

innovision[®] **OPTICS**

35mm Probe II+ Lens System

Manual and Depth of Field Charts



For additional technical support, please call 310-453-4866

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This manual is available for download from the website.

35mm Probe II+ Lens System

Hints, Tips and Notes

Tighten the taking lens fully against the module so that the O-Ring properly seals. Failure to fully tighten the lenses will cause a loss of infinity focus.

When used underwater, it is important that all O-Rings are installed and they should be lightly greased to prevent them from “bunching up” while the modules are tightened together. The lens system is waterproof with all modules to within 1” of the focus ring. Newer Probe models have a red ring around the relay at this point and are marked “Do not submerge beyond this point” Do not let water into the focus and aperture rings. There are no seals there so water can enter the relay and damage the whole lens system.

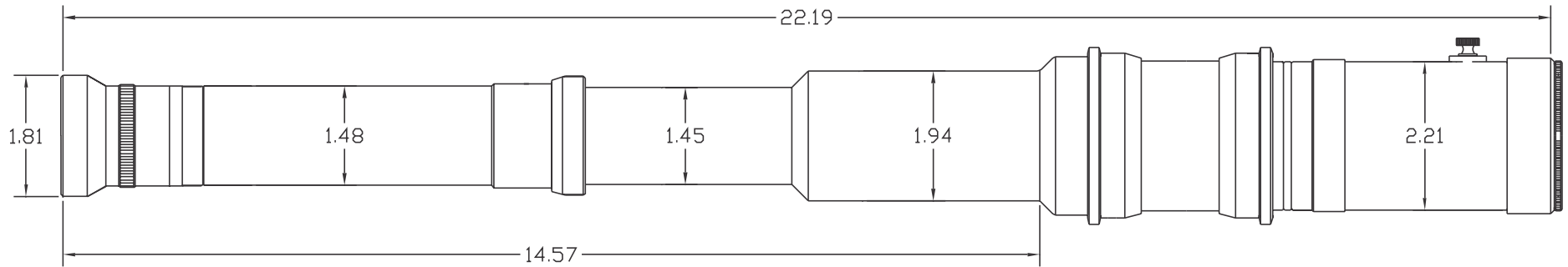
When using the Close Focus Shims, the following instructions apply:

1. Remove the O-Ring and replace it with the close focus shim of your choice.
2. Caution: The lens system will not be waterproof when using close focus shims
3. The use of shims will cause infinity focus to be lost to a varying degree.
4. The use of shims will cause depth of field to be narrowed. (this can be used for dramatic effect as well)
5. The thicker shims have more close focus effect and narrow DOF effect than the thinner shims.
6. Start testing with the thinnest shim and work up to the thicker shims.
7. The engraved numbers correlate to the shim thickness, for example, the shim marked 30 is 0.030” thick.
8. Only use 1 shim at a time, it is possible to have a lens fall off the barrel if you stack 2 or more shims. The thickest shim available is the maximum amount you can extend the lens while still having enough threads to hold the lens in place.

Caution: The lens system is not waterproof when using close focus shims

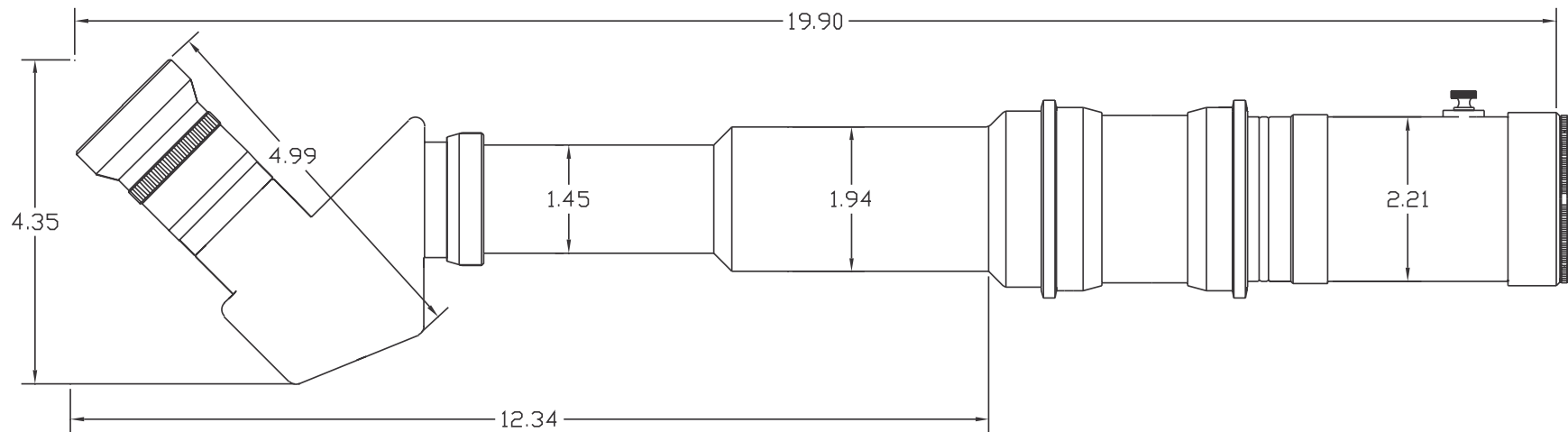
35mm Probe II+ Lens System

Direct View Configuration



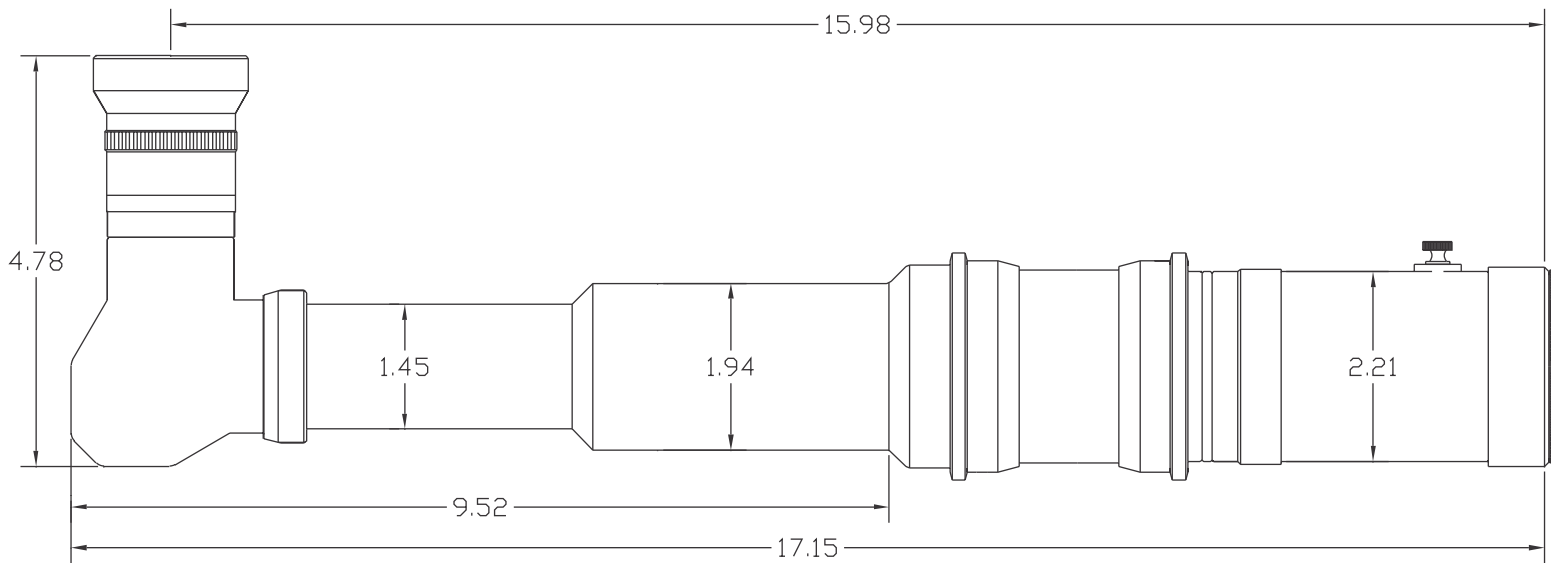
35mm Probe II+ Lens System

45 Degree View Configuration



35mm Probe II+ Lens System

90 Degree View Configuration



35mm Probe II Plus Objective Lens Coverage

Lens	Format @ Full Aperature	T-Stop @ Format Corner	Minimum Focus (from front glass)
9mm	TV Safe	T 32	1/4"
12mm	Academy	T 32	1/2"
16mm	Full	T 32	1 1/4"
20mm	Full	T 22	2"
32mm	Full	T 32	5"
40mm	Full	T 32	11"

Tips and Techniques for Close Focus shim Use

Remove "O" Ring from Probe II focusing Relay

Mount Shim between Objective Lens and Relay

Lens is NOT WATERPROOF when Using Shims

Infinity Focus will be lost

Depth of field will become more narrow as a thicker shim is used

Only one shim should be used - Do not combine shims

Shims->	No Shim	10	20	30	40	50	75	100
9mm	Front Element	Not Recommended						
12mm	1/2"	Not Recommended						
16mm	1 1/4"	7/8"	3/4"	5/8"	1/2"	3/8"	1/4"	1/8"
20mm	2"	1 3/8"	1 1/4"	1"	3/4"	1/2"	1/4"	1/8"
32mm	6"	4"	3 3/4"	3 1/4"	3"	2 1/2"	1 3/4"	1 1/2"

This minimum focus Data is Courtesy of Clairmont Camera. Please verify the minimum focus with your particular Camera / Lens / T Stop during camera prep if the absolute minimum focus is critical.

35mm Probe II Plus LENS: 9 mm

Circle of Confusion: 0.001

T-Stop

Distance(in)	1	2	3	4	5	6	7	8	9	
6.3	Near	0.952	1.818	2.607	3.331	3.997	4.612	5.180	5.708	6.200
	Far	1.053	2.223	3.532	5.004	6.675	8.585	10.790	13.365	16.412
8	Near	0.940	1.774	2.519	3.188	3.792	4.341	4.841	5.299	5.720
	Far	1.068	2.292	3.709	5.368	7.338	9.714	12.636	16.318	21.101
11	Near	0.919	1.702	2.376	2.962	3.477	3.933	4.339	4.703	5.032
	Far	1.096	2.425	4.070	6.158	8.898	12.650	18.102	26.748	42.559
16	Near	0.887	1.594	2.170	2.649	3.054	3.400	3.700	3.961	4.192
	Far	1.146	2.684	4.857	8.159	13.782	25.492	64.859	INFINITY	INFINITY
22	Near	0.851	1.481	1.966	2.352	2.665	2.925	3.144	3.331	3.492
	Far	1.212	3.079	6.325	13.374	40.369	INFINITY	INFINITY	INFINITY	INFINITY

T-Stop

Distance(in)	10	11	12	15	18	21	24	30	36	
6.3	Near	6.659	7.088	7.490	8.558	9.458	10.225	10.888	11.974	12.828
	Far	20.072	24.552	30.162	60.652	185.997	INFINITY	INFINITY	INFINITY	INFINITY
8	Near	6.108	6.467	6.800	7.670	8.384	8.982	9.489	10.304	10.929
	Far	27.563	36.779	50.984	339.310	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY
11	Near	5.330	5.602	5.850	6.482	6.985	7.395	7.735	8.268	8.666
	Far	80.738	303.511	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY
16	Near	4.397	4.580	4.744	5.152	5.465	5.712	5.913	6.220	6.443
	Far	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY
22	Near	3.633	3.757	3.868	4.134	4.333	4.487	4.611	4.795	4.926
	Far	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY

35mm Probe II Plus LENS: 12 mm

Circle of Confusion: 0.001

Distance(in)		1	2	3	4	5	6	7	8	9
T-Stop	6.3 Near	0.973	1.893	2.766	3.594	4.382	5.131	5.845	6.526	7.177
	Far	1.029	2.120	3.278	4.509	5.822	7.223	8.724	10.333	12.065
8	Near	0.965	1.866	2.709	3.498	4.240	4.938	5.596	6.217	6.805
	Far	1.037	2.154	3.361	4.669	6.092	7.644	9.344	11.216	13.286
11	Near	0.953	1.821	2.614	3.341	4.012	4.631	5.205	5.738	6.235
	Far	1.052	2.219	3.521	4.982	6.635	8.519	10.687	13.207	16.174
16	Near	0.933	1.749	2.469	3.109	3.681	4.195	4.661	5.084	5.471
	Far	1.077	2.335	3.822	5.608	7.793	10.528	14.050	18.756	25.364
22	Near	0.910	1.671	2.315	2.869	3.349	3.770	4.142	4.473	4.769
	Far	1.109	2.491	4.260	6.604	9.859	14.684	22.578	37.830	79.713

Distance(in)		10	11	12	15	18	21	24	30	36
T-Stop	6.3 Near	7.799	8.394	8.964	10.538	11.936	13.185	14.308	16.245	17.856
	Far	13.933	15.953	18.146	26.014	36.590	51.564	74.400	195.787	INFINITY
8	Near	7.361	7.889	8.391	9.755	10.941	11.982	12.902	14.456	15.718
	Far	15.587	18.160	21.057	32.442	50.727	84.913	171.690	INFINITY	INFINITY
11	Near	6.699	7.133	7.541	8.624	9.538	10.320	10.995	12.104	12.977
	Far	19.717	24.023	29.368	57.525	159.426	INFINITY	INFINITY	INFINITY	INFINITY
16	Near	5.825	6.150	6.451	7.228	7.859	8.382	8.822	9.522	10.054
	Far	35.316	52.017	85.845	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY
22	Near	5.036	5.278	5.498	6.052	6.488	6.841	7.131	7.582	7.915
	Far	697.404	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY

35mm Probe II Plus LENS: 16 mm

Circle of Confusion: 0.001

T-Stop

Distance(in)	1	2	3	4	5	6	7	8	9	
6.3	Near	0.984	1.938	2.864	3.761	4.632	5.478	6.300	7.098	7.875
	Far	1.016	2.066	3.150	4.271	5.431	6.632	7.875	9.164	10.500
8	Near	0.980	1.922	2.829	3.701	4.542	5.353	6.134	6.889	7.618
	Far	1.021	2.084	3.193	4.351	5.561	6.826	8.150	9.538	10.995
11	Near	0.973	1.895	2.770	3.601	4.391	5.144	5.862	6.548	7.203
	Far	1.029	2.117	3.272	4.499	5.805	7.197	8.685	10.280	11.992
16	Near	0.961	1.851	2.676	3.444	4.161	4.831	5.459	6.049	6.604
	Far	1.042	2.175	3.413	4.769	6.263	7.915	9.753	11.810	14.127
22	Near	0.947	1.800	2.572	3.274	3.915	4.502	5.043	5.542	6.004
	Far	1.059	2.249	3.599	5.140	6.918	8.991	11.440	14.377	17.964

T-Stop

Distance(in)	10	11	12	15	18	21	24	30	36	
6.3	Near	8.630	9.365	10.080	12.115	13.999	15.749	17.378	20.321	22.907
	Far	11.887	13.328	14.824	19.689	25.203	31.504	38.775	57.286	84.028
8	Near	8.322	9.003	9.662	11.517	13.207	14.754	16.174	18.693	20.860
	Far	12.525	14.135	15.830	21.503	28.253	36.420	46.500	75.918	131.293
11	Near	7.830	8.430	9.005	10.595	12.008	13.273	14.412	16.379	18.018
	Far	13.835	15.826	17.982	25.677	35.927	50.258	71.711	178.202	17838.340
16	Near	7.126	7.620	8.087	9.347	10.430	11.371	12.197	13.577	14.684
	Far	16.757	19.768	23.250	37.959	65.647	137.051	743.955	INFINITY	INFINITY
22	Near	6.433	6.833	7.206	8.189	9.009	9.703	10.298	11.264	12.016
	Far	22.443	28.196	35.855	89.101	8919.170	INFINITY	INFINITY	INFINITY	INFINITY

35mm Probe II Plus LENS: 20 mm

Circle of Confusion: 0.001

Distance(in)		1	2	3	4	5	6	7	8	9
T-Stop	6.3 Near	0.990	1.960	2.911	3.844	4.758	5.655	6.535	7.399	8.246
	Far	1.010	2.041	3.094	4.169	5.268	6.390	7.536	8.708	9.906
8	Near	0.987	1.950	2.888	3.804	4.697	5.569	6.420	7.251	8.064
	Far	1.013	2.053	3.121	4.218	5.345	6.503	7.695	8.921	10.182
11	Near	0.983	1.931	2.848	3.735	4.593	5.423	6.227	7.006	7.761
	Far	1.018	2.074	3.169	4.306	5.487	6.715	7.993	9.323	10.710
16	Near	0.975	1.902	2.784	3.626	4.429	5.196	5.929	6.631	7.304
	Far	1.026	2.109	3.252	4.460	5.741	7.099	8.543	10.081	11.723
22	Near	0.966	1.867	2.711	3.503	4.247	4.947	5.607	6.231	6.822
	Far	1.037	2.153	3.357	4.662	6.078	7.623	9.313	11.171	13.223

Distance(in)		10	11	12	15	18	21	24	30	36
T-Stop	6.3 Near	9.078	9.894	10.696	13.016	15.217	17.307	19.295	22.991	26.358
	Far	11.131	12.384	13.666	17.697	22.029	26.697	31.741	43.155	56.765
8	Near	8.857	9.633	10.391	12.568	14.607	16.523	18.325	21.628	24.582
	Far	11.481	12.820	14.198	18.600	23.445	28.805	34.766	48.947	67.229
11	Near	8.493	9.204	9.894	11.847	13.643	15.300	16.833	19.579	21.969
	Far	12.157	13.667	15.246	20.440	26.445	33.470	41.798	64.138	99.643
16	Near	7.949	8.568	9.163	10.814	12.291	13.619	14.821	16.909	18.662
	Far	13.478	15.360	17.383	24.474	33.614	45.845	63.051	132.856	507.259
22	Near	7.381	7.912	8.416	9.789	10.984	12.033	12.962	14.531	15.807
	Far	15.500	18.042	20.899	32.069	49.821	82.405	161.737	INFINITY	INFINITY

35mm Probe II Plus LENS: 32 mm

Circle of Confusion: 0.001

Distance(in)		1	2	3	4	5	6	7	8	9
6.3	Near	0.996	1.984	2.965	3.937	4.903	5.860	6.811	7.754	8.690
	Far	1.004	2.016	3.036	4.065	5.101	6.146	7.200	8.262	9.333
8	Near	0.995	1.980	2.955	3.921	4.877	5.824	6.761	7.690	8.609
	Far	1.005	2.020	3.046	4.082	5.129	6.187	7.256	8.336	9.428
11	Near	0.993	1.973	2.939	3.892	4.833	5.760	6.676	7.580	8.472
	Far	1.007	2.028	3.064	4.114	5.179	6.260	7.357	8.470	9.599
16	Near	0.990	1.960	2.912	3.845	4.760	5.658	6.539	7.403	8.251
	Far	1.010	2.041	3.094	4.168	5.265	6.386	7.531	8.702	9.898
22	Near	0.986	1.946	2.880	3.790	4.676	5.539	6.381	7.201	8.002
	Far	1.014	2.057	3.130	4.235	5.372	6.544	7.752	8.998	10.283

Distance(in)		10	11	12	15	18	21	24	30	36
6.3	Near	9.618	10.540	11.454	14.157	16.800	19.384	21.913	26.808	31.499
	Far	10.413	11.502	12.600	15.950	19.385	22.910	26.527	34.055	42.002
8	Near	9.520	10.422	11.316	13.946	16.503	18.990	21.410	26.060	30.471
	Far	10.531	11.646	12.773	16.227	19.796	23.486	27.303	35.344	43.980
11	Near	9.352	10.221	11.079	13.587	16.004	18.332	20.577	24.836	28.812
	Far	10.745	11.908	13.089	16.740	20.565	24.577	28.788	37.875	47.968
16	Near	9.084	9.902	10.705	13.030	15.235	17.331	19.325	23.034	26.414
	Far	11.121	12.372	13.651	17.672	21.990	26.639	31.660	43.006	56.506
22	Near	8.783	9.545	10.289	12.418	14.406	16.265	18.009	21.189	24.016
	Far	11.609	12.979	14.394	18.937	23.984	29.622	35.964	51.355	71.855

35mm Probe II Plus LENS: 40 mm

		Circle of Confusion:							0.001	
Distance(in)		1	2	3	4	5	6	7	8	9
T-Stop	6.3 Near	0.997	1.990	2.977	3.960	4.937	5.910	6.878	7.841	8.799
	Far	1.003	2.010	3.023	4.041	5.064	6.093	7.127	8.166	9.211
T-Stop	8 Near	0.997	1.987	2.971	3.949	4.921	5.886	6.845	7.799	8.746
	Far	1.003	2.013	3.029	4.052	5.082	6.118	7.162	8.212	9.269
T-Stop	11 Near	0.996	1.982	2.961	3.930	4.892	5.844	6.789	7.726	8.655
	Far	1.004	2.018	3.040	4.072	5.113	6.164	7.224	8.294	9.374
T-Stop	16 Near	0.994	1.975	2.943	3.899	4.844	5.776	6.698	7.607	8.506
	Far	1.006	2.026	3.059	4.106	5.167	6.242	7.331	8.435	9.555
T-Stop	22 Near	0.991	1.965	2.922	3.863	4.788	5.697	6.591	7.470	8.335
	Far	1.009	2.036	3.082	4.147	5.232	6.337	7.463	8.611	9.781

Distance(in)		10	11	12	15	18	21	24	30	36
T-Stop	6.3 Near	9.752	10.701	11.645	14.449	17.213	19.936	22.621	27.876	32.984
	Far	10.261	11.316	12.377	15.594	18.863	22.183	25.558	32.475	39.624
T-Stop	8 Near	9.688	10.623	11.553	14.308	17.012	19.668	22.275	27.353	32.254
	Far	10.333	11.405	12.483	15.763	19.110	22.526	26.014	33.214	40.730
T-Stop	11 Near	9.575	10.488	11.394	14.064	16.669	19.211	21.691	26.477	31.043
	Far	10.464	11.564	12.675	16.069	19.562	23.157	26.859	34.605	42.841
T-Stop	16 Near	9.394	10.271	11.138	13.676	16.127	18.494	20.782	25.135	29.215
	Far	10.690	11.840	13.007	16.607	20.365	24.291	28.397	37.200	46.891
T-Stop	22 Near	9.185	10.022	10.845	13.238	15.522	17.702	19.787	23.694	27.286
	Far	10.973	12.189	13.430	17.302	21.420	25.808	30.492	40.879	52.891