

# CDAS / OFAS / FBP Compressed Air Treatment Systems

## Vacuum Assisted Heatless Low Energy Variants

CDAS LE 100 - CDAS LE 170  
OFAS LE 100 - CDAS LE 170  
FBP LE 100 - CDAS LE 170

## Engineering Data Sheet



## TECHNICAL SPECIFICATIONS - CDAS LE / OFAS LE / FBP LE MODELS 100 to170

### Dryer Performance - Outlet Dewpoint & ISO 8573-1:2010 Air Purity Classifications

DRYER RANGE	PRESSURE DEWPOINT (STANDARD)		ISO 8573-1:2010 WATER CLASSIFICATION	PRESSURE DEWPOINT (OPTIONAL)		ISO 8573-1:2010 WATER CLASSIFICATION	PRESSURE DEWPOINT (OPTIONAL)		ISO 8573-1:2010 WATER CLASSIFICATION
	°C	°F	(STANDARD)	°C	°F	(OPTIONAL)	°C	°F	(OPTIONAL)
CDAS LE 100 - CDAS LE 170	-40	-40	Class 2.2.2	-70	-100	Class 2.1.2	-20	-4	Class 2.3.2
OFAS LE 100 - OFAS LE 170	-40	-40	Class 2.2.0	-70	-100	Class 2.1.0	-20	-4	Class 2.3.0
FBP LE 100 - FBP LE 170	-40	-40	Class 1.2.0	-70	-100	Class 1.1.0			

ISO8573-1 Classifications only when used with the included Parker OIL-X pre / post filtration

### Important Note Regarding -70°C (-100°F) Dewpoint.

A compressed air dryer supplying a pressure dewpoint of -70°C (-100°F) requires a different desiccant fill to dryers supplying a standard -40°C / -20°C pressure dewpoint. During shipping, desiccant material adsorbs atmospheric moisture. Following installation, commissioning and initial operation, the dryer will start to "dry down" until it provides the desired -70°C (-100°F). Once achieved, the dryer will continue to supply air at the required dewpoint, however it is important to note that the dry down period may take several days / weeks to achieve the -70°C (-100°F) dewpoint.

### Technical Data

DRYER RANGE	MIN OPERATING PRESSURE		MAX OPERATING PRESSURE		MIN OPERATING TEMP		MAX OPERATING TEMP		MAX AMBIENT TEMP		ELECTRICAL SUPPLY (STANDARD)	ELECTRICAL SUPPLY (OPTIONAL)	THREAD TYPE	NOISE LEVEL
	BAR G	PSI G	BAR G	PSI G	°C	°F	°C	°F	°C	°F				dB(A)
CDAS LE 100 - 170														
OFAS LE 100 - 170	5	73	13	190	5	41	50	122	55	131	400V +/-10% 3PH 50Hz	460V +/-10% 3PH 60Hz	BSPP or NPT	<75
FBP LE 100-170														

## Controller Functions

DRYER MODEL	CONTROLLER FUNCTION							
	TOUCH SCREEN + PLC CONTROLLER	INLET PRESSURE, TEMP & OUTLET DEWPOINT MONITORING	DDS ENERGY SAVING TECHNOLOGY	FILTER & DRYER SERVICE INDICATORS	WEB INTERFACE VIA RJ45 ETHERNET	IIOT CONNECTIVITY	4-20MA OUTPUTS X2	FAULT ALARM RELAYS X2
CDAS LE								
OFAS LE	•	•	•	•	•	•	•	•
FBP LE								

RELATIVE HUMIDITY	55%
IP RATING	IP44, Indoor Use Only
POLLUTION DEGREE <sup>1</sup>	2
NOISE	<75 dB(A)

<sup>1</sup> Pollution Degree 2 indicates that in order for this equipment to operate safely, only non-conductive pollution (i.e. solids, liquids or ionised gases) or temporary condensation may be present within the environment.

## Flow Rates

DRYER MODELS	Pipe Size BSPP OR NPT	INLET FLOW RATE			
		L/S	M <sup>3</sup> /MIN	M <sup>3</sup> /HR	CFM
CDAS LE 100 / OFAS LE 100 / FBP LE 100	2"	113	6.81	408	240
CDAS LE 100 / OFAS LE 110 / FBP LE 110	2"	170	10.22	612	360
CDAS LE 100 / OFAS LE 120 / FBP LE 120	2½"	213	12.75	765	450
CDAS LE 100 / OFAS LE 130 / FBP LE 130	2½"	283	17	1020	600
CDAS LE 100 / OFAS LE 140 / FBP LE 140	2½"	354	21	1275	750
CDAS LE 100 / OFAS LE 150 / FBP LE 150	2½"	425	26	1530	900
CDAS LE 100 / OFAS LE 160 / FBP LE 160	3"	496	30	1785	1050
CDAS LE 100 / OFAS LE 170 / FBP LE 170	3"	567	34	2040	1200
2x CDAS LE 140 / OFAS LE 140 / FBP LE 140	2½"	708	43	2550	1500
2x CDAS LE 150 / OFAS LE 150 / FBP LE 150	2½"	850	51	3060	1800
2x CDAS LE 160 / OFAS LE 160 / FBP LE 160	3"	992	60	3570	2100
2x CDAS LE 170 / OFAS LE 170 / FBP LE 170	3"	1133	68	4080	2400
3x CDAS LE 150 / OFAS LE 150 / FBP LE 150	2½"	1275	77	4590	2700
3x CDAS LE 160 / OFAS LE 160 / FBP LE 160	3"	1488	89	5355	3150
3x CDAS LE 170 / OFAS LE 170 / FBP LE 170	3"	1700	102	6120	3600

Stated flows are for operation at 7 bar (g) (102 psi g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other pressures, apply the correction factors shown below.

## Product Selection & Correction Factors

For correct operation, compressed air dryers must be sized using for the maximum (summer) inlet temperature, maximum (summer) ambient temperature, minimum inlet pressure, required outlet dewpoint and maximum flow rate of the installation.

To select a dryer, first calculate the MDC (Minimum Drying Capacity) using the formula below then select a dryer from the flow rate table above with a flow rate equal to or above the MDC.

$$\text{Minimum Drying Capacity} = \text{System Flow} \times \text{CFMIT} \times \text{CFMAT} \times \text{CFMIP} \times \text{CFOD}$$

### CFMIT - Correction Factor Maximum Inlet Temperature

MAXIMUM INLET TEMPERATURE	°C	25	30	35	40	45	50
	°F	77	86	95	104	113	122
CORRECTION FACTOR		1.00	1.00	1.00	1.04	1.14	1.37

### CFMAT - Correction Factor Maximum Ambient Temperature

MAXIMUM AMBIENT TEMPERATURE	°C	25	30	35	40	45	50
	°F	77	86	95	104	113	122
CORRECTION FACTOR		1.00	1.00	1.00	1.00	1.00	1.00

### CFMIP - Correction Factor Maximum Inlet Pressure

MAXIMUM INLET PRESSURE	BAR G	5	6	7	8	9	10	11	12	13
	PSI G	73	87	100	116	131	145	160	174	189
CORRECTION FACTOR		1.33	1.14	1.00	0.89	0.80	0.73	0.67	0.62	0.57

### CFOD - Correction Factor Dewpoint

MAXIMUM INLET TEMPERATURE	°C	-20	-40	-70
	°F	-4	-40	-100
CORRECTION FACTOR		0.91	1.00	1.43

**Important Note:** -20°C outlet dewpoint not available for FBP products as this dewpoint does not inhibit the growth of micro-organisms

### Included with CDAS LE / OFAS LE / FBP LE Purification System

PURIFICATION TECHNOLOGY / ACCESSORY	INCLUDED IN CDAS LE PACKAGE	INCLUDED IN OFAS LE PACKAGE	INCLUDED IN FBP LE PACKAGE
OIL-X Grade AO General Purpose Coalescing Filter	●	●	●
OIL-X Grade AA High Efficiency Coalescing Filter	●	●	●
Vacuum Assisted Heatless Low Energy (LE) Adsorption Dryer	●	●	●
OVR Oil Vapour Reduction Filter		●	●
OIL-X Grade AO General Purpose Dry Particulate Filter	●	●	●
OIL-X Grade AA High Efficiency Dry Particulate Filter			●
Vacuum Valve	●	●	●
3m Vacuum hose + Fittings	●	●	●

### Filter Models Included with CDAS LE Models 100 - 170

DRYER MODEL	FILTER CONNECTIONS BSP OR NPT	DRYER INLET		DRYER OUTLET		
		GENERAL PURPOSE PRE-FILTER	HIGH EFFICIENCY FILTER	OIL VAPOUR REDUCTION FILTER	GENERAL PURPOSE DRY PARTICULATE FILTER	HIGH EFFICIENCY DRY PARTICULATE FILTER
CDAS LE 100	2"	AOPX040H	AAPX040H	-	AOPX040H	-
CDAS LE 110	2"	AOPX040H	AAPX040H	-	AOPX040H	-
CDAS LE 120	2½"	AOPX045I	AAPX045I	-	AOPX045I	-
CDAS LE 130	2½"	AOPX045I	AAPX045I	-	AOPX045I	-
CDAS LE 140	2½"	AOPX050I	AAPX050I	-	AOPX050I	-
CDAS LE 150	2½"	AOPX050I	AAPX050I	-	AOPX050I	-
CDAS LE 160	3"	AOPX055J	AAPX055J	-	AOPX055J	-
CDAS LE 170	3"	AOPX055J	AAPX055J	-	AOPX055J	-

## Filter Models Included with OFAS LE Models 100 - 170

DRYER MODEL	FILTER CONNECTIONS BSPP	DRYER INLET		DRYER OUTLET		
		GENERAL PURPOSE PRE-FILTER	HIGH EFFICIENCY FILTER	OIL VAPOUR REDUCTION FILTER	GENERAL PURPOSE DRY PARTICULATE FILTER	HIGH EFFICIENCY DRY PARTICULATE FILTER
OFAS LE 100	2"	AOPX040H	AAPX040H	OVRP350H	AOPX040H	-
OFAS LE 110	2"	AOPX040H	AAPX040H	OVRP400H	AOPX040H	-
OFAS LE 120	2½"	AOPX045I	AAPX045I	OVRP400I	AOPX045I	-
OFAS LE 130	2½"	AOPX045I	AAPX045I	OVRP400I	AOPX045I	-
OFAS LE 140	2½"	AOPX050I	AAPX050I	OVRP450I	AOPX050I	-
OFAS LE 150	2½"	AOPX050I	AAPX050I	OVRP450I	AOPX050I	-
OFAS LE 160	3"	AOPX055J	AAPX055J	OVRP500J	AOPX055J	-
OFAS LE 170	3"	AOPX055J	AAPX055J	OVRP500J	AOPX055J	-

## Filter Models Included with FBP LE Models 100 - 170

DRYER MODEL	FILTER CONNECTIONS BSPP	DRYER INLET		DRYER OUTLET		
		GENERAL PURPOSE PRE-FILTER	HIGH EFFICIENCY FILTER	OIL VAPOUR REDUCTION FILTER	GENERAL PURPOSE DRY PARTICULATE FILTER	HIGH EFFICIENCY DRY PARTICULATE FILTER
FBP LE 100	2"	AOPX040H	AAPX040H	OVRP350H	AOPX040H	AAPX040H
FBP LE 110	2"	AOPX040H	AAPX040H	OVRP400H	AOPX040H	AAPX040H
FBP LE 120	2½"	AOPX045I	AAPX045I	OVRP400I	AOPX045I	AAPX045I
FBP LE 130	2½"	AOPX045I	AAPX045I	OVRP400I	AOPX045I	AAPX045I
FBP LE 140	2½"	AOPX050I	AAPX050I	OVRP450I	AOPX050I	AAPX050I
FBP LE 150	2½"	AOPX050I	AAPX050I	OVRP450I	AOPX050I	AAPX050I
FBP LE 160	3"	AOPX055J	AAPX055J	OVRP500J	AOPX055J	AAPX055J
FBP LE 170	3"	AOPX055J	AAPX055J	OVRP500J	AOPX055J	AAPX055J

## Filtration Performance - Parker OIL-X

FILTRATION PERFORMANCE	GENERAL PURPOSE PRE-FILTER	HIGH EFFICIENCY FILTER	OIL VAPOUR REDUCTION FILTER	GENERAL PURPOSE DRY PARTICULATE FILTER	HIGH EFFICIENCY DRY PARTICULATE FILTER
FILTRATION GRADE	Grade A0	Grade AA	Grade OVR	Grade A0	Grade AA
FILTRATION TYPE	Coalescing	Coalescing	Adsorption	Dry Particulate	Dry Particulate
PARTICLE REDUCTION (INC WATER & OIL AEROSOLS)	Down to 1 micron	Down to 0.01 micron	N/A	Down to 1 micron	Down to 0.01 micron
MAXIMUM REMAINING OIL AEROSOL CONTENT AT 21 °C	≤0.5 mg/m <sup>3</sup> (≤0.5 ppm(w))	≤0.01 mg/m <sup>3</sup> (≤0.01 ppm(w))	N/A	N/A	N/A
MAXIMUM REMAINING OIL VAPOUR CONTENT AT SYSTEM TEMPERATURE	N/A	N/A	≤0.003 mg/m <sup>3</sup> (≤0.003 ppm(w))	N/A	N/A
FILTRATION EFFICIENCY	99.925%	99.9999%	N/A	99.925%	99.9999%

REQUIRED IN ADDITION TO ABOVE - TO BE ORDERED SEPARATELY	CDAS LE 100 - CDAS LE 170 OFAS LE 100 - OFAS LE 170 FBP LE 100 - FBP LE 170
Vacuum assist pump (CDAS LE / OFAS LE / FBP LE Models 100 - 170) (Parker HLVAP Vacuum Pump recommended - see table)	•
OIL-X Grade WS (Optional - installation dependent)	•
Inlet / Outlet Piping (Parker Transair aluminium piping recommended)	•

### \* Important Note

CDAS LE 100 - CDAS LE 170 / OFAS LE 100 - OFAS LE 170 / FBP LE 100 - FBP LE 170 will not function in Low Energy mode without a vacuum assist pump. Pump must be ordered separately along with CDAS LE / OFAS LE / FBP LE Purification system.

## Vacuum Pump Part Number & kW

DRYER MODEL	kW @ 50Hz	kW @ 60Hz
HLVAP-OL-02-100	3	3.6
HLVAP-OL-02-110	3	3.6
HLVAP-OL-02-120	4	4.8
HLVAP-OL-02-130	5.5	6.6
HLVAP-OL-02-140	5.5	6.6
HLVAP-OL-02-150	7	8.4
HLVAP-OL-02-160	8.5	10.2
HLVAP-OL-02-170	9.5	11.4

Dryer & vacuum pump to be ordered separately.

Each dryer model has a corresponding HLVAP vacuum assist pump

For Example, a CDAS LE 150 would be matched to an HLVAP-OL-02-150 pump kit

HLVAP-OL-02-100 to HLVAP-OL-02-140 = Single Pump

HLVAP-OL-02-150 to HLVAP-OL-02-170 = Duplex Pump  
(Duplex = 2 x pumps supplied on frame)

Multi-bank dryer installations require multiple vacuum pumps.

For example, 3 x OFAS LE 170 requires 3 x HLVAP-OL-02-170 pumps or alternatively consider connection to a centralised vacuum system.

# PARKER GSFE APPROVALS, ACCREDITATIONS AND ASSOCIATIONS



## CDAS LE / OFAS LE / FBP LE MODELS 100 TO 170 3<sup>RD</sup> PARTY PERFORMANCE VERIFICATION

Purification Technology	Range Name / Filtration Grade	Tested in Accordance With		
Liquid Separator	OIL-X Grade WS	ISO 8573-9		
Coalescing Filters	OIL-X Grade AO & Grade AA	ISO 12500-1	ISO 8573-2	ISO 8573-4
Adsorption Dryer	CDAS / OFAS / FBP HL & LE	ISO 7183		
Adsorption Filter	OIL-X Grade OVR	ISO 8573-5		
Dry Particulate Filters	OIL-X Grade AO & Grade AA	ISO 8573-4		



Performance validation independently verified by LRQA (Formerly Lloyds Register)

## CDAS LE / OFAS LE / FBP LE MODELS 100 TO 170 DELIVERED AIR PURITY

Dryer Range	Delivered Air Purity				Materials of Construction Compliance / Exemption	
	Standard	Option 1	Option 2	BCAS BPG 102-1 Direct Contact & In-direct Applications	FDA Title 21 Compliance	EC 1935/2004 Exemption
CDAS HL & LE	ISO 8573-1:2010 Class 2:2:2	ISO 8573-1:2010 Class 2:1:2	ISO 8573-1:2010 Class 2:3:2	✗	✗	✗
OFAS HL & LE	ISO 8573-1:2010 Class 2:2:0*	ISO 8573-1:2010 Class 2:1:0*	ISO 8573-1:2010 Class 2:3:0*	✗	✗	✗
FBP HL & LE	ISO 8573-1:2010 Class 1:2:0*	ISO 8573-1:2010 Class 1:1:0*	Not Available	✓	✓	✓

\* Class 0 <0.003mg/m<sup>3</sup> Total Oil

## Materials of Construction

COMPONENT	MATERIAL
Dryer Inlet & Outlet Flanges 2" & 2.5"	Machined EN AW-6082 T6
Dryer Inlet & Outlet Flanges 3"	Machined EN AW-6082 T6
Dryer Inlet Manifolds, Columns, Outlet Manifolds and Inlet / Outlet Valve Blocks	Aluminium Extrusion EN AW-6063 T6
Manifold End Plates	Cast Machined EN AW-6082 T6
Inlet, Outlet and Exhaust Valve Block End Plates	Cast Machined EN AC-44100-F
Inlet and Exhaust Cylinders	Aluminium Alloy
Silencer Baffle and End Cap	Aluminium
Dryer Feet	8MM Steel Plate
Control Shroud & Door	16SWG Mild Steel
Hygrometer Housing	GR316 – BS970
Fittings	Nickel Plated Brass and Nickel Plated Mild Steel
Pressure Gauges	ABS Plastic casing and dial, brass connector and movement
Dryer Adsorbent (Desiccant) -20°C PDP / -40°C PDP	Activated Alumina and 13X MS
Dryer Adsorbent (Desiccant) -70°C PDP	13X MS and WS 2050 Silica Gel
Seal Materials	Nitrile, Viton, EPDM, PTFE (tape)
Paint	Dry Powder Epoxy Coating
Exhaust Strike Plate	Mild Steel
Vacuum Pump Shut Off Valve	Brass / aluminium
Vacuum Pump Hose	Rubber 83% / Wire Helix 13% / Reinforcement 4%
Vacuum Pump Hose Fittings	Mild steel
Coalescing Filter Housing	Aluminium
Coalescing Filter Element	Glass Filled Nylon Endcaps / Stainless Steel Support Cylinders / Borosilicate Glass Nano fibre media / Polyester Needle felt drainage layer
Coalescing Filter Float Drain	Brass / Plastic
Dry Particulate Filter Housing	Aluminium
Dry Particulate Filter Element	Glass Filled Nylon Endcaps / Stainless Steel Support Cylinders / Borosilicate Glass Nano fibre media / Polyester Needle felt drainage layer
Dry Particulate Filter Manual Drain	Chrome / Nickel Plated Brass
Adsorption Filter Inlet Manifolds, Columns, Outlet Manifolds and Inlet / Outlet Blocks	Aluminium Extrusion EN AW-6063 T6
Adsorption Filter Manifold End Plates	Cast Machined EN AW-6082 T6
Adsorption Filter Inlet & Outlet Flanges 2" & 2.5"	Machined EN AW-6082 T6
Adsorption Filter Inlet & Outlet Flanges 2" & 2.5"	Machined EN AW-6082 T6
Adsorption Filter Inlet & Outlet Flanges 3"	Machined EN AW-6082 T6
Adsorption Filter Cartridges (Tubes)	Aluminium
Adsorption Filter Cartridge (End caps)	Aluminium LM-6 (top) / Nylon (bottom)
Adsorption Filter Cartridge (Adsorbent)	Granular Activated Carbon

# PRODUCT APPROVALS - ELECTRICAL

## Safety and Electromagnetic Compatibility

This equipment has been tested and complies with the following Standards:

EN 60204-1:2018 - Safety of machinery. Electrical equipment of machines. General requirements.

EN61326-1: 2013 & 2021 editions - Electrical Equipment for Measurement, Control, and Laboratory use, EMC Requirements.

EN 55011:2016 + A1:2017 - Industrial, scientific and medical equipment. Radio-frequency disturbance characteristics. Limits and methods of measurement.

Region / Country	Directive	Standards Used		
Europe	LVD 2014/35/EU	EN 61010-1:2010/A1:2019		
	EMC 2014/30/EU	EN 61326-1: 2013	EN 61326-1: 2021	EN 55011:2016 +A1:2017
	Machines 2006/42/EU	EN 61204-1 :2018		
Australia	RCM	EN 61326-1 accepted by AMCA as meeting EMC requirement		
USA	TUV us	UL 61010-1:2010/A1:2019		
	FCC	CFR 47 Part 15B		

# PRODUCT APPROVALS - PRESSURE VESSEL

Region / Country	Directive	Standards Used	Additional Information		
UK & Europe	PED 2014/68/EU	Generally in accordance with ASME VIII Div 1:2023.	PED Modules Used Module B + D	PED Certificate Number 50351	Notified Body Number: 0525 LRQA Deutschland GmbH Curienstraße 1, D-20095 Hamburg, Deutschland
Australia	Australian Standard	AS1210:2010			
Singapore	MOM	Generally in accordance with ASME VIII Div 1 : 2023.			
United States of America	ASME	Generally in accordance with ASME VIII Div 1 : 2023.			

## INTERNAL INSPECTION OF PRESSURE VESSELS

### Statement of design, manufacture and conformity assessment:

All Parker Hannifin Manufacturing Ltd, Gas Separation and Filtration Division, modular aluminium construction, compressed air adsorption filters, compressed air adsorption dryers, nitrogen gas generators and CO<sub>2</sub> purifiers have been designed, manufactured, and assessed as pressure vessels under the Pressure Equipment Directive, 2014/68/EU.

### Recommendations for periodic inspection

The recommendation is that the following inspection periods are adopted when modular aluminium construction compressed air dryers and nitrogen gas generators are deemed to be pressure vessels under National Legislation.

### Modular Aluminium Construction Compressed Air Dryers:

Modular aluminium construction compressed air dryers are manufactured from extruded aluminium alloy which is surface treated with a Tri-chrome passivation process and coated externally with a dry powder epoxy coating. Consequently, when used for drying compressed air, and following the manufacturers recommended maintenance schedule which includes the desiccant change schedule, there should be no significant corrosion.

The design life of the modular aluminium construction compressed air dryer is 10 years. There should be no need for an internal inspection to be carried out during this period.

### Modular Aluminium Construction Adsorption Filters:

Modular aluminium construction compressed air adsorption filters are manufactured from extruded aluminium alloy which is surface treated with a Tri-chrome passivation process and coated externally with a dry powder epoxy coating. Consequently, when used for treating compressed air, and following the manufacturers recommended maintenance schedule which includes the desiccant change schedule, there should be no significant corrosion.

The design life of the modular aluminium construction compressed air adsorption filter is 10 years. There should be no need for an internal inspection to be carried out during this period.

### Using Products Beyond 10 Years

Lifetime of adsorbent desiccant material is typically 60 months. Lifetime of adsorbent activated carbon is typically 12 months. Should the working life of the modular aluminium construction compressed air dryer and adsorption filter be extended beyond 10 years, the adsorbent materials should be replaced. It is recommended that an internal inspection be carried out at the same time.

Local legislation and codes should be followed in conjunction with a competent person.



# CDAS / OFAS / FBP Models 100 to 170 - Internal Volumes

Unlike traditional welded steel pressure vessels, the pressure envelope of CDAS / OFAS / FBP models 100 - 170 is made up of multiples of extruded aluminium drying columns, bolted to extruded aluminium inlet and outlet manifolds and sealed with o-ring's and/or gaskets. All pressure containing extrusions have an internal diameter below 150mm (6"). The total internal volume of each dryer model can be found on the dryer rating label. The total and individual column / manifold internal volumes can be found below.

Range	Model	Dryer Total Internal Volume (L)	No. of Drying Columns	No. of Individual Drying Chambers	Total Column Chamber Volume (L)	Top Manifold Volume (L)	Bottom Manifold Volume (L)	PED Category	PED Module
CDAS LE OFAS LE FBP LE	100	97	2	4	88	4.5	4.5	IV	B+D
	110	146	3	6	132	7	7	IV	B+D
	120	170	3	6	156	7	7	IV	B+D
	130	225	4	8	208	8.5	8.5	IV	B+D
	140	281	5	10	260	10.5	10.5	IV	B+D
	150	335	6	12	312	11.5	11.5	IV	B+D
	160	392	7	14	364	14	14	IV	B+D
170	447	8	16	416	15.5	15.5	IV	B+D	

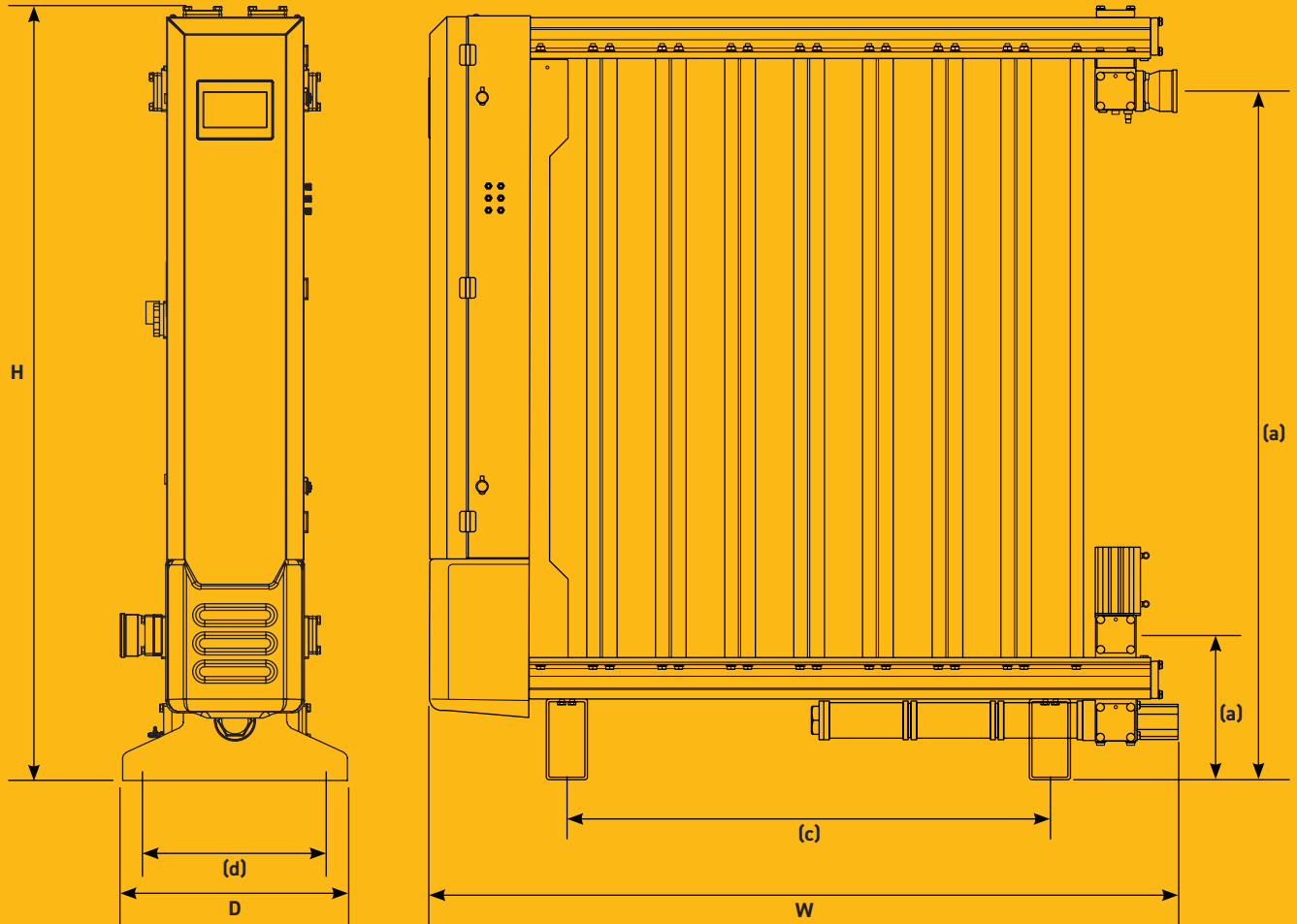
Range	Model	Designed to Code (or Standard)	Minimum Operating Pressure	Maximum Operating Pressure	Maximum Design Pressure	Burst Pressure	Minimum Operating Temperature	Maximum Operating Temperature	Minimum Design Temperature	Maximum Operating Temperature	Number of Cycles
CDAS LE OFAS LE FBP LE	100	Generally in Accordance with ASME VIII Div 1	5 bar g 72.5 psi g	13 bar g 188 psi g	13 bar g 188 psi g	84.5 bar g 1225 psi g	2°C 35.6°F	55°C 131°F	2°C 35.6°F	55°C 131°F	1 Million
	110										1 Million
	120										1 Million
	130										1 Million
	140										1 Million
	150										1 Million
	160										1 Million
170	1 Million										

OFAS & FBP Models Include an OVR Adsorption Filter for the reduction of oil vapour. OVR models are also made up of multiples of extruded aluminium drying columns, bolted to extruded aluminium inlet and outlet manifolds and sealed with o-ring's and/or gaskets.

Range	Model	OVR Total Internal Volume (L)	No. of Columns	No. of Individual Drying Chambers	Total Column Chamber Volume (L)	Top Manifold Volume (L)	Bottom Manifold Volume (L)	PED Category	PED Module
OVR	OVRP300	17	1	1	12	2.5	2.5	III	B+D
	OVRP350	34	1	2	24	5	5	III	B+D
	OVRP400	60	2	4	48	6	6	III	B+D
	OVRP450	87	3	6	72	7.5	7.5	IV	B+D
	OVRP500	114	4	8	96	9	9	IV	B+D
	OVRP550	140	5	10	120	10	10	IV	B+D

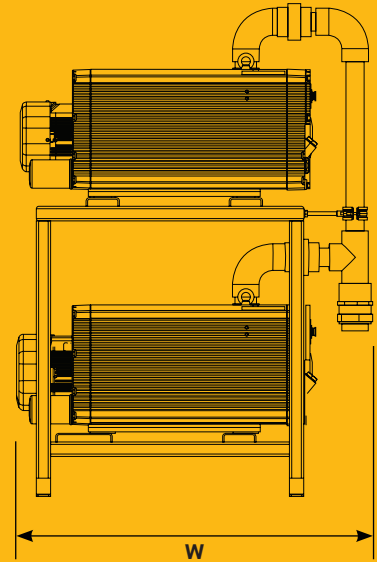
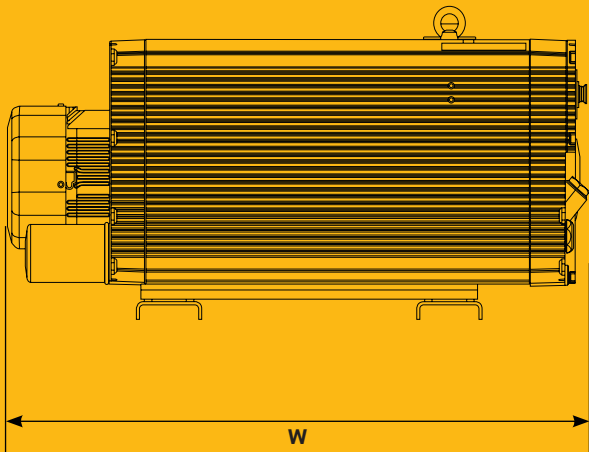
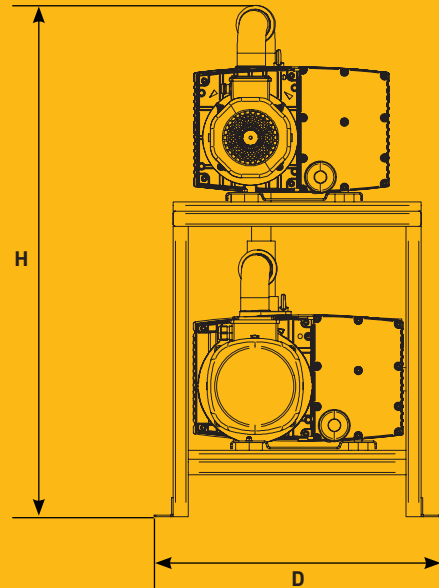
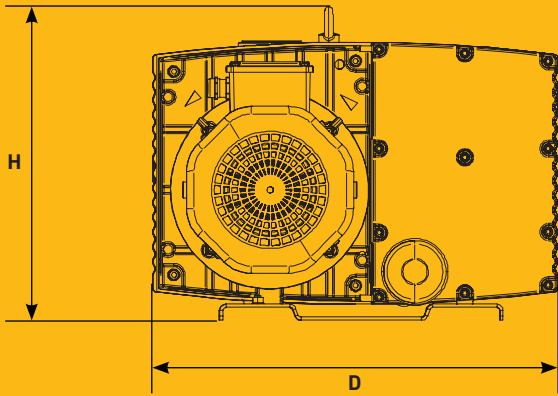
Range	Model	Designed to Code (or Standard)	Minimum Operating Pressure	Maximum Operating Pressure	Maximum Design Pressure	Burst Pressure	Minimum Operating Temperature	Maximum Operating Temperature	Minimum Design Temperature	Maximum Operating Temperature	Number of Cycles
OVR	OVRP300	Generally in Accordance with ASME VIII Div 1	3 bar g 44 psi g	16 bar g 232 psi g	16 bar g 232 psi g	88.3 bar g 1222.3 psi g	2°C 35.6°F	50°C 122°F	2°C 35.6°F	50°C 122°F	4000
	OVRP350					4000					
	OVRP400					4000					
	OVRP450					4000					
	OVRP500					4000					
	OVRP550					4000					

# CDAS LE / OFAS LE / FBP LE WEIGHTS AND DIMENSIONS



DRYER MODEL	DRYER DIMENSIONS														WEIGHT	
	H		W		D		(a)		(b)		(c)		(d)		KG	LBS
	MM	INS	MM	INS	MM	INS	MM	INS	MM	INS	MM	INS	MM	INS		
CDAS LE / OFAS LE / FBP LE 100	1672	65.8	816	32.1	550	21.7	360	14.2	1462	57.6	169	6.7	500	19.7	217	478
CDAS LE / OFAS LE / FBP LE 110	1672	65.8	987	38.9	550	21.7	360	14.2	1462	57.6	338	13.3	500	19.7	277	611
CDAS LE / OFAS LE / FBP LE 120	1917	75.5	987	38.9	550	21.7	360	14.2	1707	67.2	338	13.3	500	19.7	372	820
CDAS LE / OFAS LE / FBP LE 130	1917	75.5	1156	45.5	550	21.7	360	14.2	1707	67.2	507	20.0	500	19.7	464	1023
CDAS LE / OFAS LE / FBP LE 140	1917	75.5	1325	52.2	550	21.7	360	14.2	1707	67.2	676	26.6	500	19.7	555	1224
CDAS LE / OFAS LE / FBP LE 150	1917	75.5	1494	58.8	550	21.7	360	14.2	1707	67.2	845	33.3	500	19.7	646	1424
CDAS LE / OFAS LE / FBP LE 160	1917	75.5	1663	65.5	550	21.7	360	14.2	1707	67.2	1014	39.9	500	19.7	739	1629
CDAS LE / OFAS LE / FBP LE 170	1917	75.5	1832	72.1	550	21.7	360	14.2	1707	67.2	1183	46.6	500	19.7	830	1830

# VACUUM PUMP WEIGHTS AND DIMENSIONS



HLVAP-OL-02-100 to HLVAP-OL-02-140

HLVAP-OL-02-150 to HLVAP-OL-02-170

VACUUM PUMP MODEL	VACUUM PUMP DIMENSIONS						WEIGHT	
	H		W		D		KG	LBS
	MM	INS	MM	INS	MM	INS		
HLVAP-OL-02-100	354	13.9	835	32.9	510	20.1	119	262.3
HLVAP-OL-02-110	354	13.9	835	32.9	510	20.1	119	262.3
HLVAP-OL-02-120	354	13.9	854	33.6	510	20.1	128	282.2
HLVAP-OL-02-130	354	13.9	946	37.2	510	20.1	171	377.0
HLVAP-OL-02-140	354	13.9	946	37.2	510	20.1	171	377.0
HLVAP-OL-02-150	1320	52.0	980	38.6	650	25.6	287	632.7
HLVAP-OL-02-160	1320	52.0	1070	42.1	650	25.6	330	727.5
HLVAP-OL-02-170	1320	52.0	1070	42.1	650	25.6	339	747.4

## Purge Air (Regeneration Air) Requirement

CDAS LE / OFAS LE / FBP LE use clean dry purge air for regeneration.

**Purge Volume Required (LE Variants) : 3% of the dryers 7 bar g, 35°C Flow Rate**

Dryer Model	Dryer Flow @ 7 bar g, 35°C	Purge Volume Required
	M <sup>3</sup> /HR	M <sup>3</sup> /HR
CDAS LE 100 OFAS LE 100 FBP LE 100	408	12.2
CDAS LE 110 OFAS LE 110 FBP LE 110	612	18.4
CDAS LE 120 OFAS LE 120 FBP LE 120	765	23.0
CDAS LE 130 OFAS LE 130 FBP LE 130	1020	30.6
CDAS LE 140 OFAS LE 140 FBP LE 140	1275	38.3
CDAS LE 150 OFAS LE 150 FBP LE 150	1530	45.9
CDAS LE 160 OFAS LE 160 FBP LE 160	1785	53.6
CDAS LE 170 OFAS LE 170 FBP LE 170	2040	61.2

CDAS LE / OFAS LE / FBP LE dryers can also operate in heatless fall back mode (without vacuum assisted purge). The purge value must be reset for this mode to deliver the required outlet dewpoint. During HL heatless mode, the purge volume will be as per the table below.

**Purge Volume Required (LE Variants in HL mode) : 20% of the dryers 7 bar g, 35°C Flow Rate**

Dryer Model	Dryer Flow @ 7 bar g, 35°C	Purge Volume Required
	M <sup>3</sup> /HR	M <sup>3</sup> /HR
CDAS HL 100 OFAS HL 100 FBP HL 100	408	82
CDAS HL 110 OFAS HL 110 FBP HL 110	612	122
CDAS HL 120 OFAS HL 120 FBP HL 120	765	153
CDAS HL 130 OFAS HL 130 FBP HL 130	1020	204
CDAS HL 140 OFAS HL 140 FBP HL 140	1275	255
CDAS HL 150 OFAS HL 150 FBP HL 150	1530	306
CDAS HL 160 OFAS HL 160 FBP HL 160	1785	357
CDAS HL 170 OFAS HL 170 FBP HL 170	2040	408

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