,18	1,22 1,25	1,28 1,33	
Pressure Dew Point (°C)	+3	+5	+7					
Correction Factor CFD 50/60 Hz	1 1	0,78 0,79	0,70 0,72					

Calculate Minimum Drying Capacity =
System Flow x CFIT x CFAT x CFP x CFD and select dryer from table above

Example: air flow 190 m³/h, 50 Hz, operating pressure 9bar_g, 40 °C inlet T, 30 °C ambient T, at 3 °C pdp

- 1) Find the correction factors above: 9 bar_g = 0,85; 40 °C inlet = 1,30; 30 °C ambient = 1,02; 3 °C pdp = 1
- 2) Calculate the required capacity: 0,85 x 1,30 x 1,02 = 1,13; 190 x 1,13 = 215 m³/h; 215/60 = 3,6 m³/min
- 3) Select the model with the closest nominal capacity: model **SPE040**

Product Key

Series	Flow *10 (m ³ /min)	Condenser	Electrical Voltage, phase, Dual-Frequency	Max Operating Pressure (bar _g)	Drain Type	Plug Type	Energy Saving version
SPE	004 to 062	A	230 1 DF	16	TI, EX or FH	S	-
SPE	026 to 062	A	230 1 DF	16	EX	S	ES ⁽¹⁾
SPE	080 to 100	A	230 1 DF	14	TI, EX or FH	S	-
SPE	080 to 100	A	230 1 DF	14	EX	S	ES ⁽¹⁾

⁽¹⁾Option available only from model SPE026

Examples

SPE	014	A	2301DF	16	TI	S	
SPE model for 1,4 m ³ /min, air cooled, 230 V, 1-phase, dual-frequency 50/60 Hz power supply, max 16 bar _g operating pressure, equipped with integral timed-drain, Schuko plug							
SPE	052	A	2301DF	16	EX	S	
SPE model for 5,2 m ³ /min, air cooled, 230 V, 1-phase, dual-frequency 50/ 60 Hz power supply, max 16 bar _g operating pressure, equipped with external electronic capacitive drain, Schuko plug							
SPE	080	A	2301DF	14	FH	S	
SPE model for 8,0 m ³ /min, air cooled, 230 V, 1-phase, dual-frequency 50/60 Hz power supply, max 14 bar _g operating pressure, equipped with external float drain, Schuko plug							
SPE	062	A	2301DF	16	EX	S	ES
SPE model for 6,2 m ³ /min, air cooled, 230 V, 1-phase, dual-frequency 50/60 Hz power supply, max 16 bar _g operating pressure, equipped with external capacity drain, Energy Saving model version, Schuko plug							