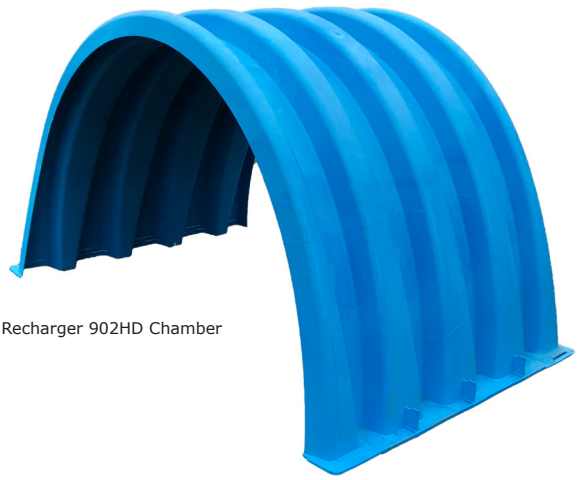
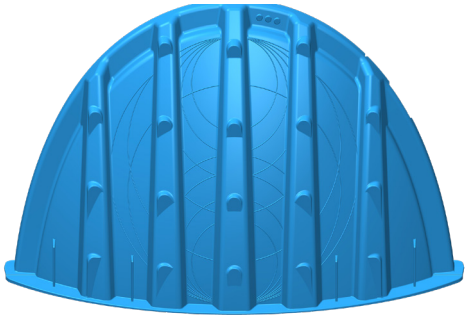
CULTEC RECHARGER® 902HD STORMWATER CHAMBER

The Recharger® 902HD is a 48" (1219 mm) tall, high capacity chamber. Typically when using this model, fewer chambers are required resulting in less labor and a smaller installation area. The Recharger® 902HD has the side portal internal manifold feature. HVLV® FC-48 Feed Connectors are inserted into the side portals to create the internal manifold.



Recharger 902HD Chamber



Recharger 902HD End Cap

Recharger 902HD Chamber	
Size (L x W x H)	4.25' x 78" x 48"
	1.30 m x 1981 mm x 1219 mm
Installed Length	3.67'
	1.12 m
Length Adjustment per Row - with two end caps installed	1.03'
	0.31 m
Length Adjustment per Row - when not using end caps	0.58'
	0.18 m
Chamber Storage	17.31 ft^3/ft
	1.61 m^3/m
	63.47 ft^3/unit
	1.80 m^3/unit
Min. Installed Storage	27.06 ft^3/ft
	2.53 m^3/m
	99.28 ft^3/unit
	2.81 m^3/unit
Min. Area Required	26.58 ft^2
	2.47 m^2
Chamber Weight	83.0 lbs
	37.65 kg
Shipping	15 chambers/skid
	1,370 lbs/skid
	14 skids/48' flatbed
Min. Center-to-Center Spacing	7.25'
	2.21 m
Max. Allowable Cover	8.3'
	2.53 m
Max. Allowable O.D. in Side Portal	10" HDPE, 12" PVC
	250 mm HDPE, 300 mm PVC
Compatible Feed Connector	HVLV FC-48 Feed Connector

Calculations are based on installed chamber length.
All above values are nominal.
Includes 12" (305 mm) stone above crown of chamber and typical stone surround at 7.25' (2.21 m) center-to-center spacing and stone foundation depth as listed in table.
Stone void calculated at 40%.

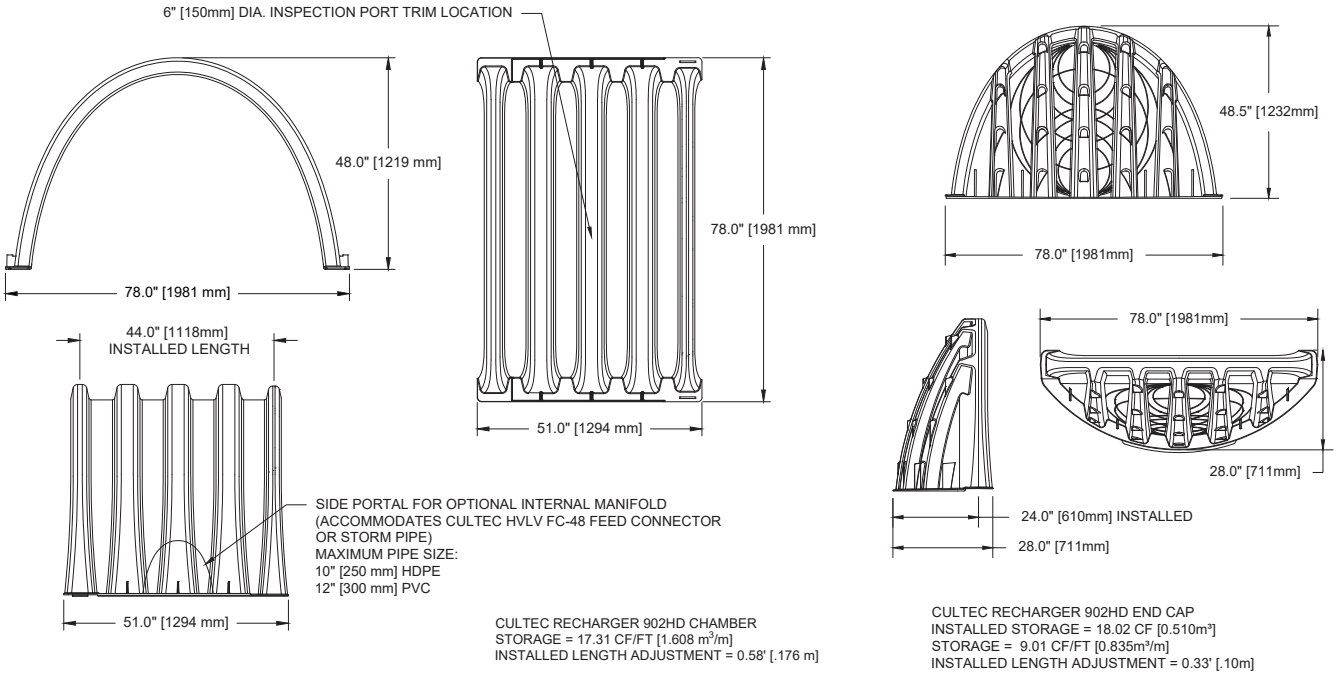
	Stone Foundation Depth		
	9"	12"	18"
	229 mm	305 mm	457 mm
Chamber and Stone Storage Per Chamber	99.28 ft^3	101.94 ft^3	107.26 ft^3
	2.81 m^3	2.89 m^3	3.04 m^3
Min. Effective Depth	5.75'	6.00'	6.5'
	1.75 m	1.83 m	1.98 m
Stone Required Per Chamber	3.32 yd^3	3.56 yd^3	4.05 yd^3
	2.54 m^3	2.72 m^3	3.06 m^3

Recharger 902HD End Cap	
Size (L x W x H)	28.0" x 78.0" x 48.5"
	711 mm x 1982 mm x 1231 mm
Installed Length	24.0"
	610 mm
End Cap Storage	9.01 ft^3/ft
	0.83 m^3/m
	18.02 ft^3/unit
	0.51 m^3/unit
Min. Installed Storage	22.08 ft^3/ft
	2.05 m^3/m
	44.16 ft^3/unit
	1.25 m^3/unit
End Cap Weight	46.0 lbs
	20.86 kg
Shipping	10 end caps/skid
	540 lbs/skid
	14 skids/48' flatbed
Max. Inlet Opening in End Cap	30" HDPE, 36" PVC
	750 mm HDPE, 900 mm PVC

Calculations are based on installed chamber length.
All above values are nominal.
Min. installed storage includes 9" (229 mm) stone base, 12" (305 mm) stone above crown of chamber and typical stone surround at 7.25' (2.21 m) center-to-center spacing.

For more information, contact CULTEC at (203) 775-4416 or visit www.cultec.com.

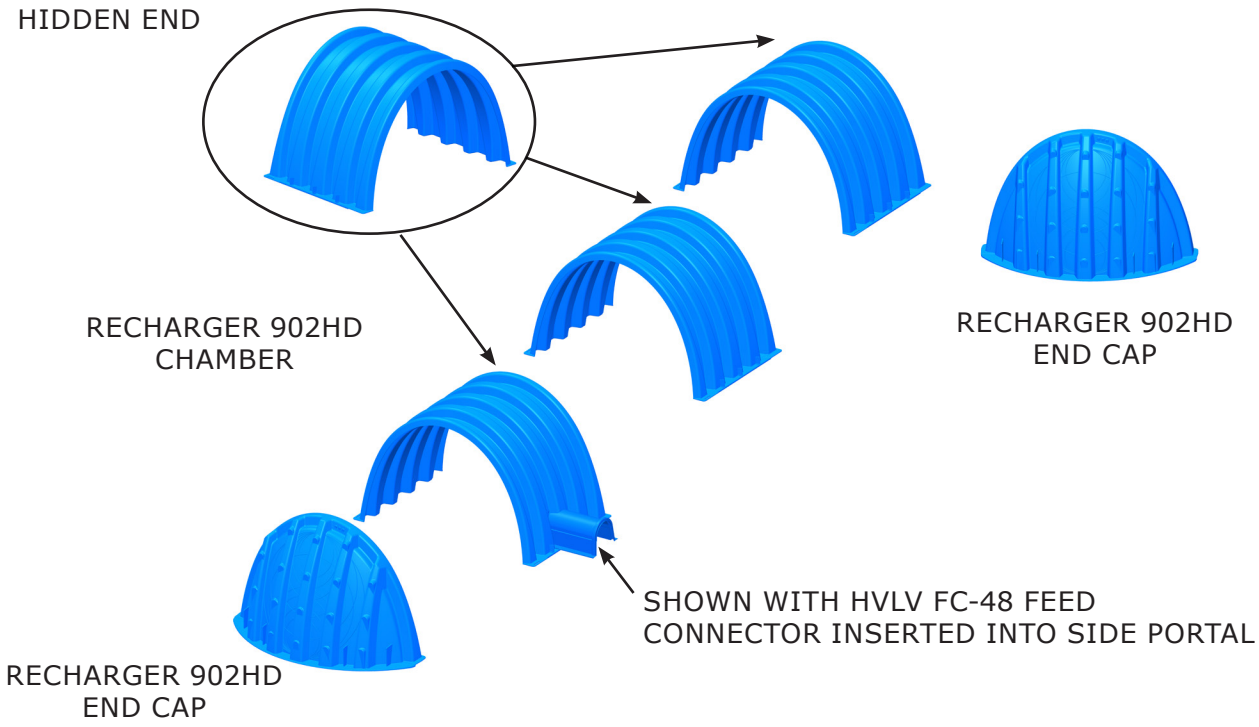
Three View Drawing



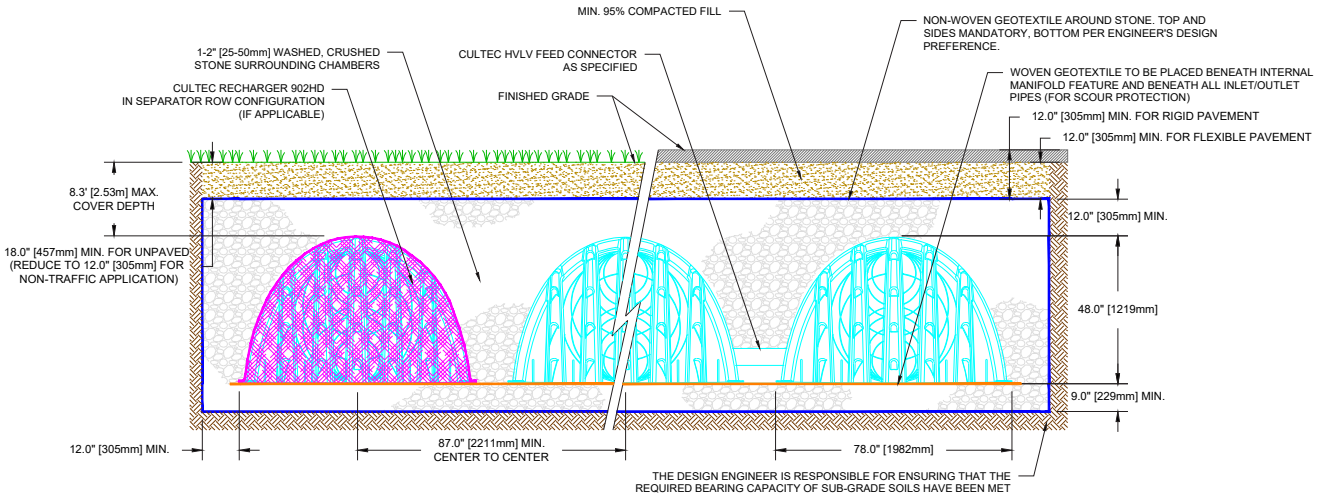
CULTEC RECHARGER 902HD CHAMBER
STORAGE = 17.31 CF/FT [1.608 m^3/m]
INSTALLED LENGTH ADJUSTMENT = 0.58' [.176 m]

CULTEC RECHARGER 902HD END CAP
INSTALLED STORAGE = 18.02 CF [0.510m^3]
STORAGE = 9.01 CF/FT [0.835m^3/m]
INSTALLED LENGTH ADJUSTMENT = 0.33' [.10m]

Typical Interlock Installation

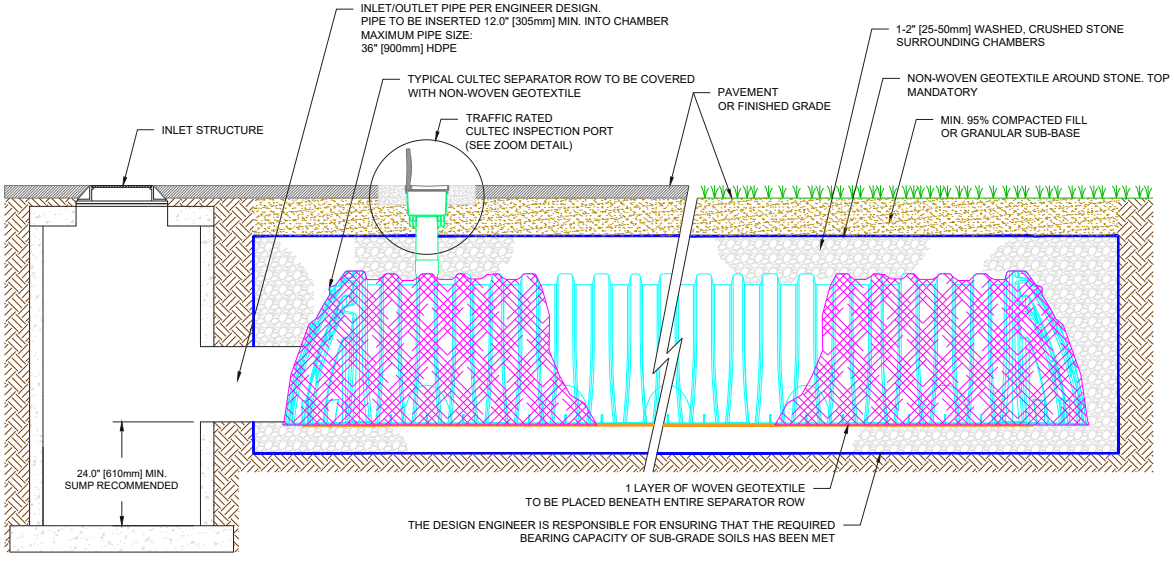


Typical Cross Section for Traffic Application



NOTES:
1. THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS." THE LOAD CONFIGURATION SHALL INCLUDE:
   1.a. INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER
   1.b. MAXIMUM PERMANENT (50-YEAR) COVER LOAD
   1.c. 1-WEEK PARKED AASHTO DESIGN TRUCK LOAD
2. THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS"
3. THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING:
   3.a. THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430
   3.b. THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75
   3.c. THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95

Typical Profile View for Traffic Application



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CULTEC RECHARGER® 902HD STORMWATER CHAMBER

Recharger® 902HD Bare Chamber Storage Volumes

Elevation		Incremental Storage Volume				Cumulative Storage	
in.	mm	ft³/ft	m³/m	ft³	m³	ft³	m³
48	1219	0.020	0.002	0.073	0.002	63.470	1.797
47	1194	0.050	0.005	0.183	0.005	63.397	1.795
46	1168	0.070	0.007	0.257	0.007	63.213	1.790
45	1143	0.120	0.011	0.440	0.012	62.957	1.783
44	1118	0.160	0.015	0.587	0.017	62.517	1.770
43	1092	0.200	0.019	0.733	0.021	61.930	1.754
42	1067	0.220	0.020	0.807	0.023	61.197	1.733
41	1041	0.240	0.022	0.880	0.025	60.390	1.710
40	1016	0.270	0.025	0.990	0.028	59.510	1.685
39	991	0.270	0.025	0.990	0.028	58.520	1.657
38	965	0.290	0.027	1.063	0.030	57.530	1.629
37	940	0.300	0.028	1.100	0.031	56.467	1.599
36	914	0.310	0.029	1.137	0.032	55.367	1.568
35	889	0.330	0.031	1.210	0.034	54.230	1.536
34	864	0.340	0.032	1.247	0.035	53.020	1.502
33	838	0.350	0.033	1.283	0.036	51.773	1.466
32	813	0.350	0.033	1.283	0.036	50.490	1.430
31	787	0.360	0.033	1.320	0.037	49.207	1.394
30	762	0.370	0.034	1.357	0.038	47.887	1.356
29	737	0.380	0.035	1.393	0.039	46.530	1.318
28	711	0.390	0.036	1.430	0.040	45.137	1.278
27	686	0.390	0.036	1.430	0.040	43.707	1.238
26	660	0.400	0.037	1.467	0.042	42.277	1.197
25	635	0.400	0.037	1.467	0.042	40.810	1.156
24	610	0.410	0.038	1.503	0.043	39.343	1.114
23	584	0.410	0.038	1.503	0.043	37.840	1.072
22	559	0.410	0.038	1.503	0.043	36.337	1.029
21	533	0.420	0.039	1.540	0.044	34.833	0.986
20	508	0.420	0.039	1.540	0.044	33.293	0.943
19	483	0.420	0.039	1.540	0.044	31.753	0.899
18	457	0.430	0.040	1.577	0.045	30.213	0.856
17	432	0.430	0.040	1.577	0.045	28.637	0.811
16	406	0.440	0.041	1.613	0.046	27.060	0.766
15	381	0.440	0.041	1.613	0.046	25.447	0.721
14	356	0.450	0.042	1.650	0.047	23.833	0.675
13	330	0.450	0.042	1.650	0.047	22.183	0.628
12	305	0.450	0.042	1.650	0.047	20.533	0.582
11	279	0.450	0.042	1.650	0.047	18.883	0.535
10	254	0.460	0.043	1.687	0.048	17.233	0.488
9	229	0.460	0.043	1.687	0.048	15.547	0.440
8	203	0.460	0.043	1.687	0.048	13.860	0.393
7	178	0.460	0.043	1.687	0.048	12.173	0.345
6	152	0.470	0.044	1.723	0.049	10.487	0.297
5	127	0.470	0.044	1.723	0.049	8.763	0.248
4	102	0.480	0.045	1.760	0.050	7.040	0.199
3	76	0.480	0.045	1.760	0.050	5.280	0.150
2	51	0.480	0.045	1.760	0.050	3.520	0.100
1	25	0.480	0.045	1.760	0.050	1.760	0.050
Total		**17.310**	**1.608**	**63.470**	**1.797**	**63.470**	**1.797**

Calculations are based on installed chamber length of 3.67' (1.12 m).

Recharger® 902HD Bare End Cap Storage Volumes

Elevation		Incremental Storage Volume				Cumulative Storage	
in.	mm	ft³/ft	m³/m	ft³	m³	ft³	m³
48	1219	0.010	0.001	0.020	0.0006	18.020	0.5103
47	1194	0.015	0.001	0.030	0.0008	18.000	0.5097
46	1168	0.020	0.002	0.040	0.0011	17.970	0.5088
45	1143	0.025	0.002	0.050	0.0014	17.930	0.5077
44	1118	0.030	0.003	0.060	0.0017	17.880	0.5063
43	1092	0.040	0.004	0.080	0.0023	17.820	0.5046
42	1067	0.050	0.005	0.100	0.0028	17.740	0.5023
41	1041	0.055	0.005	0.110	0.0031	17.640	0.4995
40	1016	0.065	0.006	0.130	0.0037	17.530	0.4964
39	991	0.070	0.007	0.140	0.0040	17.400	0.4927
38	965	0.080	0.007	0.160	0.0045	17.260	0.4887
37	940	0.085	0.008	0.170	0.0048	17.100	0.4842
36	914	0.095	0.009	0.190	0.0054	16.930	0.4794
35	889	0.105	0.010	0.210	0.0059	16.740	0.4740
34	864	0.115	0.011	0.230	0.0065	16.530	0.4681
33	838	0.130	0.012	0.260	0.0074	16.300	0.4615
32	813	0.140	0.013	0.280	0.0079	16.040	0.4542
31	787	0.150	0.014	0.300	0.0085	15.760	0.4463
30	762	0.155	0.014	0.310	0.0088	15.460	0.4378
29	737	0.165	0.015	0.330	0.0093	15.150	0.4290
28	711	0.175	0.016	0.350	0.0099	14.820	0.4196
27	686	0.180	0.017	0.360	0.0102	14.470	0.4097
26	660	0.190	0.018	0.380	0.0108	14.110	0.3995
25	635	0.195	0.018	0.390	0.0110	13.730	0.3888
24	610	0.200	0.019	0.400	0.0113	13.340	0.3777
23	584	0.210	0.020	0.420	0.0119	12.940	0.3664
22	559	0.215	0.020	0.430	0.0122	12.520	0.3545
21	533	0.225	0.021	0.450	0.0127	12.090	0.3423
20	508	0.230	0.021	0.460	0.0130	11.640	0.3296
19	483	0.240	0.022	0.480	0.0136	11.180	0.3166
18	457	0.245	0.023	0.490	0.0139	10.700	0.3030
17	432	0.250	0.023	0.500	0.0142	10.210	0.2891
16	406	0.255	0.024	0.510	0.0144	9.710	0.2749
15	381	0.265	0.025	0.530	0.0150	9.200	0.2605
14	356	0.270	0.025	0.540	0.0153	8.670	0.2455
13	330	0.275	0.026	0.550	0.0156	8.130	0.2302
12	305	0.280	0.026	0.560	0.0159	7.580	0.2146
11	279	0.285	0.026	0.570	0.0161	7.020	0.1988
10	254	0.295	0.027	0.590	0.0167	6.450	0.1826
9	229	0.300	0.028	0.600	0.0170	5.860	0.1659
8	203	0.310	0.029	0.620	0.0176	5.260	0.1489
7	178	0.315	0.029	0.630	0.0178	4.640	0.1314
6	152	0.320	0.030	0.640	0.0181	4.010	0.1135
5	127	0.325	0.030	0.650	0.0184	3.370	0.0954
4	102	0.325	0.030	0.650	0.0184	2.720	0.0770
3	76	0.330	0.031	0.660	0.0187	2.070	0.0586
2	51	0.335	0.031	0.670	0.0190	1.410	0.0399
1	25	0.370	0.034	0.740	0.0210	0.740	0.0210
Total		**9.010**	**0.837**	**18.020**	**0.510**	**18.020**	**0.5103**

Calculations are based on installed chamber length of 2' (0.61 m).

For more information, contact CULTEC at (203) 775-4416 or visit www.cultec.com.

CULTEC Recharger® 902HD Specifications

GENERAL

CULTEC Recharger® 902HD chambers are designed for underground stormwater management. The chambers may be used for retention, recharging, detention or controlling the flow of on-site stormwater runoff.

CHAMBER PARAMETERS

1. The chambers shall be manufactured in the U.S.A. by CULTEC of Brookfield, CT (cultec.com, 203-775-4416).
2. The chambers shall be designed and tested in accordance with ASTM F2787 "Standard Practice for Structural Design of Thermoplastic Corrugated Wall Stormwater Collection Chambers". The load configuration shall include:
    a. Instantaneous AASHTO Design Truck live load at minimum cover
    b. Maximum permanent (50-year) cover load
    c. 1-week parked AASHTO design truck load
3. The chambers shall meet the requirements of ASTM F3430-20 "Standard Specification for Cellular Polypropylene (PP) Corrugated Wall Stormwater Collection Chambers".
4. The installed chamber system shall provide resistance to the loads and load factors as defined in the AASHTO LRFD Bridge Design Specifications Section 12.12, when installed according to CULTEC's recommended installation instructions. The structural design of the chambers shall include the following:
    a. The Creep Modulus shall be 50-year as specified in ASTM F3430
    b. The minimum safety factor for live loads shall be 1.75
    c. The minimum safety factor for dead loads shall be 1.95
5. The chamber shall be structural foam injection molded of blue virgin high molecular weight impact-modified polypropylene.
6. The chamber shall be arched in shape.
7. The chamber shall be open-bottomed.
8. The chamber shall be joined using an interlocking overlapping rib method. Connections must be fully shouldered overlapping ribs, having no separate couplings.
9. The nominal chamber dimensions of the CULTEC Recharger® 902HD shall be 48 inches (1219 mm) tall, 78 inches (1981 mm) wide and 4.25 feet (1.30 m) long. The installed length of a joined Recharger 902HD shall be 3.67 feet (1.12 m).
10. Multiple chambers may be connected to form different length rows. Each row shall begin and end with a separately formed CULTEC Recharger® 902HD End Cap. Maximum inlet opening on the end cap is 30 inches (750 mm) HDPE or 36 inches (900 mm) PVC.
11. The chamber shall have two side portals to accept CULTEC HVLV™ FC-48 Feed Connectors to create an internal manifold. Maximum allowable pipe size in the side portal is 10 inches (250 mm) HDPE and 12 inches (300 mm) PVC.
12. The nominal chamber dimensions of the CULTEC HVLV™ FC-48 Feed Connector shall be 12 inches (305 mm) tall, 16 inches (406 mm) wide and 49 inches (1245 mm) long.
13. The nominal storage volume of the Recharger 902HD chamber shall be 17.31 ft^3 / ft (1.61 m^3 / m) - without stone. The nominal storage volume of a joined Recharger 902HD shall be 63.47 ft^3 / unit (1.80 m^3 / unit) - without stone.
14. The nominal storage volume of the HVLV™ FC-48 Feed Connector shall be 0.913 ft^3 / ft (0.085 m^3 / m) - without stone.
15. The Recharger 902HD chamber shall have 5 corrugations.
16. The chamber shall be capable of accepting a 6 inch (150 mm) inspection port opening at the top center of each chamber, centered on the corrugation crest.
17. The chamber shall be manufactured in a facility employing CULTEC's Quality Control and Assurance Procedures.
18. Maximum allowable cover over the top of the chamber shall be 8.3 feet (2.53 m).
19. The installed chamber system shall be structurally designed to provide resistance to live loads as defined by the AASHTO H-20/HL-93 specification when installed according to CULTEC's recommended installation instructions.

END CAP PARAMETERS

1. The CULTEC Recharger® 902HD End Cap (referred to as 'end cap') shall be manufactured in the U.S.A. by CULTEC of Brookfield, CT (cultec.com, 203-775-4416).
2. The end cap shall be structural foam injection molded of blue virgin high molecular weight impact-modified polypropylene.
3. The end cap shall be arched in shape.
4. The end cap shall be joined at the beginning and end of each row of chambers using an interlocking overlapping rib method. Connections must be fully shouldered overlapping ribs, having no separate couplings.
5. The end cap shall have 5 corrugations.
6. The nominal dimensions of the end cap shall be 48.5 inches (1231 mm) tall, 78 inches (1982 mm) wide and 28.0 inches (711 mm) long. When joined with a Recharger 902HD Chamber, the installed length of the end cap shall be 24.0 inches (610 mm).
7. The nominal storage volume of the end cap shall be 9.01 ft^3 / ft (0.83 m^3 / m) - without stone. The nominal storage volume of an interlocked end cap shall be 18.02 ft^3 / unit (0.51 m^3 / unit) - without stone.
8. Maximum inlet opening on the end cap is 30 inches (750 mm) HDPE or 36 inches (900 mm) PVC.
9. The end cap shall provide resistance to the loads and load factors as defined in the AASHTO LRFD Bridge Design Specifications Section 12.12.