Filter Design Data Form

1.1 Quote Information

Name		Company	
Business Title			
Email		Phone Number:	
Equipment Information			
Quantity:		Ship to Location (City, State, Zip)	
Proposal Due Date		Freight Terms	☐ EXW ☐ FCA ☐ FOB ☐ CIF ☐ Other _____
Potential Order Date:		Preferred Ship Date:	

Rank (1-4) Importance of the Following:							
Price:		Spec Compliance:		Delivery:		Quality/Reliability:	

Additional Comments

1.2 Process Conditions

Process Data	Parameter	Filter Typical Values
Inlet Pressure (PSIG)		800-1200
Inlet Temp (°F)		70-125
Design Pressure (PSIG)		1440
Gas Inlet Flowrate (MMSCFD)		5-100
Gas Inlet SG		0.57-0.8
Site Elevation (Ft)		
Inlet Fluid Composition		
Shop Capable Size	<54"OD, <15'S/S, <1440#	**Required**
		Requested

1.3 Design Scope

Orientation	☐ Horizontal

	☐ Vertical
Type	☐ Coalescing (0.3 micron, in to out) ☐ Filter Separator (1 micron, out to in)
Filtration	☐ Particulate ☐ Lube Oil ☐ Salt ☐ Sand ☐ Oil ☐ Dissolved Solids
Style	☐ Bare Vessel ☐ Vessel with Accessories ☐ Vessel with Skid, No Accessories ☐ Packaged
Closure	☐ Modco or equivalent ☐ Sentry
Paint	☐ Cimarron Standard SP-3/DTM 1 Coat, Color: Desert Tan ☐ Cimarron Standard SP-6/2 Coat, Color: Desert Tan ☐ Custom

Vessel Adders	Accessories (Ship Loose of Bare Vessel option)	
☐ Internal Coating	Item:	OEM/Type Preference:
	☐ Concrete Blocks	
Corrosion Allowance: ☐ 1/32" ☐ 1/16" ☐ 1/8" ☐ 1/4"	☐ PSV	
	☐ Dump Valves	
	☐ Level Controller	
NACE Adders: ☐ Hardness Testing ☐ Materials	☐ Level Switch	
	☐ DP Gauge Gauges (Level, PI, TI) ☐ Sight ☐ Transmitters	
☐ All Flanged Connections ☐ Pressure/Temperature Re-ratings		

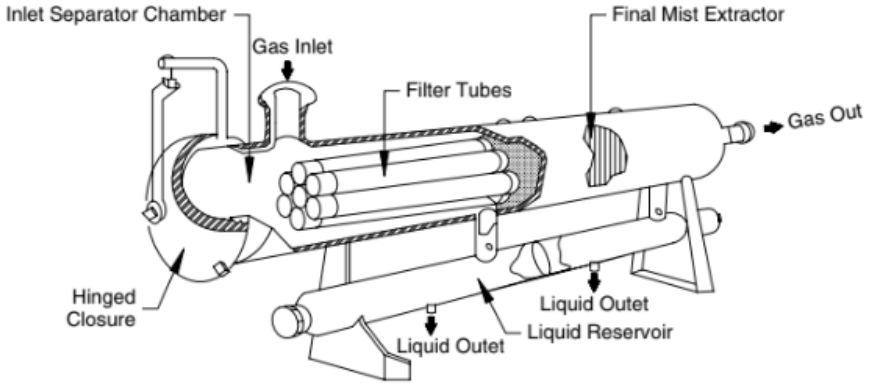
Skid (if Skidded or Packaged Option accepted)
☐ On-skid deck grating Containment: ☐ Containment Pan (Cookie Sheet) with Drain ☐ In-skid containment (sloped drip pans)

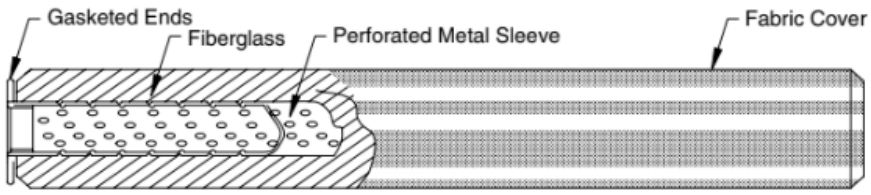
Additional Requests

1.4 Application Information

Filter Separator Uses:

- High-gas/low-liquid flow applications
- Designed to remove small liquid and solid particles from the gas stream.
- Used in applications where conventional separators employing gravitational or centrifugal force are ineffective.
- Compressor inlets in field compressor stations, final scrubbers upstream of glycol contact towers, and instrument/fuel gas applications.
- Can remove 100% of 1-micron particles and 99% of 1/2-micron particles when they are operated at rated capacity and recommended filter-change intervals.
- In applications where there is very little liquid flow, often a horizontal separator will be designed with a liquid sump on the outlet end to provide the required liquid retention time. This results in an overall smaller diameter for the vessel.





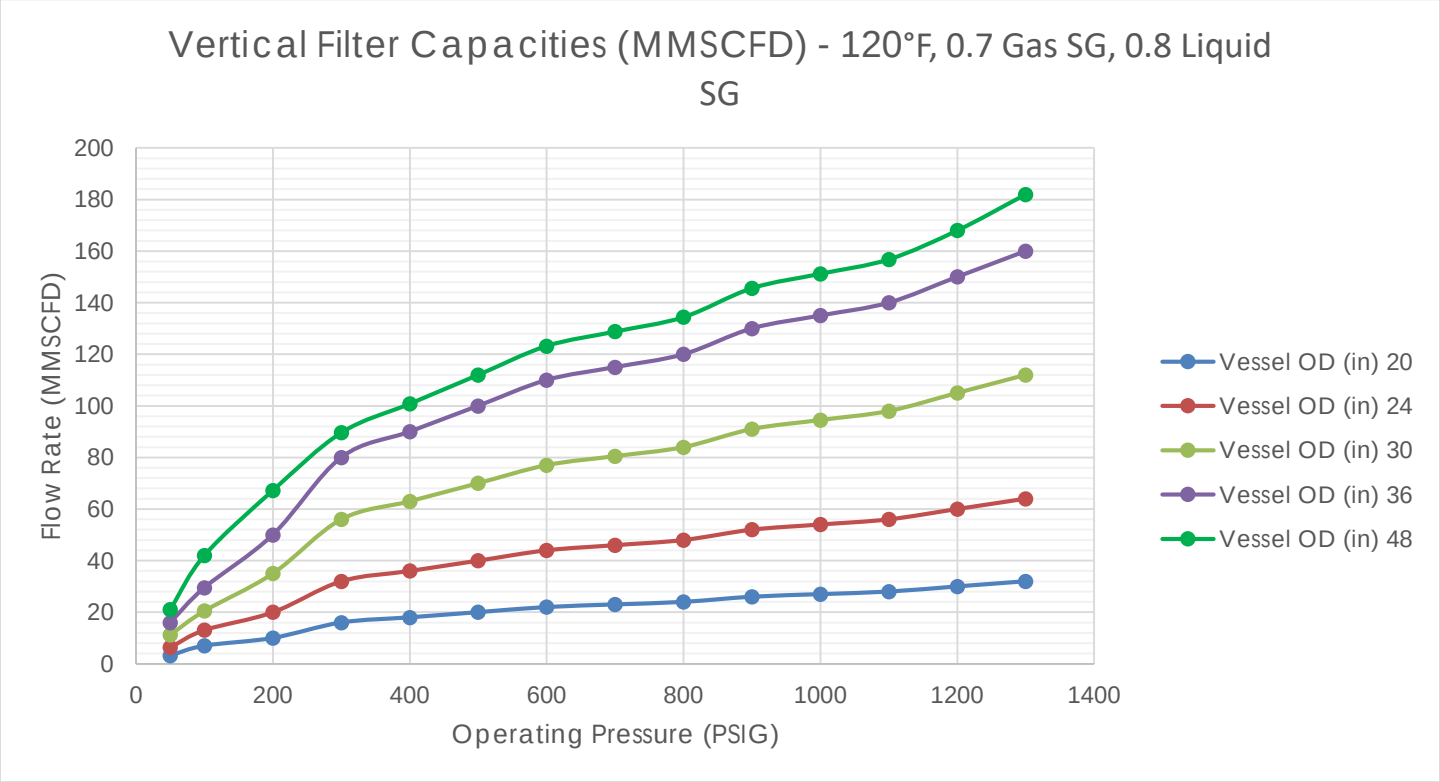
Coalescing Filter Uses:

- In refrigerant compressor discharge to recover the refrigeration compressor lube oil and to prevent contamination of the heat transfer surface in the process chiller or exchanger.
- Downstream of glycol absorbers or contactors to recover the entrained glycol mist carried overhead.
- Downstream of amine treating units to recover the amine solution and to prevent contamination of of subsequent process equipment.
- Following lean oil absorbers to recover the lean oil (reducing operating costs), and to eliminate possible contamination of process equipment.
- Ahead of metering and regulating town border stations to assure long life and low maintenance of the turbine meter or standard orifice meter.

Smith Industries Handbook

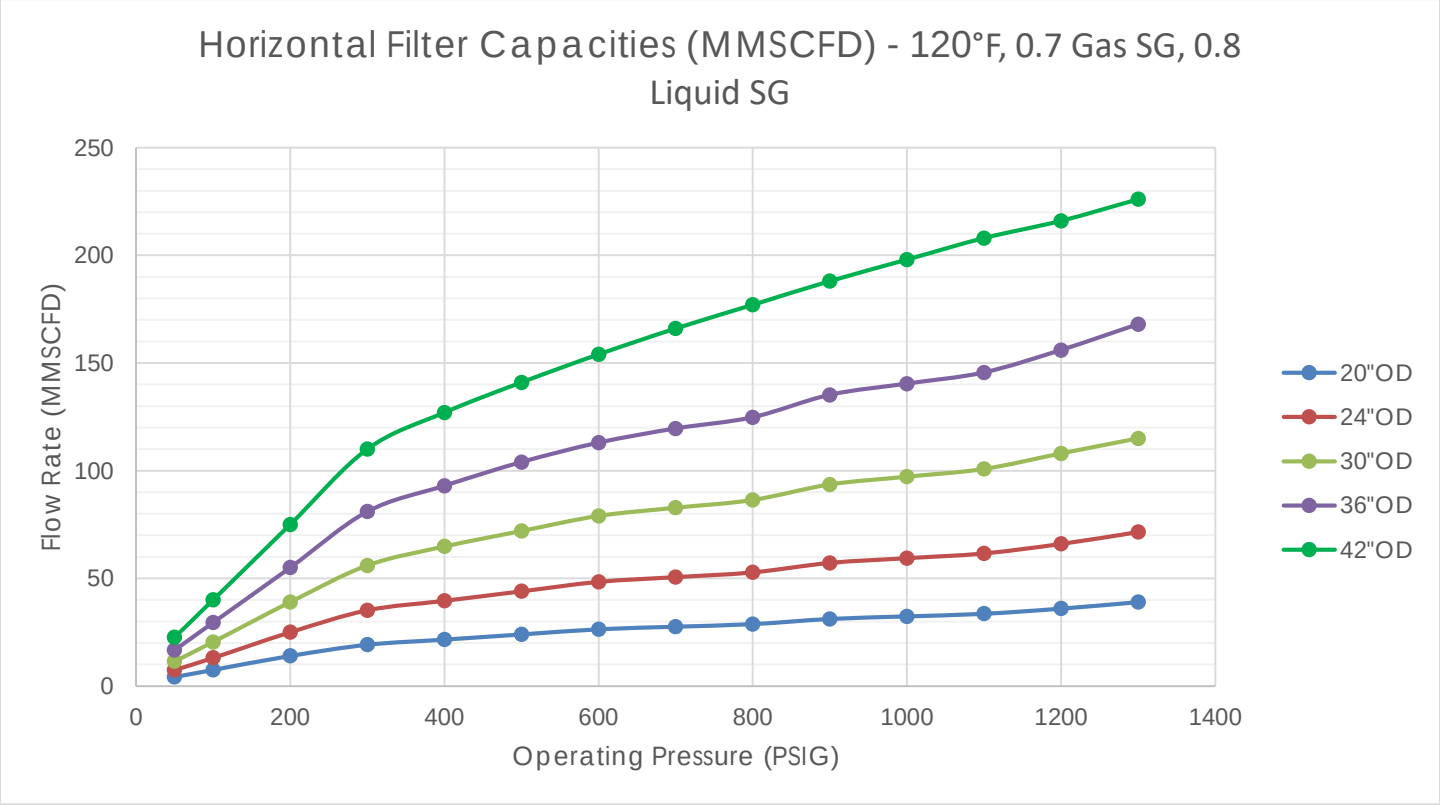
1.5 Sizing Charts

Vertical Filter Capacity (MMSCFD) - 120°F, 0.7 Gas SG, 0.8 Liquid SG															
		Operating Pressure (PSIG)													
		50	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300
Vessel OD (in)	20	3.2	7	10	16	18	20	22	23	24	26	27	28	30	32
	24	6.4	13.1	20	32	36	40	44	46	48	52	54	56	60	64
	30	11.2	20.5	35	56	63	70	77	80.5	84	91	94.5	98	105	112
	36	16	29.5	50	80	90	100	110	115	120	130	135	140	150	160
	48	21	42	67.2	89.6	100.8	112	123.2	128.8	134.4	145.6	151.2	156.8	168	182



Vertical Filter Specifications							
Vessel OD (in)	Vessel S/S Height (ft)	Gas Inlet/Outlet Nozzle Sizes (in)	Closure Type	Filter Micron Size	Filter Flow Path	Number of Elements	Outlet Baffle?
20	7.5	6	Fig. 500	0.3	Inside to Outside	4	No
24	7.5	8	Fig. 500	0.3	Inside to Outside	8	No
30	7.5	10	Fig. 500	0.3	Inside to Outside	14	No
36	8	12	Fig. 500	0.3	Inside to Outside	20	No
48	10	16	Fig. 500	0.3	Inside to Outside	28	Yes

Horizontal Filter Capacity (MMSCFD) - 120°F, 0.7 Gas SG, 0.8 Liquid SG															
		Operating Pressure (PSIG)													
		50	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300
Vessel OD (in)	20	4.2	7.5	14	19.2	21.6	24	26.4	27.6	28.8	31.2	32.4	33.6	36	39
	24	7.5	13.1	25	35.2	39.6	44	48.4	50.6	52.8	57.2	59.4	61.6	66	71.5
	30	11.5	20.5	39	56	64.8	72	79	82.8	86.4	93.6	97.2	100.8	108	115
	36	16.7	29.5	55	81	93	104	113	119.6	124.8	135.2	140.4	145.6	156	168
	42	22.6	40	75	110	127	141	154	166	177	188	198	208	216	226



Horizontal Filter Specifications								
Vessel OD (in)	Vessel S/S Height (ft)	Gas I/O Nozzle Sizes (in)	Closure Type	Filter Micron Size	Filter Flow Path	Number of Elements	Single/Dual Sump	Sump Diameter (in)
20	12	6	Fig. 500	1/0.3	Outside to Inside	6	Dual	12
24	12.5	8	Fig. 500	1/0.3	Outside to Inside	11	Dual	12
30	12.5	10	Fig. 500	1/0.3	Outside to Inside	18	Dual	16
36	12.5	12	Fig. 500	1/0.3	Outside to Inside	26	Dual	16
42	15	14	Fig. 500	1/0.3	Outside to Inside	38	Dual	18
Note: Horizontal filters are only guaranteed to remove 99.8% of SOLIDS at the specified filter micron size. No liquids removal efficiency is guaranteed. For a liquids removal guarantee, a vertical filter orientation is recommended								