

# OIL-X Compressed Air Filters

## Oil Vapor Reduction

### Engineering Data Sheet



## FILTRATION PERFORMANCE

FILTRATION GRADE	FILTER TYPE	PARTICLE REDUCTION	MAX REMAINING OIL CONTENT AT 21°C (70°F)	INITIAL DRY DIFFERENTIAL PRESSURE	INITIAL SATURATED DIFFERENTIAL PRESSURE	FILTRATION EFFICIENCY	ADSORBANT LIFE	PRECEDE WITH GRADE
OVR	Oil Vapour Reduction	Not Applicable	≤ 0.003 mg/m <sup>3</sup> ≤ 0.003 ppm(w)	<350 mbar <5 psi	Not Applicable	Not Applicable	*12 Months	AO + AA

\* At system operating temperature and when corrected to match systems conditions.



## ISO 8573-1:2010 Classification

When preceded with OIL-X Coalescing Filters Grade AO & Grade AA upstream of the OVR, the delivered air purity downstream of the OVR in meets and exceeds the following ISO 8573-1:2010 Classifications:

ISO 8573-1 Class 0 Total Oil (<0.003mg/m<sup>3</sup>)

ISO 8573-1 Class 1 Total Oil

## TECHNICAL DATA

FILTRATION GRADE	FILTER MODELS	MIN OPERATING PRESSURE		MAX OPERATING PRESSURE		MIN RECOMMENDED OPERATING TEMP		MAX RECOMMENDED OPERATING TEMP	
		BAR G	PSI G	BAR G	PSI G	°C	°F	°C	°F
OVR	P300H to P550I	1	15	16	232	2	35	50	122

# FLOW RATES

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.

MODEL	PIPE SIZE	L/S	M <sup>3</sup> /MIN	M <sup>3</sup> /HR	CFM	REPLACEMENT CARTRIDGE	NO.	DIFFERENTIAL PRESSURE (OVR ONLY)							
								100% FLOW		75% FLOW		50% FLOW		25% FLOW	
								MBAR	PSI	MBAR	PSI	MBAR	PSI	MBAR	PSI
OVRP300H <b>G</b> XX	2"	80	4.8	289	170	P300OVR	1	350	5.1	198	2.9	46	0.7	11	0.2
OVRP350H <b>G</b> XX	2"	163	9.8	586	345	P350OVR	1	350	5.1	198	2.9	46	0.7	11	0.2
OVRP400I <b>G</b> XX	2 1/2"	326	19.6	1172	690	P400OVR	1	350	5.1	198	2.9	46	0.7	11	0.2
OVRP450I <b>G</b> XX	2 1/2"	488	29.4	1758	1035	P450OVR	1	350	5.1	198	2.9	46	0.7	11	0.2
OVRP500I <b>G</b> XX	2 1/2"	651	39.2	2345	1380	P500OVR	1	350	5.1	198	2.9	46	0.7	11	0.2
OVRP550I <b>G</b> XX	2 1/2"	814	48.9	2931	1725	P550OVR	1								
2 x OVRP550I <b>G</b> XX	2 1/2"	1629	97.9	5862	3451	P550OVR	2								
3 x OVRP550I <b>G</b> XX	2 1/2"	2443	146.8	8793	5176	P550OVR	3								
4 x OVRP550I <b>G</b> XX	2 1/2"	3257	195.8	11724	6901	P550OVR	4								
5 x OVRP550I <b>G</b> XX	2 1/2"	4071	244.7	14656	8626	P550OVR	5								

Select **G** for BSPP Threads / Select **N** for NPT Threads

### 1 System Information Required for OVR Sizing & Selection

- Minimum pressure at the inlet of the OVR
- Compressor type (oil lubricated or oil free)
- Maximum inlet temperature at the inlet of the OVR (highest summer inlet temp)
- Maximum compressed air flow rate
- Dewpoint of the compressed air (i.e. is the proposed location of the unit before or after a compressed air dryer)
- Oil vapour concentration expected at the inlet of the OVR (default is 0.05 mg/m<sup>3</sup>)

### 2 Select correction factors

- For minimum inlet pressure, select a correction factor from the CFIP table that corresponds to the minimum inlet pressure of the compressed air system, remembering to always round down e.g. for 5 bar g use the 5 bar g correction factor.
- For maximum inlet temperature there are two tables, one for use with an oil lubricated compressor, the other for oil free compressor. Select a correction factor from the CFIT table for the relevant compressor type, remembering to always round up e.g. for 37°C use the 40°C correction factor.
- For pressure dewpoint, select a correction factor from the CFID table.
- For oil vapour concentration, select a correction factor from the CFIV table, remembering to always round up e.g. for 3.25g/m<sup>3</sup> use the correction factor for 4mg/m<sup>3</sup>.

### 3 Calculate minimum filtration capacity

Minimum filtration Capacity = Compressed Air Flow x CFIT x CFMIP x CFID x CFIV

- Using the minimum filtration capacity, select an OVR model from the flow rate tables.
- The OVR model selected must have a flow rate equal to or greater than the minimum filtration capacity.
- If the minimum filtration capacity exceeds the maximum values of the models shown within the tables, please contact Parker for advice regarding larger multi-banked units.

### Correction Factors Inlet Temperature (CFIT)

OIL LUBRICATED COMPRESSORS		
°C	°F	CORRECTION FACTOR
25	77	1.00
30	86	1.00
35	95	1.00
40	104	1.25
45	113	1.55
50	122	1.90

### Correction Factors Inlet Temperature (CFIT)

OIL FREE COMPRESSORS		
°C	°F	CORRECTION FACTOR
25	77	1.00
30	86	1.00
35	95	1.00
40	104	1.02
45	113	1.04
50	122	1.05

### Correction Factor Minimum Inlet Pressure (CFMIP)

MINIMUM INLET PRESSURE	bar g	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	psi g	44	58	73	87	100	116	131	145	160	174	189	203	218	232
Correction Factor		2.00	1.60	1.33	1.14	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

### Correction Factor - Dewpoint (CFID)

INSTALLATION	CORRECTION FACTOR
After Dryer	1.00
Before Dryer	4.00

### Correction Factor Inlet Vapour Content (CFIV)

INLET VAPOR CONCENTRATION MG/M <sup>3</sup>	0.05	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	2.0	3.0	4.0	5.0
	Correction Factor	1	2	4	6	8	10	12	14	16	18	20	40	60	80

# OIL-X OVR - INTERNAL VOLUMES

MODEL	PIPE SIZE	INTERNAL VOLUME (LITRES)
OVR P300	2"	17
OVR P350	2"	34
OVR P400	2 ½"	60
OVR P450	2 ½"	87
OVR P500	2 ½"	114
OVR P550	2 ½"	140

## MATERIALS OF CONSTRUCTION

ITEM	DESCRIPTION
Columns, Manifolds, Inlet/Outlet block	Aluminium extrusion EN AW-6063 T6
End plates / Flanges	Cast machined EN AW-6082 T6
Feet	8mm Steel plate
Fittings	Nickel plated mild steel
Adsorbent	Activated carbon
Seals	Nitrile, Viton, EPDM, PTFE (tape)
Paint	Epoxy coated

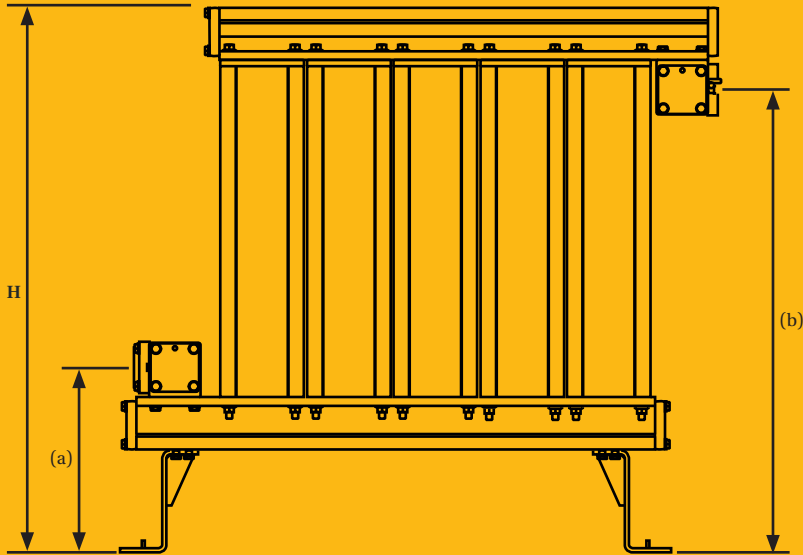
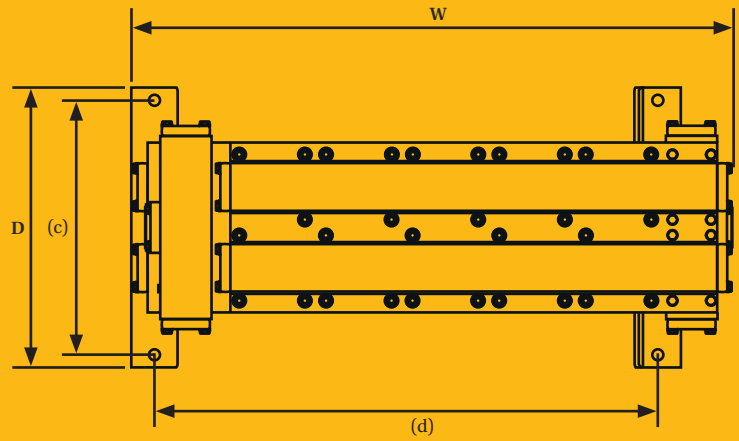
## FILTRATION TESTED IN ACCORDANCE WITH:

Filtration Grade	OVR
Filter Type	Oil Vapour Reduction
Test Methods Used	ISO8573-5:2001
Oil Vapour Inlet Challenge Concentration	0.05 mg of oil vapour per cubic metre of compressed air

## QAULTY ASSURANCE / IP RATING / PRESSURE VESSEL APPROVALS

Development / Manufacture	ISO 9001 / ISO 14001
Ingress Protection Rating	Not Applicable
EU	Pressure vessel approved for fluid group 2 in accordance with the Pressure Equipment Directive 2014/68/EU
USA	Approval to ASME VIII Div. 1 not required
AUS	Approval to AS1210 not required
GUS	TR (formerly GOST-R)
For use with Compressed Air, N <sub>2</sub> & CO <sub>2</sub>	

# WEIGHTS AND DIMENSIONS



MODEL	DIMENSIONS														WEIGHT	
	H		W		D		(a)		(b)		(c)		(d)			
	MM	INS	MM	INS	MM	INS	MM	INS	MM	INS	MM	INS	MM	INS	KG	IBS
OVRP300	998	39.29	534	21.02	352	13.9	296	11.65	838	32.99	300	11.81	391	15.39	38	84
OVRP350	1062	41.81	538	21.18	551	21.7	360	14.17	902	35.51	500	19.69	388	15.28	67	147
OVRP400	1062	41.81	682	26.85	551	21.7	360	14.17	902	35.51	500	19.69	508	20.00	93	205
OVRP450	1062	41.81	836	32.91	551	21.7	360	14.17	902	35.51	500	19.69	646	25.43	121	267
OVRP500	1062	41.81	1005	39.57	551	21.7	360	14.17	902	35.51	500	19.69	815	32.09	144	318
OVRP550	1062	41.81	1174	46.22	551	21.7	360	14.17	902	35.51	500	19.69	984	38.74	171	377

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