



HD Probe Lens System

Manual and Depth of Field Charts



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

www.innovision-optics.com

This manual is available for download from the website.

HD Probe 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.

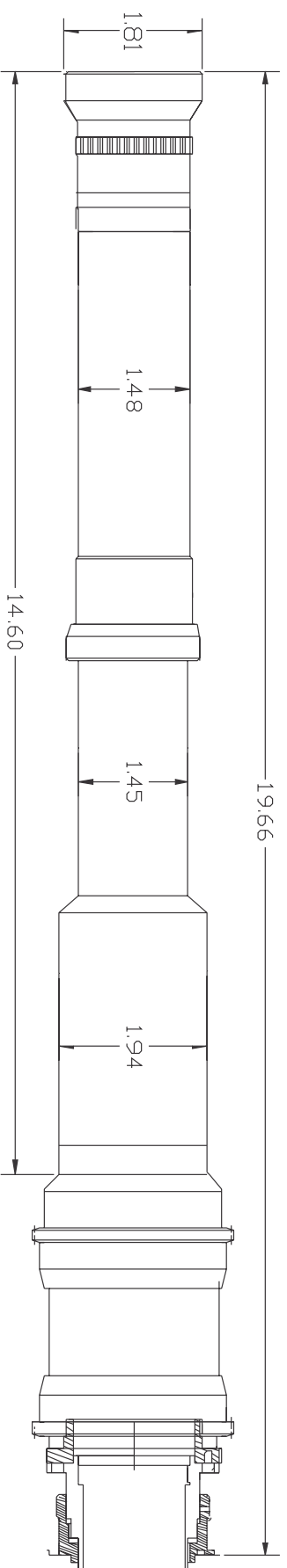
When using the Close Focus Shims, the following instructions apply:

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

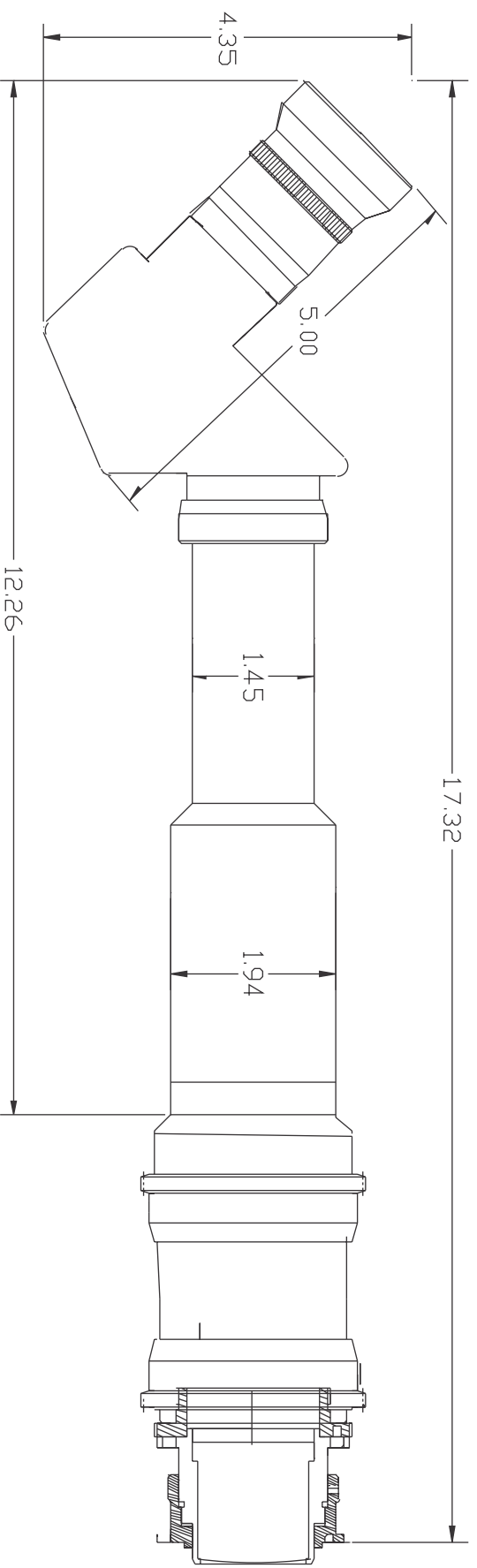
HD Probe Lens System

Direct View Configuration



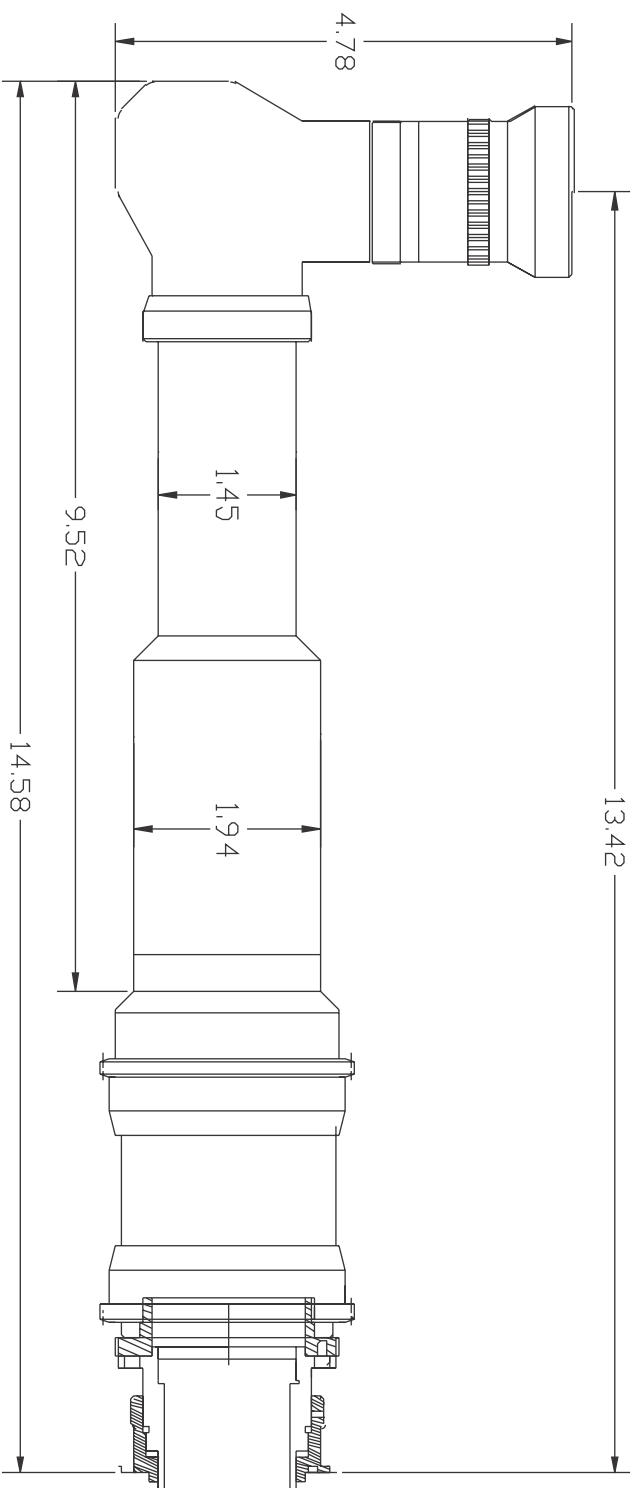
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45 Degree View Configuration



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90 Degree View Configuration



HD Probe Lens Minimum Focus Chart

Lens	Minimum Focus	T-Stop
5mm	0.5 Inch	@ T2.8
8mm	1.50 Inch	@ T2.8
12mm	4.0 Inches	@ T2.8
17mm	8.0 Inches	@ T2.8
23mm	13.0 Inches	@ T2.8

HD Probe Lens Coverage Chart

Lens	Coverage	T-Stop
5mm	All HD & Video Formats	@ T22
8mm	All HD & Video Formats	@ T22
12mm	All HD & Video Formats	@ T22
17mm	All HD & Video Formats	@ T22

HD Probe **LENS: 5 mm**

Distance(in) **1 2 3 4 5 6 7 8 9** Circle of Confusion: **0.000398**

T-Stop										
4	Near	0.961	1.848	2.671	3.435	4.148	4.813	5.437	6.021	6.571
	Far	1.043	2.179	3.422	4.787	6.293	7.963	9.826	11.917	14.280
5.6	Near	0.946	1.794	2.559	3.252	3.883	4.461	4.991	5.479	5.930
	Far	1.061	2.260	3.626	5.195	7.018	9.162	11.718	14.819	18.659
8	Near	0.924	1.718	2.407	3.011	3.544	4.019	4.444	4.827	5.174
	Far	1.090	2.393	3.981	5.958	8.487	11.834	16.477	23.347	34.550
11	Near	0.898	1.631	2.241	2.755	3.195	3.576	3.909	4.202	4.462
	Far	1.127	2.584	4.538	7.298	11.492	18.627	33.471	83.198	INFINITY
16	Near	0.859	1.505	2.009	2.414	2.745	3.021	3.255	3.456	3.630
	Far	1.197	2.979	5.917	11.673	28.039	428.906	INFINITY	INFINITY	INFINITY
T-Stop										
Distance(in)										
		10	11	12	15	18	21	24	30	36
4										
	Near	7.088	7.576	8.037	9.281	10.348	11.274	12.085	13.438	14.522
	Far	16.973	20.070	23.669	39.089	69.100	153.016	1715.625	INFINITY	INFINITY
5.6										
	Near	6.349	6.737	7.100	8.053	8.844	9.511	10.082	11.007	11.724
	Far	23.539	29.947	38.736	109.297	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY
8										
	Near	5.489	5.778	6.042	6.719	7.261	7.705	8.075	8.658	9.095
	Far	56.078	114.397	857.813	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY
11										
	Near	4.695	4.905	5.094	5.566	5.933	6.227	6.466	6.835	7.104
	Far	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY
16										
	Near	3.783	3.918	4.038	4.329	4.548	4.718	4.854	5.059	5.205
	Far	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY	INFINITY

HD Probe LENS: 23 mm

	Circle of Confusion:											
T-Stop	Distance(in)	4	5	6	7	8	9	10	11	12		
4	Near	3.969	4.952	5.931	6.906	7.878	8.845	9.810	10.770	11.727		
	Far	4.031	5.049	6.071	7.096	8.126	9.160	10.198	11.240	12.286		
5.6	Near	3.957	4.933	5.904	6.869	7.830	8.785	9.735	10.681	11.621		
	Far	4.044	5.069	6.099	7.136	8.178	9.226	10.279	11.339	12.405		
8	Near	3.939	4.905	5.863	6.815	7.759	8.696	9.626	10.549	11.466		
	Far	4.063	5.099	6.143	7.196	8.256	9.326	10.404	11.491	12.587		
11	Near	3.916	4.870	5.814	6.748	7.672	8.587	9.493	10.390	11.277		
	Far	4.087	5.137	6.199	7.272	8.357	9.454	10.564	11.686	12.822		
16	Near	3.879	4.813	5.733	6.639	7.532	8.412	9.279	10.134	10.977		
	Far	4.128	5.202	6.293	7.402	8.530	9.676	10.842	12.028	13.233		
T-Stop	Distance(in)	13	14	15	18	21	24	30	36	48		
4	Near	12.680	13.630	14.576	17.392	20.177	22.931	28.349	33.648	43.908		
	Far	13.337	14.391	15.450	18.652	21.893	25.173	31.855	38.705	52.933		
5.6	Near	12.556	13.487	14.412	17.160	19.866	22.530	27.738	32.791	42.460		
	Far	13.476	14.554	15.638	18.926	22.271	25.675	32.664	39.905	55.202		
8	Near	12.375	13.278	14.174	16.824	19.417	21.954	26.870	31.585	40.459		
	Far	13.691	14.805	15.928	19.353	22.865	26.467	33.956	41.850	58.996		
11	Near	12.156	13.026	13.888	16.422	18.883	21.274	25.858	30.196	38.208		
	Far	13.970	15.131	16.306	19.914	23.652	27.527	35.722	44.566	64.541		
16	Near	11.808	12.627	13.435	15.792	18.055	20.229	24.331	28.134	34.965		
	Far	14.460	15.708	16.978	20.925	25.092	29.498	39.113	49.971	76.529		