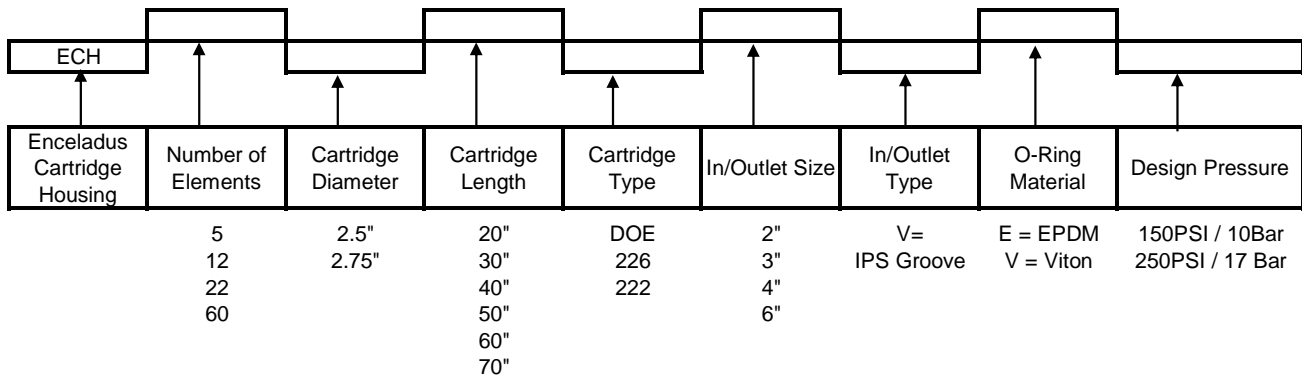




ORDER SPECIFICATION INFORMATION



CURRENT MODELS AVAILABLE:

ECH-5-2.5-20-DOE-2VE-150
 ECH-5-2.5-30-DOE-2VE-150
 ECH-5-2.5-40-DOE-2VE-150

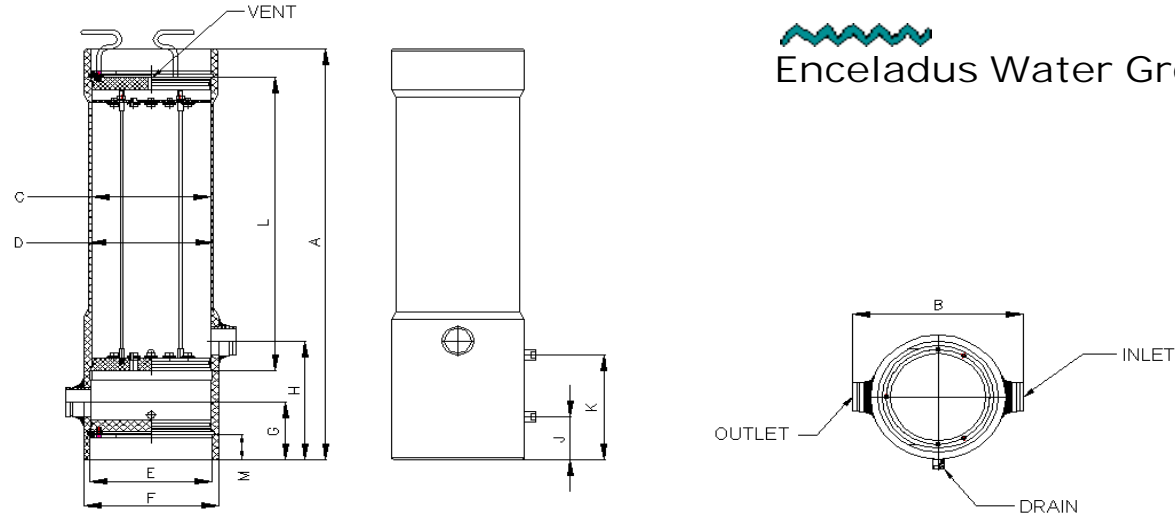
ECH-12-2.5-20-DOE-3VE-150
 ECH-12-2.5-30-DOE-3VE-150
 ECH-12-2.5-40-DOE-3VE-150

ECH-22-2.5-20-DOE-4VE-150
 ECH-22-2.5-30-DOE-4VE-150
 ECH-22-2.5-40-DOE-4VE-150

ECH-60-2.5-40-DOE-6VE-150
 ECH-60-2.5-50-DOE-6VE-150
 ECH-60-2.5-60-DOE-6VE-150
 ECH-60-2.5-70-DOE-6VE-150

Please consult with your sales representative for:

- 1) additional lengths
- 2) larger diameter cartridges
- 3) custom configurations
- 4) packaged skid / manifold systems



Design Specifications (English)

ECH Model Number	# Cartridges	Length Cartridge (inch)	Nominal Dimensions (inches) - See Engineering Drawing for Actual with Tolerances													Vent	Drain w/ Cap	Inlet/Outlet	Weight Empty (lbs)	Weight w/ Water Full (lbs)	Closure Weight (lbs)
			A	B	C	D	E	F	G	H	J	K	L	M							
ECH-5-2.5-20-DOE-2VE-150	5	20	34.5	12.9	8	8.4	8.2	8.4	5.5	11	4.5	10	24.3	2.7	1/4" FNPT	3/4" MNPT	2" IPS Groove	46	94	3	
ECH-5-2.5-30-DOE-2VE-150	5	30	44.5	12.9	8	8.4	8.2	8.4	5.5	11	4.5	10	34.3	2.7	1/4" FNPT	3/4" MNPT	2" IPS Groove	51	116	3	
ECH-5-2.5-40-DOE-2VE-150	5	40	55.5	12.9	8	8.4	8.2	8.4	5.5	11	4.5	10	44.3	2.7	1/4" FNPT	3/4" MNPT	2" IPS Groove	55	138	3	
ECH-12-2.5-20-DOE-3VE-150	12	20	38.8	17	11.8	12.4	12.3	14	6.8	14.4	5	12.6	24.8	2.4	1/4" FNPT	3/4" MNPT	3" IPS Groove	147	260	8	
ECH-12-2.5-30-DOE-3VE-150	12	30	48.8	17	11.8	12.4	12.3	14	6.8	14.4	5	12.6	34.8	2.4	1/4" FNPT	3/4" MNPT	3" IPS Groove	156	308	8	
ECH-12-2.5-40-DOE-3VE-150	12	40	58.8	17	11.8	12.4	12.3	14	6.8	14.4	5	12.6	44.8	2.4	1/4" FNPT	3/4" MNPT	3" IPS Groove	165	356	8	
ECH-22-2.5-20-DOE-4VE-150	22	20	44.3	24.5	17	17.8	17.5	19.4	9	18.6	7	16.6	25.9	3.9	1/2" FNPT	1" MNPT	4" IPS Groove	273	518	24	
ECH-22-2.5-30-DOE-4VE-150	22	30	54.3	24.5	17	17.8	17.5	19.4	9	18.6	7	16.6	35.9	3.9	1/2" FNPT	1" MNPT	4" IPS Groove	288	616	24	
ECH-22-2.5-40-DOE-4VE-150	22	40	64.3	24.5	17	17.8	17.5	19.4	9	18.6	7	16.6	45.9	3.9	1/2" FNPT	1" MNPT	4" IPS Groove	304	714	24	
ECH-60-2.5-40-DOE-6VE-150	60	40	67	34.8	25	26.2	25.9	28	10.8	21.8	7.6	18.4	46.8	3.5	1/2" FNPT	1" MNPT	6" IPS Groove	618	1584	113	
ECH-60-2.5-50-DOE-6VE-150	60	50	77	34.8	25	26.2	25.9	28	10.8	21.8	7.6	18.4	56.8	3.5	1/2" FNPT	1" MNPT	6" IPS Groove	645	1793	113	
ECH-60-2.5-60-DOE-6VE-150	60	60	87	34.8	25	26.2	25.9	28	10.8	21.8	7.6	18.4	66.8	3.5	1/2" FNPT	1" MNPT	6" IPS Groove	671	2002	113	
ECH-60-2.5-70-DOE-6VE-150	60	70	97	34.8	25	26.2	25.9	28	10.8	21.8	7.6	18.4	76.8	3.5	1/2" FNPT	1" MNPT	6" IPS Groove	697	2212	113	

Design Specifications (Metric)

ECH Model Number	# Cartridges	Length Cartridge (inch)	Nominal Dimensions (mm) - See Engineering Drawing for Actual with Tolerances													Vent	Drain w/ Cap	Inlet/Outlet	Weight Empty (kg)	Weight w/ Water Full (kg)	Closure Weight (kg)
			A	B	C	D	E	F	G	H	J	K	L	M							
ECH-5-2.5-20-DOE-2VE-150	5	20	876	328	203	213	208	213	140	279	114	254	617	2.7	1/4" FNPT	3/4" MNPT	2" IPS Groove	21	43	1.4	
ECH-5-2.5-30-DOE-2VE-150	5	30	1130	328	203	213	208	213	140	279	114	254	871	2.7	1/4" FNPT	3/4" MNPT	2" IPS Groove	23	53	1.4	
ECH-5-2.5-40-DOE-2VE-150	5	40	1410	328	203	213	208	213	140	279	114	254	1125	2.7	1/4" FNPT	3/4" MNPT	2" IPS Groove	25	63	1.4	
ECH-12-2.5-20-DOE-3VE-150	12	20	986	432	300	315	312	356	173	366	127	320	630	2.4	1/4" FNPT	3/4" MNPT	3" IPS Groove	67	118	3.8	
ECH-12-2.5-30-DOE-3VE-150	12	30	1240	432	300	315	312	356	173	366	127	320	884	2.4	1/4" FNPT	3/4" MNPT	3" IPS Groove	71	140	3.8	
ECH-12-2.5-40-DOE-3VE-150	12	40	1494	432	300	315	312	356	173	366	127	320	1138	2.4	1/4" FNPT	3/4" MNPT	3" IPS Groove	75	162	3.8	
ECH-22-2.5-20-DOE-4VE-150	22	20	1125	622	432	452	445	493	229	472	178	422	658	3.9	1/2" FNPT	1" MNPT	4" IPS Groove	124	236	11	
ECH-22-2.5-30-DOE-4VE-150	22	30	1379	622	432	452	445	493	229	472	178	422	912	3.9	1/2" FNPT	1" MNPT	4" IPS Groove	131	280	11	
ECH-22-2.5-40-DOE-4VE-150	22	40	1633	622	432	452	445	493	229	472	178	422	1166	3.9	1/2" FNPT	1" MNPT	4" IPS Groove	138	325	11	
ECH-60-2.5-40-DOE-6VE-150	60	40	1702	884	635	665	658	711	274	554	193	467	1189	3.5	1/2" FNPT	1" MNPT	6" IPS Groove	281	720	51	
ECH-60-2.5-50-DOE-6VE-150	60	50	1956	884	635	665	658	711	274	554	193	467	1443	3.5	1/2" FNPT	1" MNPT	6" IPS Groove	293	815	51	
ECH-60-2.5-60-DOE-6VE-150	60	60	2210	884	635	665	658	711	274	554	193	467	1697	3.5	1/2" FNPT	1" MNPT	6" IPS Groove	305	910	51	
ECH-60-2.5-70-DOE-6VE-150	60	70	2464	884	635	665	658	711	274	554	193	467	1951	3.5	1/2" FNPT	1" MNPT	6" IPS Groove	317	1005	51	



**ECH FRP Cartridge Housing Series Throughput
Based on flow of water per 10" cartridge**

English

10 inch Cartridges	ECH Model Number	At 3 gpm per 10 inch (gpm) (MGD)		At 3.5 gpm per 10 inch (gpm) (MGD)		At 4.5 gpm per 10 inch (gpm) (MGD)		At 5 gpm per 10 inch (gpm) (MGD)		At 7 gpm per 10 inch (gpm) (MGD)	
10	ECH-5-2.5-20-DOE-2VE-150	30	0.04	35	0.05	45	0.06	50	0.07	70	0.10
15	ECH-5-2.5-30-DOE-2VE-150	45	0.06	52.5	0.08	67.5	0.10	75	0.11	105	0.15
20	ECH-5-2.5-40-DOE-2VE-150	60	0.09	70	0.10	90	0.13	100	0.14	140	0.20
24	ECH-12-2.5-20-DOE-3VE-150	72	0.10	84	0.12	108	0.16	120	0.17	168	0.24
36	ECH-12-2.5-30-DOE-3VE-150	108	0.16	126	0.18	162	0.23	180	0.26	252	0.36
48	ECH-12-2.5-40-DOE-3VE-150	144	0.21	168	0.24	216	0.31	240	0.35	336	0.48
44	ECH-22-2.5-20-DOE-4VE-150	132	0.19	154	0.22	198	0.29	220	0.32	308	0.44
66	ECH-22-2.5-30-DOE-4VE-150	198	0.29	231	0.33	297	0.43	330	0.48	462	0.67
88	ECH-22-2.5-40-DOE-4VE-150	264	0.38	308	0.44	396	0.57	440	0.63	616	0.89
240	ECH-60-2.5-40-DOE-6VE-150	720	1.04	840	1.21	1080	1.56	1200	1.73	1680	2.42
300	ECH-60-2.5-50-DOE-6VE-150	900	1.30	1050	1.51	1350	1.94	1500	2.16	2100	3.02
360	ECH-60-2.5-60-DOE-6VE-150	1080	1.56	1260	1.81	1620	2.33	1800	2.59	2520	3.63
420	ECH-60-2.5-70-DOE-6VE-150	1260	1.81	1470	2.12	1890	2.72	2100	3.02	2940	4.23

* Actual flow rate based on cartridge selection.

gpm = gallons per minute

MGD = millions of gallons per day

**ECH FRP Cartridge Housing Series Throughput
Based on flow of water per 10" cartridge**

Metric

10 inch Cartridges	ECH Model Number	At .681 m3/h per 10 inch (m3/h) (m3/d)		At .795 m3/h per 10 inch (m3/h) (m3/d)		At 1.02 m3/h per 10 inch (m3/h) (m3/d)		At 1.14 m3/h per 10 inch (m3/h) (m3/d)		At 1.59 m3/h per 10 inch (m3/h) (m3/d)	
10	ECH-5-2.5-20-DOE-2VE-150	7	163	8	191	10	245	11	273	16	381
15	ECH-5-2.5-30-DOE-2VE-150	10	245	12	286	15	368	17	409	24	572
20	ECH-5-2.5-40-DOE-2VE-150	14	327	16	382	20	491	23	545	32	763
24	ECH-12-2.5-20-DOE-3VE-150	16	392	19	458	25	589	27	654	38	915
36	ECH-12-2.5-30-DOE-3VE-150	25	588	29	687	37	883	41	982	57	1373
48	ECH-12-2.5-40-DOE-3VE-150	33	785	38	916	49	1177	55	1309	76	1831
44	ECH-22-2.5-20-DOE-4VE-150	30	719	35	840	45	1079	50	1200	70	1678
66	ECH-22-2.5-30-DOE-4VE-150	45	1079	52	1259	67	1619	75	1799	105	2517
88	ECH-22-2.5-40-DOE-4VE-150	60	1438	70	1679	90	2158	100	2399	140	3356
240	ECH-60-2.5-40-DOE-6VE-150	163	3923	191	4579	245	5887	273	6543	381	9153
300	ECH-60-2.5-50-DOE-6VE-150	204	4903	239	5724	307	7358	341	8179	477	11441
360	ECH-60-2.5-60-DOE-6VE-150	245	5884	286	6869	368	8830	409	9815	572	13729
420	ECH-60-2.5-70-DOE-6VE-150	286	6864	334	8014	429	10302	477	11451	667	16017

* Actual flow rate based on cartridge selection.

m3/h = cubic meters per hour

m3/d = cubic meters per day



Maximum Flow Rates
Based on Inlet/Outlet Size and Design Velocity

English Calculations

ECH Model Number	Flow gpm	Flow MGD	Velocity ft/sec	Area ft2	Inlet (inch)
ECH-5-2.5-XX-DOE-2VE-150	98	0.14	10	0.02	2
ECH-12-2.5-XX-DOE-3VE-150	220	0.32	10	0.05	3
ECH-22-2.5-XX-DOE-4VE-150	392	0.56	10	0.09	4
ECH-60-2.5-XX-DOE-6VE-150	881	1.27	10	0.20	6

ECH Model Number	gpm	MGD	ft/sec	ft2	Inlet (inch)
ECH-5-2.5-XX-DOE-2VE-150	108	0.16	11	0.02	2
ECH-12-2.5-XX-DOE-3VE-150	242	0.35	11	0.05	3
ECH-22-2.5-XX-DOE-4VE-150	431	0.62	11	0.09	4
ECH-60-2.5-XX-DOE-6VE-150	969	1.40	11	0.20	6

gpm = gallons per minute

MGD = millions of gallons per day

Metric Calculations

ECH Model Number	Flow m3/h	Flow m3/d	Velocity m/s	Area m2	Inlet (mm)
ECH-5-2.5-XX-DOE-2VE-150	22	535	3.05	0.002	51
ECH-12-2.5-XX-DOE-3VE-150	50	1203	3.05	0.005	76
ECH-22-2.5-XX-DOE-4VE-150	89	2139	3.05	0.008	102
ECH-60-2.5-XX-DOE-6VE-150	201	4812	3.05	0.018	153

ECH Model Number	m3/h	m3/d	m/s	m2	Inlet (mm)
ECH-5-2.5-XX-DOE-2VE-150	24	587	3.35	0.002	51
ECH-12-2.5-XX-DOE-3VE-150	55	1321	3.35	0.005	76
ECH-22-2.5-XX-DOE-4VE-150	98	2349	3.35	0.008	102
ECH-60-2.5-XX-DOE-6VE-150	220	5285	3.35	0.018	153

m3/h = cubic meters per hour

m3/d = cubic meters per day