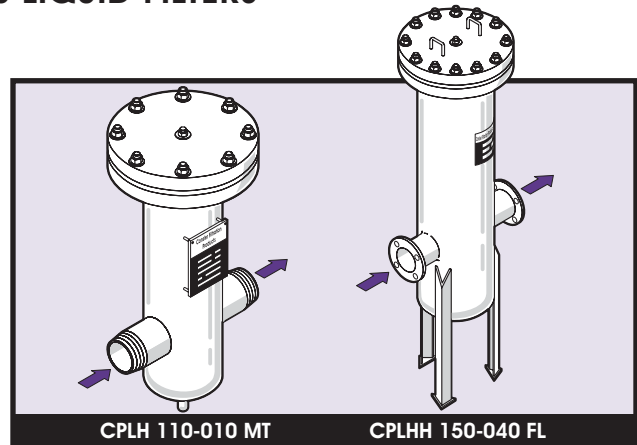
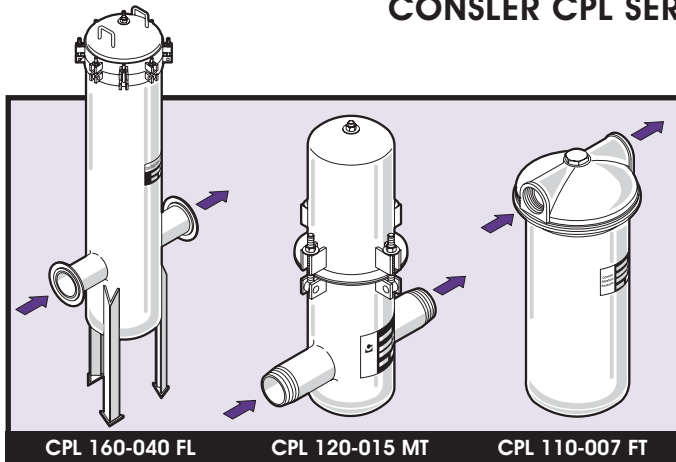


CONSLER® FILTRATION PRODUCTS

CONSLER CPL SERIES LIQUID FILTERS



Features

- High flow rates
- Low pressure drop
- Maximum filter area and dirt holding capacity
- ASME Code designed and constructed
- Horizontal in-line connections
- Modified and custom designs available
- Design pressures from 180 psi to 740 psi
- Contact factory for higher pressure applications

Applications

- For efficient removal of dirt, pipe scale, and other solid matter from low and high pressure liquid pipelines
- For polishing and final filtering process liquids such as aqueous chemical solutions
- For clarifying recirculating liquids including oils and coolants
- For highly viscous liquids
- For filtering of solid particles ranging from 0.3 to 750 microns

Element Design and Construction

Consler's Liquid Filters offer a replaceable, cleanable element that utilizes a pleated design to provide maximum filtration area in a compact filter assembly. Consler's designs assure efficient filtration with long element life and lower pressure loss. Most housings employ only one filter element, and a maximum of three to permit quick and simple element change-outs.

The element design and construction offers positive gasket sealing to prevent by-pass of unfiltered liquids. Most filter media options are cleanable and many are also factory recoverable for extended filter life and lower maintenance costs.

Element Materials

Standard elements are furnished with a polyester filter medium providing nominal efficiency on 20 micron solid particles. CPLHH Series elements are also supplied in many alternate materials offering a particle retention range from .3 to 750 microns. Optional filter materials include nylon, fiberglass, cotton, polypropylene, rayon, TEFLON*, and wire cloth providing an application range from sub-zero temperatures to 1000 °F.

Standard elements are furnished with a carbon steel center core and galvanized steel support frame. 304 Stainless Steel and other materials are also available.

Housing Design and Construction

Materials of construction include carbon steel, 304 and 316 Stainless Steel as well as other alloys. Housings are designed and constructed in accordance with ASME Code Section VIII Division I requirements for unfired pressure vessels (except for model CPL 110). Models CPL 115 and above and all models CPLH and CPLHH are available with "U" Stamp registration and certification. Inlet/outlet connections are furnished in a horizontal in-line configuration. All models can be quickly serviced without breaking pipe connections.

Standard Model Features

- Leg Supports
 - CPL 160 and larger
 - CPLH 130 and larger
 - CPLHH 130 and larger
- Closure Assembly
 - CPL 180 and larger – hinged closure assembly
 - CPLH 160 and larger – swing away cover devices
 - CPLHH 150 and larger – swing away cover devices
- 1/4" NPT Gauge Connections on Inlet/Outlet Nozzles
 - CPL 115 and larger
 - CPLH 120 and larger
 - CPLHH 120 and larger

All models provide a large volume sump area for collection of contaminants below the filter element.

Standard filter housing may also be modified and customized to meet unique or special application needs. Typical design modifications include:

- Special leg lengths
- End connection types
- Inlet/Outlet orientations
- Cover lifting devices
- Special controls and accessories

*DuPont registered trademark

CPL Specifications—180 psig Design

Model No.	Conn.		Max. Rec. Flow Rate ² (GPM)	"H" Housing Factor	Dimensions - Inches ¹					Housing Gasket Part No.	Element			Approx. Weight Lbs.
	Size	Style			A	B	D	E	F		Part No.	No Req'd.	Total filter Area Sq. Ft.	
CPL 110-005 FT	1/2	FPT	12	A	3 5/8	7/8	12 3/4	4 5/8	10 3/4	40441	16011K5	1	1.5	7
CPL 110-007 FT	3/4	FPT	20	B	3 5/8	7/8	12 3/4	4 5/8	10 3/4	40441	16011K5	1	1.5	7
CPL 110-010 FT	1	FPT	22	C	3 5/8	7/8	12 3/4	4 5/8	10 3/4	40441	16011K5	1	1.5	7
CPL 115-015 MT	1 1/2	MPT	40	D	5 1/4	3	17	11	10	6003B03	15470K5	1	3.2	20
CPL 120-015 MT	1 1/2	MPT	50	E	6 1/4	3	19	12	12	6004B04	12348K5	1	3.9	30
CPL 130-020 MT	2	MPT	90	F	8 1/4	4 1/2	20	18	12	6005B04	10825K5	1	7.2	45
CPL 140-030 MT	3	MPT	135	G	8 1/4	4 1/2	27 1/4	18	17	6005B04	10826K5	1	11.5	50
CPL 150-040 MT	4	MPT	250	H	10 1/4	5 1/2	35 1/4	20	21	6006B04	10827K5	1	21.4	90
CPL 160-040 FL	4	FLG	410	H	12 3/4	11 1/2	51	22 3/4	26	6007B03	15469K5	1	34.6	310
CPL 170-060 FL	6	FLG	925	K	16	13	77	26	26	6008B03	10828K5	2	76.3	435
CPL 180-080 FL	8	FLG	1,500	N	16	13	77	26	26	6008B03	10829K5	2	129.0	450
CPL 190-100 FL	10	FLG	2,500	Q	20	15 1/2	84	32	26	6009B03	10830K5	2	180.7	770
CPL 200-120 FL	12	FLG	3,500	T	24	17 1/2	115	36	26	60101B03	10831K5	3	370.0	1,025

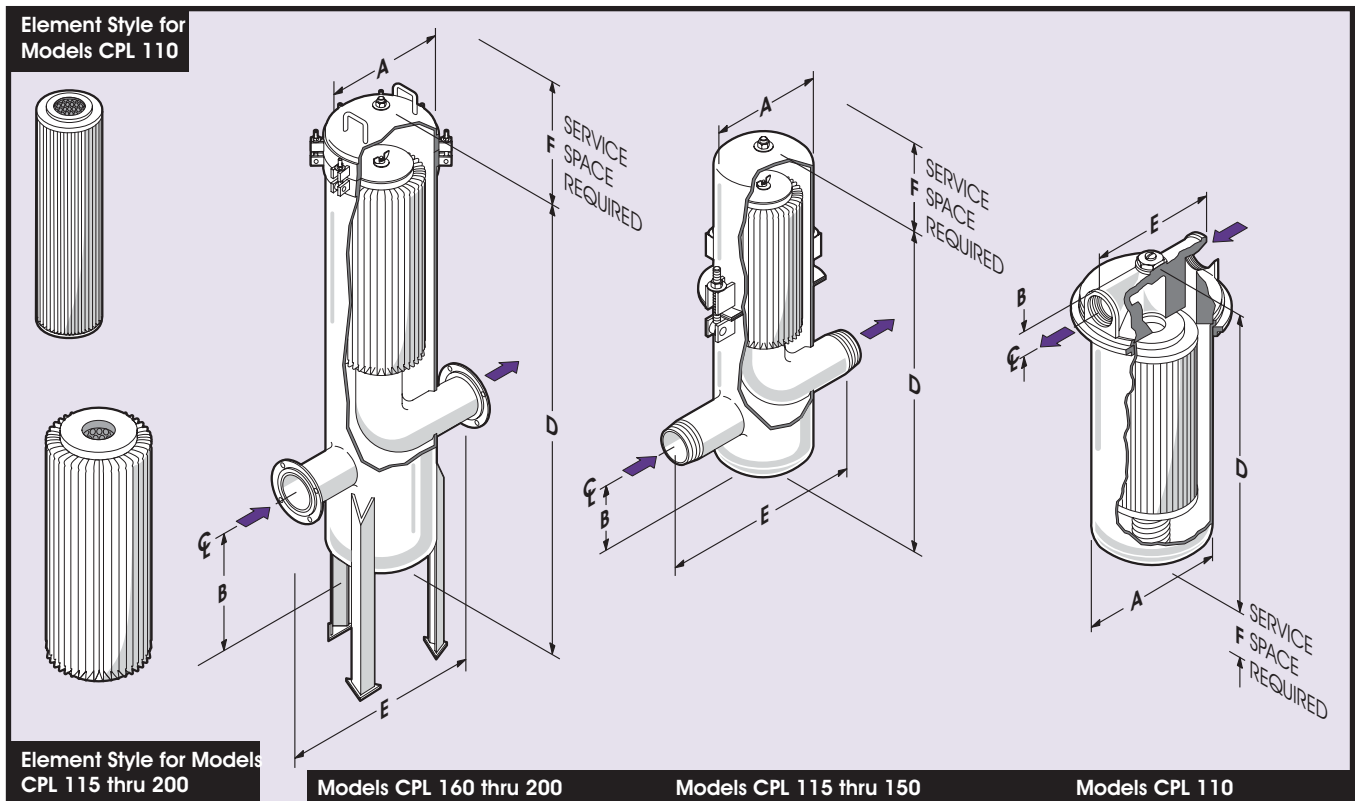
1. All dimensions are approximate. 2. Based on water and standard 20 micron polyester cartridges.

Filter Materials and Ratings

- Housings – Carbon Steel Standard
Available: 304SS, 316SS, 316LSS, Hastelloy
- Pressure/Temperature Ratings
CPL 110: 150 psig at 100° F max.
CPL 115 & larger, threaded connections: 180 psig at 650° F max.
CPL 115 & larger, flanged connections: 180 psig at 466° F max.
- Filter Element – Standard "K5"
CPL 110: Polyester media, wool gaskets; 20 micron nominal retention, 200° F max.; cleanable.
CPL 115 & larger: Polyester media, wool gaskets; 20 micron nominal retention, 200° F max.; cleanable and recoverable.
- Closure Gasket
CPL Series: Buna, 250° F max.

Features

- Models CPL 115 thru 200 have 1/4" NPT plugged gauge connections.
- Model CPL 160 has two (2) handles for easy closure removal. CPL 170 thru 200 have a hinged closure with one (1) handle.
- Models CPL 160 thru 200 have three (3) leg supports with length of 18" from bottom of vessel to grade.
- Drain and vent connections are plugged 3000# NPT couplings.
- All flanges are 150 lb. ANSI, raised face, slip on.
- Models CPL 115 thru 150 have 1/2" NPT vent and drain. Models CPL 160 thru 200 have 1" NPT vent and drain. Vent connections are tapped and plugged.



CPLH Specifications—285 psig Design

Model No.	Conn.		Max. Rec. Flow Rate ² (GPM)	"H" Housing Factor	Dimensions - Inches ¹					Housing Gasket Part No.	Element			Approx. Weight Lbs.
	Size	Style			A	B	D	E	F		Part No.	No Req'd.	Total filter Area Sq. Ft.	
CPLH 110-005 MT	1/2	MPT	12	A	4 1/2	4	15 3/4	10	10	6015PSO	16011K5	1	1.5	55
CPLH 110-007 MT	3/4	MPT	20	B	4 1/2	4	15 3/4	10	10	6015PSO	16011K5	1	1.5	55
CPLH 110-010 MT	1	MPT	22	C	4 1/2	4	15 3/4	10	10	6015PSO	16011K5	1	1.5	55
CPLH 120-015 MT	1 1/2	MPT	50	D	6 5/8	5 3/4	23 1/4	13 1/2	12	6016PSO	12348K5	1	3.9	95
CPLH 130-020 FL	2	FLG	90	E	8 5/8	7 1/4	25 1/4	18	12	6017PSO	10825K5	1	7.2	180
CPLH 140-030 FL	3	FLG	135	F	8 5/8	7 3/4	32 1/4	18	17	6017PSO	10826K5	1	11.5	185
CPLH 150-040 FL	4	FLG	250	H	10 3/4	9 1/4	37 3/4	20	21	6018PSO	10827K5	1	21.4	300
CPLH 160-040 FL	4	FLG	410	H	12 3/4	11 1/2	47	22 3/4	26	6019PSO	15469K5	1	34.6	440
CPLH 170-060 FL	6	FLG	925	J	16	12	75	26	26	6020PSO	10828K5	2	76.3	850
CPLH 180-080 FL	8	FLG	1,500	M	16	13	77	26	26	6020PSO	10829K5	2	129.0	880
CPLH 190-100 FL	10	FLG	2,500	P	20	15 1/2	80	32	26	6021PSO	10830K5	2	180.7	1,250
CPLH 200-120 FL	12	FLG	3,500	S	24	17 1/2	112	36	26	6022PSO	10831K5	3	370.0	1,925

1. All dimensions are approximate. 2. Based on water and standard 20 micron polyester cartridges.

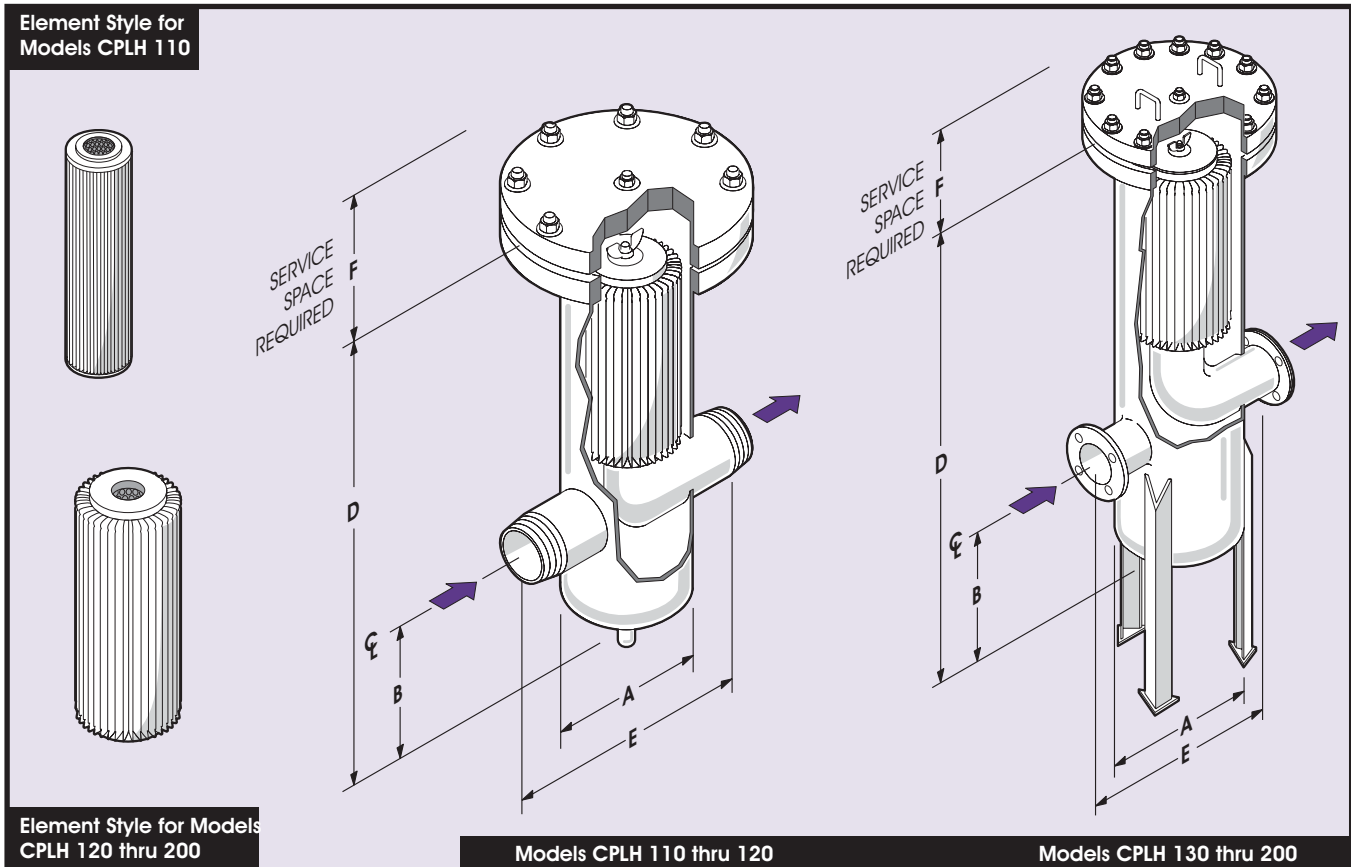
Filter Materials and Ratings

- Housings – Carbon Steel Standard
Available: 304SS, 316SS, 316LSS, Hastaloy
- Pressure/Temperature Ratings
All CPLH models: 285 psig 100° F max.
- Filter Element – Standard "K5"
CPLH 110: Polyester media, wool gaskets; 10 micron retention at 98%, 200° F max.; cleanable.
CPLH 120 & larger: Polyester media, wool gaskets; 10 micron retention at 98%, 200° F max.; cleanable and recoverable.
- Closure Gasket
CG style spiral wound, with 304 Stainless Steel compression ring and graphite filler.

Features

- Models CPLH 120 thru 200 have 1/4" NPT plugged gauge connections.
- Models CPLH 130 thru 150 have two (2) handles for easy closure removal. CPLH 160 thru 200 have a swing away cover device, and one (1) handle.
- Models CPLH 130 thru 200 have three (3) leg supports with length of 18" from bottom of vessel to grade.
- Models CPLH 110 thru 150 have 1/2" NPT drain and vent connections. Models CPLH 160 thru 200 have 1" NPT drain and vent connections. All are plugged 3000# NPT couplings. Vent connections are tapped and plugged.
- All flanges are 150 lb. ANSI, raised face, slip on.

Element Style for Models CPLH 110



Element Style for Models CPLH 120 thru 200

Models CPLH 110 thru 120

Models CPLH 130 thru 200

CPLHH Specifications—740 psig Design

Model No.	Conn.		Max. Rec. Flow Rate ² (GPM)	"H" Housing Factor	Dimensions - Inches ¹					Housing Gasket Part No.	Element			Approx. Weight Lbs.
	Size	Style			A	B	D	E	F		Part No.	No Req'd.	Total filter Area Sq. Ft.	
CPLHH 110-005 MT	1/2	MPT	12	A	4 1/2	4	15 3/4	10	10	6015PSO	10824K5	1	1.5	75
CPLHH 110-007 MT	3/4	MPT	20	B	4 1/2	4	15 3/4	10	10	6015PSO	10824K5	1	1.5	75
CPLHH 110-010 MT	1	MPT	22	C	4 1/2	4	15 3/4	10	10	6015PSO	10824K5	1	1.5	75
CPLHH 120-015 FL	1 1/2	FLG	50	D	6 5/8	5 3/4	23 1/4	13 1/2	12	6016PSO	12348K5	1	3.9	130
CPLHH 130-020 FL	2	FLG	90	E	8 5/8	7 1/4	25 1/4	18	12	6017PSO	10825K5	1	7.2	270
CPLHH 140-030 FL	3	FLG	135	F	8 5/8	7 3/4	32 1/4	18	17	6017PSO	10826K5	1	11.5	290
CPLHH 150-040 FL	4	FLG	250	H	10 3/4	9 1/4	37 3/4	20	21	6018PSO	10827K5	1	21.4	475
CPLHH 160-040 FL	4	FLG	410	H	12 3/4	11 1/2	47	22 3/4	26	6019PSO	15469K5	1	34.6	800
CPLHH 170-060 FL	6	FLG	925	I	16	12	75	26	26	6020PSO	10828K5	2	76.3	940
CPLHH 180-080 FL	8	FLG	1,500	L	16	13	77	26	26	6020PSO	10829K5	2	129.0	1,490
CPLHH 190-100 FL	10	FLG	2,500	O	20	15 1/2	80	32	26	6021PSO	10830K5	2	180.7	2,250
CPLHH 200-120 FL	12	FLG	3,500	R	24	17 1/2	112	36	26	6022PSO	10831K5	3	370.0	3,400

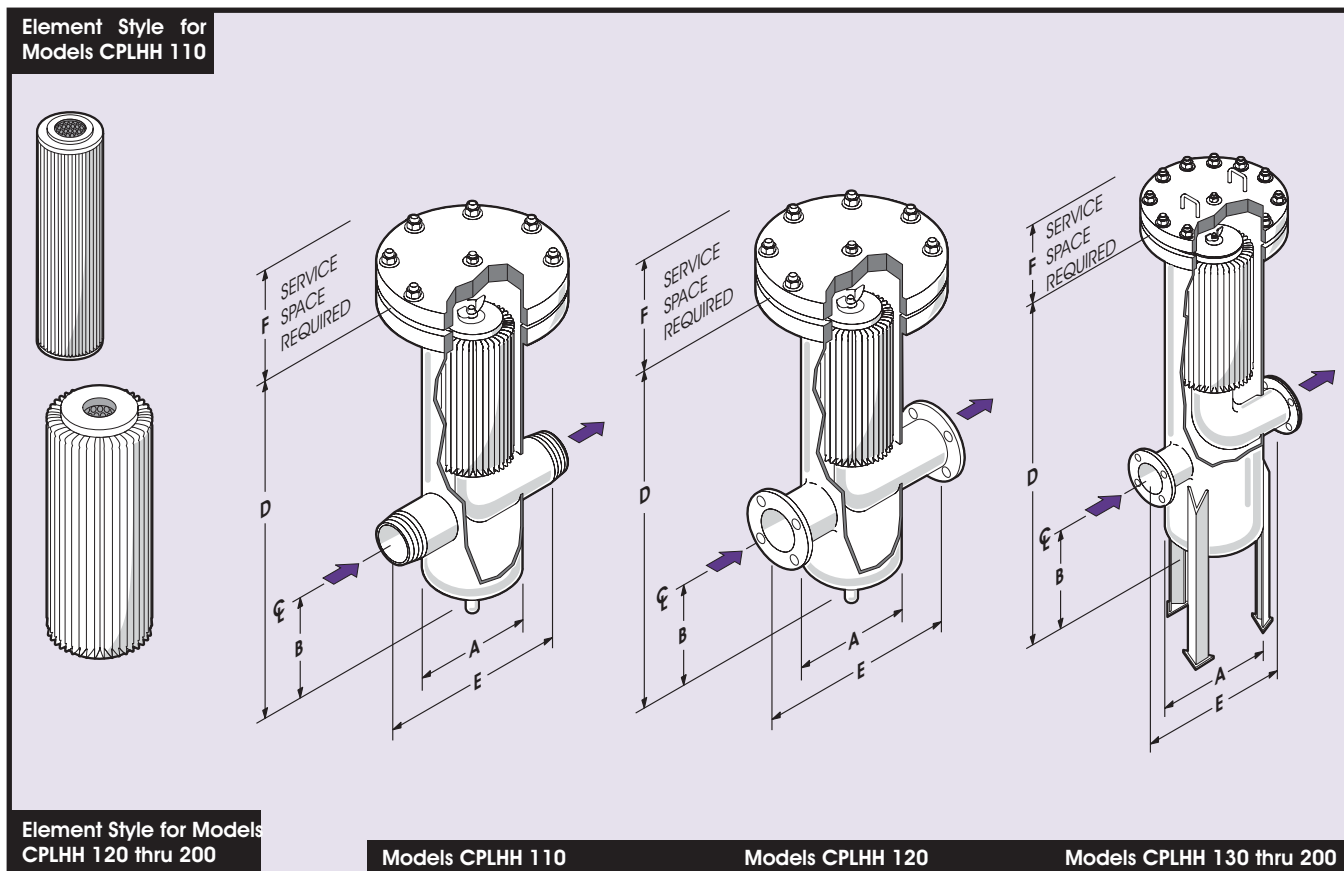
1. All dimensions are approximate. 2. Based on water and standard 20 micron polyester cartridges.

Filter Materials and Ratings

- Housings – Carbon Steel Standard
Available: 304SS, 316SS, 316LSS, Hastelloy
- Pressure/Temperature Ratings
All CPLHH models: 740 psig at 100° F max.
- Filter Element – Standard "K5"
CPLHH 110: Polyester media, wool gaskets; 20 micron nominal retention, 200° F max.; cleanable.
CPLHH 120 & larger: Polyester media, wool gaskets; 20 micron nominal retention at 200° F max.; cleanable and recoverable.
- Closure Gasket
CG style spiral wound, with 304 Stainless Steel compression ring and graphite filler.

Features

- Models CPLHH 120 thru 200 have 1/4" NPT plugged gauge connections.
- Models CPLHH 130 thru 150 have two (two) handles for easy closure removal. CPLHH 160 thru 200 have a swing away cover device, and one (1) handle.
- Models CPLHH 130 thru 200 have three (3) leg supports with length of 18" from bottom of vessel to grade.
- Drain and vent connections are plugged 3000# NPT couplings.
- Models CPLHH 110 thru 150 have 1/2" NPT plugged drain and vent connections. Models CPLHH 160 thru 200 have 1" NPT drain and vent connections. Vent connections are tapped and plugged.
- All flanges are 300 lb. ANSI, raised face, slip on.



Selecting the Proper Filter Model

Select a CPL filter model from the table based on existing system connection size, and system flow rate. Flow rates are based on water and 20 micron polyester cartridges. Optional element materials are listed on page 8 which offer a variety of micron retention, material compatibility, and temperature selections.

Determining Filter Pressure Loss

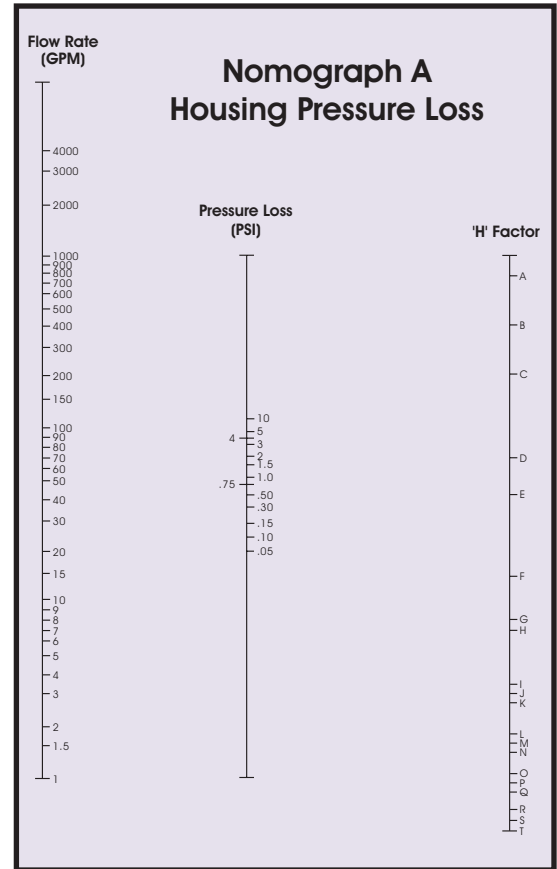
To determine pressure loss through a CPL series filter, find the pressure loss through the housing using nomograph "A", through the selected element using nomograph "B", and add the two together.

Nomograph "A" - Housing Pressure Loss

1. Draw a straight line from the FLOW RATE scale to the housing "H" FACTOR scale. ("H" Factors can be obtained from the CPL specifications tables.)
2. Read the pressure loss across the housing at the line intersections with the PRESSURE LOSS scale. Housing pressure loss = _____ psi

Nomograph "B" - Element Pressure Loss

1. Divide the flow rate by the total filter area in the selected filter model to determine the flow per square foot of area. The flow per square foot should not exceed that recommended in the table below. If it does, select a filter with more total filter area. _____ gpm ÷ _____ total filter area (sq.ft.) = _____ gpm/sq.ft.
2. Draw a straight line from the KINEMATIC VISCOSITY scale to GPM/SQUARE FOOT scale.
3. Draw a straight line from the intersection with the INDEX LINE to the "M" FACTOR scale as indicated in the media options table. (For medium #5, "M" = 1.0).
4. Pressure loss across the cartridges is indicated at the intersection with the PRESSURE LOSS scale. Cartridge pressure loss _____ psi

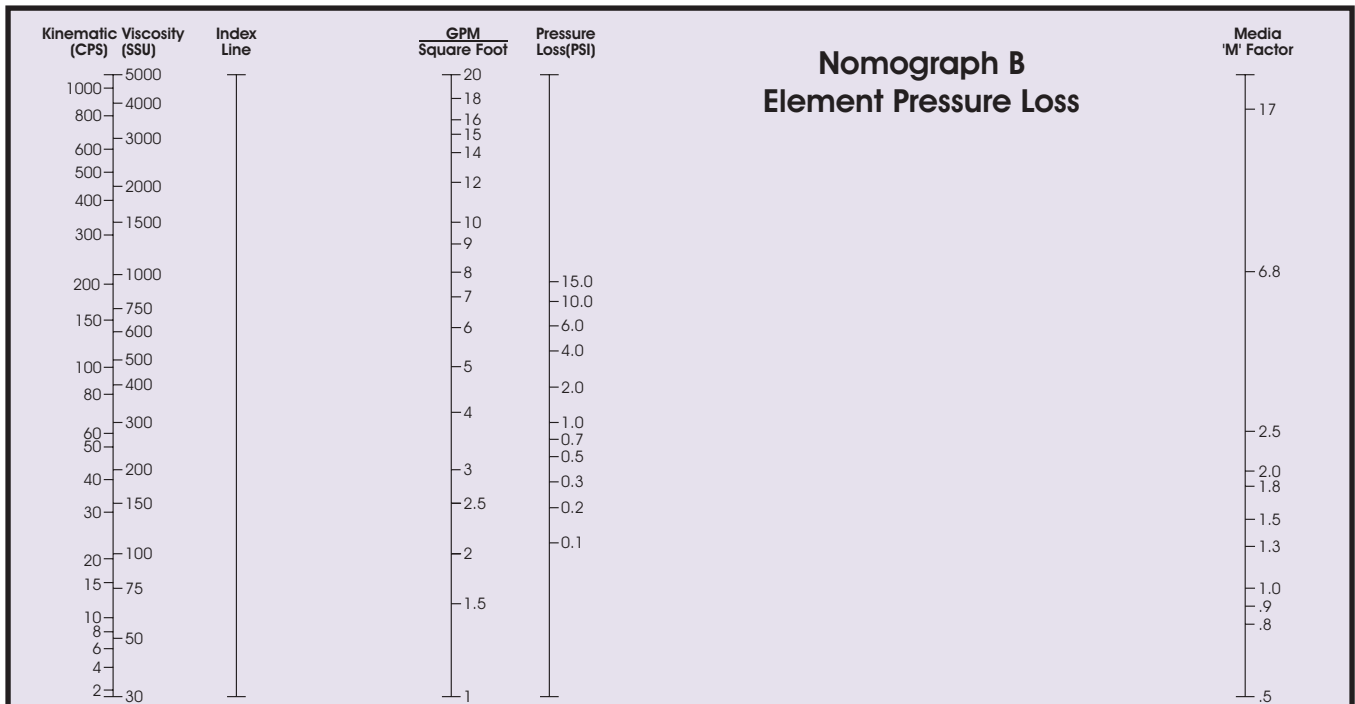


Maximum Recommended Medial Velocity				
Medium Micron Rating (98%)	1-5 μ	6-10 μ	11-90 μ	90 = μ
Maximum Recommended Flow per sq. ft. of Media	6 gpm	7 1/2 gpm	12 gpm	20 gpm

Total Filter Pressure Loss
 Housing pressure loss _____ psi
 Cartridge pressure loss + _____ psi
 TOTAL pressure loss = _____ psi

Notes

- If the pressure loss is higher than the application allows, select a medium with a lower "M" factor, or select a filter model with a larger connection or more filter area.
- Contact your local representative or our sales engineering staff for sizing assistance.



Compatibility Guide¹

S = Satisfactory
N = Recommended

F = Fair
Blank = Not Tested

Fluid	% ²	° F ³	Housing			Closure Gasket			Element Medium								
			Carbon Steel	304 Stainless	316 Stainless	Buna	Velumold	Viton	Polyester	Wool	Cotton	Fiberglass	NOMEX*	Nylon	Polypropylene	TEFLON*	
Ammonia (Anhydrous)	100	70	S	S	S	F	F	N	S	N	S	S	S	S	S	S	S
Benzene	100	70	S	S	S	S	S	S	S	S	S	S	S	S	S	N	S
Cutting Oils – Soluble	100	70	S			S	S	S	S	S	S	S		S			
Diesel Fuel		70	S	S	S	S		S	S	S	S	S	S	S	S	S	S
Diethanolamine (DEA)	100	85	S	S	S	S		N	S	N	S	N	S	S	S	S	S
Ethylene Glycol	100	70	S	S	S	S	N	S	S	S	S	S	S	S	S	S	S
Gasoline		70	S	S	S	S	S	S	S	S	S	S	S	S	N	S	S
Grease		70	S	S	S	S	N	S	S	S	S	S	S	S	S	S	S
Hydrochloric Acid	35	70	N	N	N	F	N	S	N	N	N	F	N	N	S	S	S
Hydrogen Peroxide	50	70	N	S	S	N	N	S	F	N	N	S	N	N	S	S	S
Kerosene		70	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ketone Solvents		70	S	S	S	N		N	S	S	S	S	S	S	S	S	S
Lube Oil – Petroleum		70	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Methyl Alcohol	100	70	S	S	S	S	N	N	S	S	S	S	S	S	S	S	S
Mineral Cutting Oils		70	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Monoethanolamine (MEA)		70	S	S	S	F		N		S	S		S	S	S	S	S
Naphtha	100	70	S	S	S	F	S	S	S	S	S	S	S	S	S	S	S
Nitric Acid	50	200	N	S	S	N	N	S	N	N	N	S	N	N	N	N	S
Propane (Gas & Liquid)			S	S	S	S	F	S	F	S	S	S	S	S	S	S	S
Sodium Hydroxide	50	300	F	S	S	F	N	F	N	N	N	N	S	S	S	S	S
Sodium Nitrate		70	S	S	S	F		F	S	S	S	S	S	S	S	S	S
Steam		220	S	S	S	N	N	N		N	S	N	S	S	N	S	S
Sulfuric Acid	10	70	N	N	F	N		S	F		F	S	N	N	S	S	S
Toluene		70	S	S	S	N	S	S	S	S	S	S	S	S	N	S	S
Trichloroethylene	100	150	S	S	S	N	F	S	S	S	S	S	N	N	N	N	S
Turpentine	100	70	S	S	S	S	S	S	S	S	S	S	S	S	F	S	S
Water – Industrial		70	F	S	S	S	S	N	S	S	S	S	S	S	S	S	S
Water – Deionized, Demineralized, Distilled		100	N	S	S	S		S	S		S	S	S	S	N	S	S
Xylene		70	S	S	S	N		S	S	S	S	S	S	S	N	S	S

* DuPont registered trademark

Other Media Options with Micron and Temperature Ratings

- The information contained in this table is intended only as a guide for selecting the proper filter materials. Although the data is believed to be accurate, Graver Technologies assumes no responsibility for it.
- Percent concentration of the fluid tested.
- The temperature of the test fluid, not a recommended maximum.

Standard Sewn End Elements

FEATURES AND BENEFITS

- Polyester felt media for maximum dirt-holding capacity and excellent moisture resistance
- Larger elements are supplied with lifting lugs for easier removal and installation
- Retention ratings from .3 to 750 micron
- Cleanable and recoverable
- Stainless steel and other metal cores available
- Alternative media, backwash and fin spacers also available.

Suffix Number	Description	Micron Rating	Temp Rating
1	Woven Cotton	20	200° F
3	Woven Cotton	5	200° F
7	Polyester Felt	4	200° F
8	Woven Fiberglass	10	700° F
42	Woven Cotton	1	200° F
66	Woven Polyester	2	300° F
100	Woven Polypropylene	15	175° F
101	Woven Polypropylene	10	175° F
105	Fiberglass Felt	3	450° F
142	Polypropylene Felt	5	175° F
169	Polyester Felt	10	300° F
180	Nomex Felt	10	425° F
212	Polyester Felt	50	300° F
707	Woven Polyester	1	300° F

*Can only be used with a molded end element.

Specific Gravity & Viscosity of Common Liquids

SSU	Specific Gravity S. G. & Temp	(° F)	Viscosity SSU @ Temp.	(° F)
Acetone	0.792	68	31.0	68.0
Alcohol				
Ethyl	0.789	68	31.7	63.0
Methyl	0.990	68		
Propyl	0.804	68	35.0	63.0
Carbon Tetrachloride	1.594	68	31.0	68.0
			31.0	100.0
Corn Oil	0.924	60	135.0	130.0
			54.0	212.0
Cotton Seed Oil	0.880-0.930	60	176.0	100.0
			100.0	130.0
Diethylene Glycol	1.120	60	150.0	70.0
Diesel Fuel Oil (2D)	0.82-0.95	60	68.0	60.0
			39.0	130.0
Ethylene Glycol	1.125	60	88.4	70.0
Gasoline	0.680-0.740	60	30.0	60.0
Glycerine — 100%	1.260	68	2950.0	68.6
			813.0	100.0
Kerosene	0.780-0.820	60	35.0	68.0
Jet Fuel (AV)	0.820	60	52.0	-30.0
			35.0	60.0
Molasses, Blackstrap (C)	1.460-1.490	60	12.0M-255.0M	100.0
			6.0M-76.5M	130.0
Oils, Lubricating				
SAE 10	0.880-0.940	60	600.0-900.0	60.0
			110.0-130.0	120.0
SAE 20	0.880-0.940	60	900.0-3.0M	60.0
			130.0-280.0	120.0
SAE 30	0.880-0.940	60	3.0M-4.4M	60.0
			280.0-400.0	120.0
SAE 40	0.880-0.940	60	4.4M-6.0M	60.0
			400.0-550.0	120.0
SAE 50	0.880-0.940	60	6.0M-10.0M	60.0
			500.0M-850.0M	120.0
Turbine Light	0.910	60	350.0	60.0
			150.0	100.0
Turbine Heavy	0.910	60	1400.0	60.0
			330.0	100.0
Propylene Glycol	1.038	68	241.0	70.0
Rosin (Wood)	1.090	60	1.0M-50.0M	100.0
			0.5M-20.0M	200.0
Sodium Hydroxide (caustic soda)				
20%	1.220	60	39.4	65.0
30%	1.330	60	58.1	65.0
40%	1.430	60	110.1	65.0
Sulfuric Acid				
60%	1.500	68	41.0	68.0
95%	1.839	68	75.0	60.0
Turpentine	0.860-0.870	60	33.0	
Varnish, Spar	0.900	60	1425.0	68.0
			650.0	100.0
Water, Fresh	1.000	60	31.0	60.0

Graver Technologies also makes:

- Air Intake Filters
- Air Intake Filter/Silencers
- Air/Gas Pressure Filters
- Vacuum Filters
- Liquid Filters/Strainers
- Smoke/Oil Mist Eliminators
- Filter Separators
- Special and Custom-Designed Filters and Filter Elements
- Lube Oil Filters and Filter Elements

Graver Technologies has representatives in major cities of the United States, Mexico and Canada. Representatives are also located in many other countries around the world.

Consler brand filters are manufactured in Honeoye Falls, NY. For more detailed information about Consler filters, contact your representative or Graver Technologies. Graver has a policy of continued product improvement and reserves the right to change specifications without notice.

Visit our web site at www.gravertech.com.

