



Zoom Objektiv mit langem Arbeitsabstand:

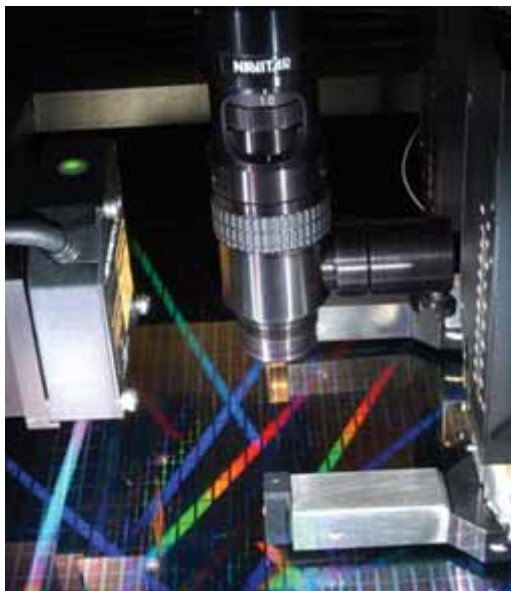
Objektive für Vision Kamera Systeme für Anwendungen in den Bereichen Automation, Maschinenbau, Mikroelektronik, Kontrolle und Uhrenindustrie:

- Hochauflösende und kontrastreiche Zoom Optik
- Grosses Gesichtsfeld von 0.44 – 106mm
- Dynamische Vergrößerungen bis 240x
- Arbeitsabstand von 36 – 356mm
- Modularer Aufbau für erhöhte Flexibilität
- Kompakter Aufbau: L=112mm / D=45mm
- Solide Industriearbeitung (Alu eloxiert)
- Adapter für C- Mount Kameraanschluss
- Koaxiale Beleuchtung möglich
- Fein-Fokussiereinrichtung (optional)

Objectif zoom longue distance

Objectifs pour les systèmes-caméras de visualisation, pour les applications dans les domaines de l'automatisation, de la construction de machines, de la micro-électronique, de l'assurance qualité et de l'industrie horlogère:

- *optique zoom à haute résolution et à fort contraste*
- *grand champ visuel de 0,44 – 106 mm*
- *grossissement dynamique jusqu'à 240x*
- *distance de travail de 36 – 356 mm*
- *conception modulaire pour une flexibilité accrue*
- *construction compacte: L=112mm / D=45mm*
- *version industrielle robuste (en aluminium éloxé)*
- *adaptateur pour branchement de caméras monture-C*
- *possibilité d'éclairage coaxial*
- *dispositif de focalisation fine (optionnel)*

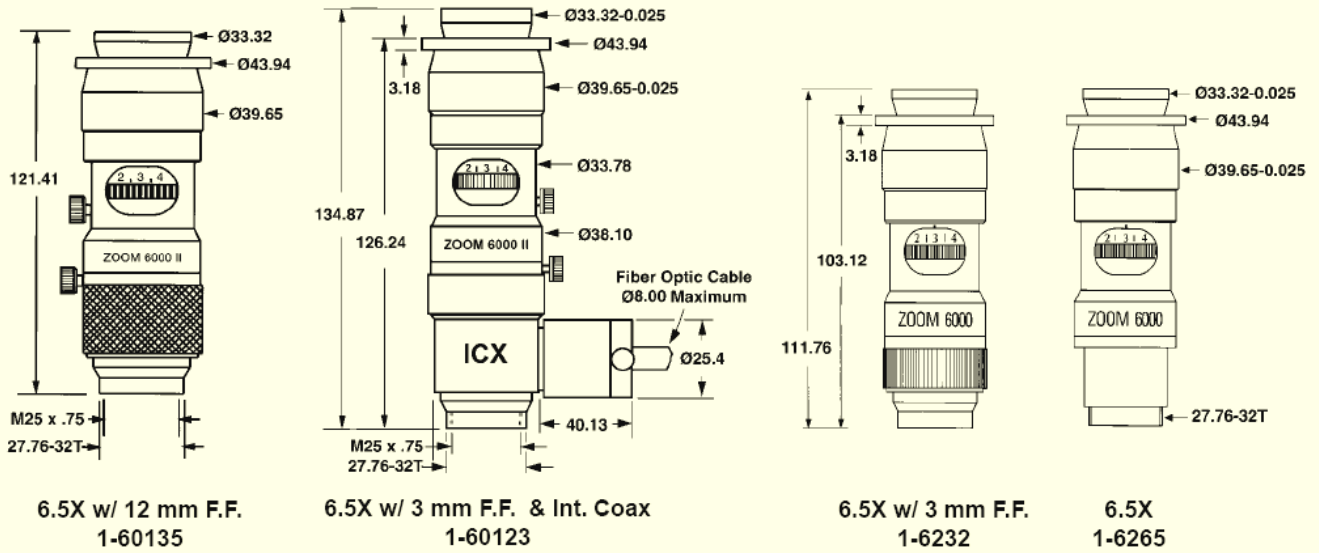


Zoom 6000 System Dimensions

*All measurements are in mm unless otherwise specified.

Lenses*

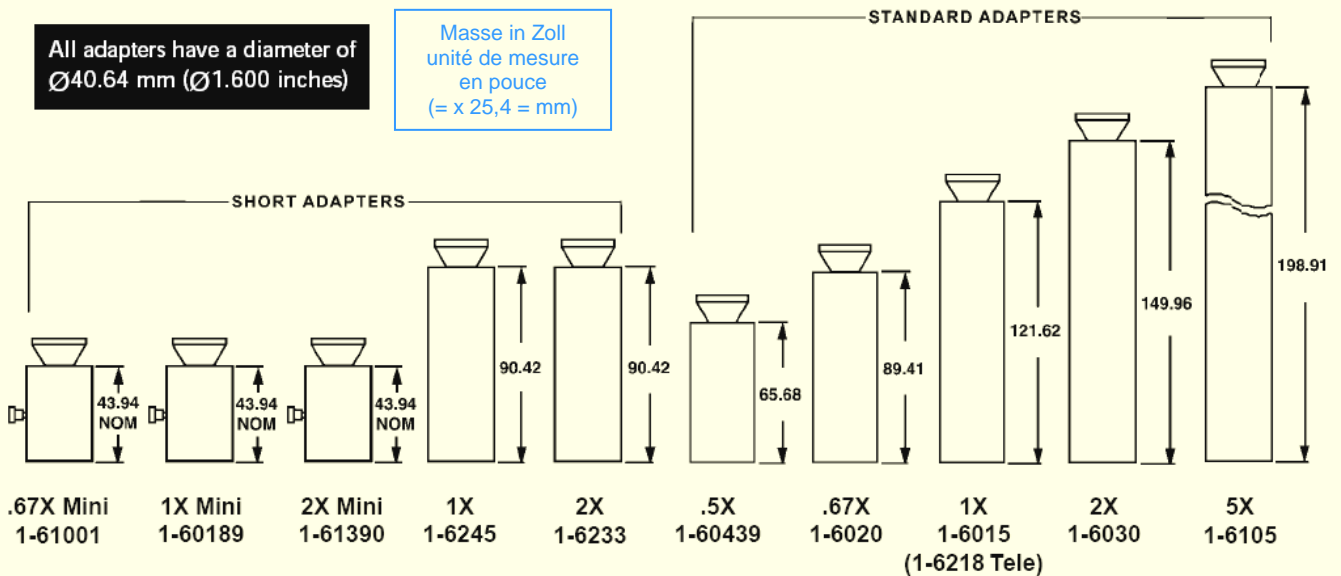
Aufbau und Abmessungen / montage et dimensions



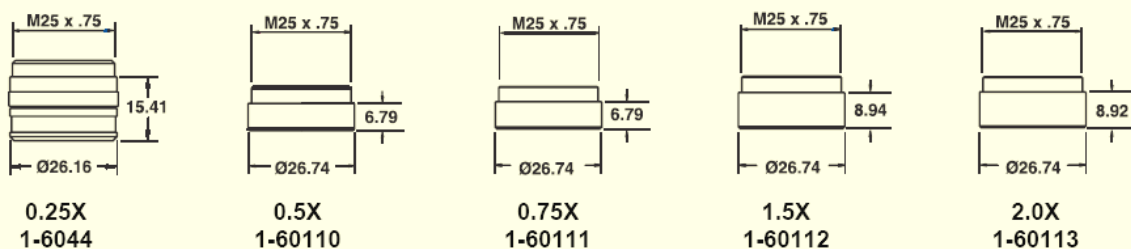
Adapters*

All adapters have a diameter of $\text{Ø}40.64$ mm ($\text{Ø}1.600$ inches)

Masse in Zoll
unité de mesure
en pouce
(= x 25,4 = mm)



Attachments*





Zoom 6000 Performance Specifications

Zoom 6000 Combinations (Lens Attach. + Prime Lens + Adapter)	W.D.	System Mag.		N.A. -obj-		Resolve Limit (microns)		Pixel Size (microns)		Depth of Field (mm)	
		Low Mag	High Mag	Low Mag	High Mag	Low Mag	High Mag	Low Mag	High Mag	Low Mag	High Mag
0.25x + 6.5X + 0.5x	356	0.09	0.56	0.006	0.018	55.56	18.52	2.50	5.19	13.89	1.54
0.25x + 6.5X + 0.67x	356	0.12	0.75	0.006	0.018	55.56	18.52	3.33	6.95	13.89	1.54
0.25x + 6.5X + 1.0x	356	0.18	1.13	0.006	0.018	55.56	18.52	5.00	10.46	13.89	1.54
0.25x + 6.5X + 2.0x	356	0.35	2.25	0.006	0.018	55.56	18.52	9.72	20.84	13.89	1.54
0.25x + 6.5X + 5.0x	356	0.88	5.62	0.006	0.018	55.56	18.52	24.45	52.04	13.89	1.54
0.5x + 6.5X + 0.5x	175	0.18	1.13	0.011	0.035	28.50	9.52	2.73	5.38	4.13	0.41
0.5x + 6.5X + 0.67x	175	0.23	1.50	0.011	0.035	30.30	9.52	3.48	7.14	4.13	0.41
0.5x + 6.5X + 1.0x	175	0.35	2.25	0.011	0.035	30.30	9.52	5.30	10.71	4.13	0.41
0.5x + 6.5X + 2.0x	175	0.70	4.50	0.011	0.035	30.30	9.52	10.61	21.42	4.13	0.41
0.5x + 6.5X + 5.0x	175	1.75	11.25	0.011	0.035	30.30	9.52	26.51	53.55	4.13	0.41
0.75x + 6.5X + 0.5x	113	0.26	1.69	0.017	0.053	19.61	6.29	2.55	5.32	1.73	0.18
0.75x + 6.5X + 0.67x	113	0.35	2.25	0.017	0.053	19.61	6.29	3.43	7.08	1.73	0.18
0.75x + 6.5X + 1.0x	113	0.53	3.38	0.017	0.053	19.61	6.29	5.20	10.63	1.73	0.18
0.75x + 6.5X + 2.0x	113	1.05	6.75	0.017	0.053	19.61	6.29	10.30	21.23	1.73	0.18
0.75x + 6.5X + 5.0x	113	2.63	16.88	0.017	0.053	19.61	6.29	24.74	53.09	1.73	0.18
None + 6.5X + 0.5x	92	0.35	2.25	0.023	0.071	14.50	4.69	2.54	5.28	0.95	0.10
None + 6.5X + 0.67x	92	0.47	3.00	0.023	0.071	14.50	4.69	3.41	7.04	0.95	0.10
None + 6.5X + 1.0x	92	0.70	4.50	0.023	0.071	14.50	4.69	5.08	10.55	0.95	0.10
None + 6.5X + 2.0x	92	1.40	9.00	0.023	0.071	14.50	4.69	10.15	21.11	0.95	0.10
None + 6.5X + 5.0x	92	3.50	22.50	0.023	0.071	14.50	4.69	25.38	52.76	0.95	0.10
1.5x + 6.5X + 0.5x	51	0.53	3.38	0.034	0.106	9.80	3.15	2.60	5.32	0.43	0.04
1.5x + 6.5X + 0.67x	51	0.70	4.50	0.034	0.106	9.80	3.15	3.43	7.09	0.43	0.04
1.5x + 6.5X + 1.0x	51	1.05	6.75	0.034	0.106	9.80	3.15	5.15	10.63	0.43	0.04
1.5x + 6.5X + 2.0x	51	2.10	13.50	0.034	0.106	9.80	3.15	10.29	21.26	0.43	0.04
1.5x + 6.5X + 5.0x	51	5.25	33.75	0.034	0.106	9.80	3.15	25.73	53.16	0.43	0.04
2.0x + 6.5X + 0.5x	36	0.70	4.50	0.046	0.142	7.25	2.35	2.54	5.29	0.24	0.02
2.0x + 6.5X + 0.67x	36	0.94	6.00	0.046	0.142	7.25	2.35	3.41	7.05	0.24	0.02
2.0x + 6.5X + 1.0x	36	1.40	9.00	0.046	0.142	7.25	2.35	5.08	10.58	0.24	0.02
2.0x + 6.5X + 2.0x	36	2.80	18.00	0.046	0.142	7.25	2.35	10.05	21.15	0.24	0.02
2.0x + 6.5X + 5.0x	36	7.00	45.00	0.046	0.142	7.25	2.35	25.38	52.88	0.24	0.02

Assumptions:

1. Minimum resolvable feature size is half of the threshold line pair limit. Calculation = $1/(3000 \times \text{Lens N.A.})$
2. Matching pixel size is that which will permit the minimum feature size to overlap two pixels. Calculation = $1/2(\text{Feature Size} \times \text{System Magnification})$
3. If the matching pixel size is greater than the camera pixel size, the system is "lens limited."
4. If the matching pixel size is less than the camera pixel size, the system is "camera limited."



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Zoom 6000 Objectives Technical Data

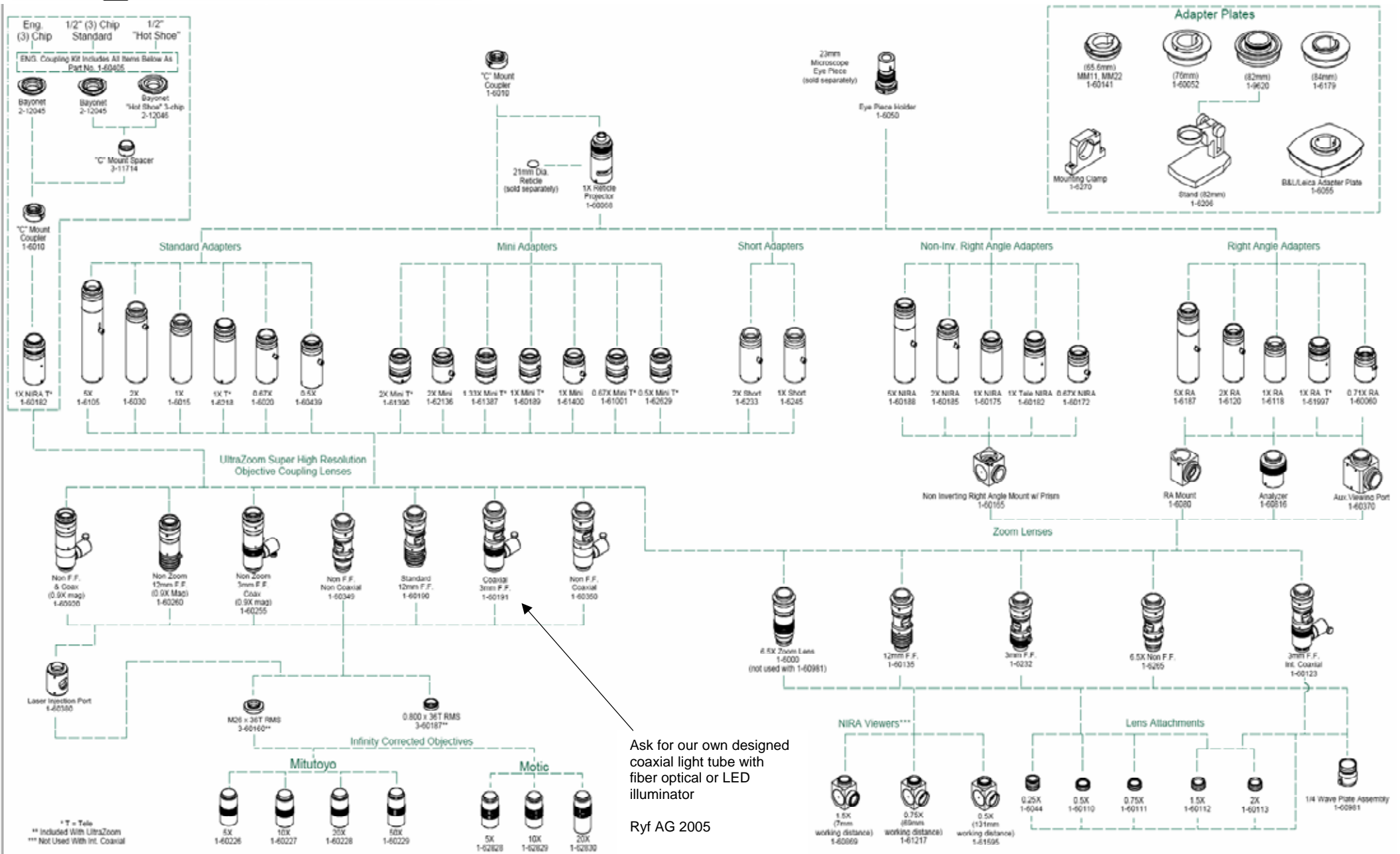
Lens Attach.	W.D.	Camera Format/ Parameters	.5X Adapter	.67X Adapter	1X Adapter	2X Adapter	5X Adapter
			Low-High	Low-High	Low-High	Low-High	Low-High
0.25X 0.018 N.A. 1-6044	356 (nominal)	Mag.	0.09X-0.56X	0.12X-0.75X	0.18X-1.13X	0.35X-2.25X	0.88X-5.62X
		Field 1/4"	45.70-7.12	34.03-5.33	22.85-3.56	11.42-1.78	4.54-0.72
	220-390 (1) W.D. range	Field 1/3"	68.64-10.64	51.12-8.04	34.32-5.32	17.16-2.66	6.88-1.08
		Field 1/2"	91.36-14.16	68.06-10.66	45.68-7.08	22.84-3.54	9.12-1.44
		Field 2/3"	125.68-19.52	93.62-14.66	62.84-9.76	31.42-4.88	12.56-1.96
0.5X 0.035 N.A. 1-60110	175 (nominal)	Mag.	0.18X-1.13X	0.24X-1.50X	0.35X-2.25X	0.70X-4.50X	1.75X-11.25X
		Field 1/4"	22.85-3.56	17.02-2.66	11.42-1.78	5.71-0.89	2.28-0.36
	143-187 (1) W.D. range	Field 1/3"	34.32-5.32	25.56-4.0	17.16-2.67	8.58-1.33	3.43-0.53
		Field 1/2"	45.68-7.08	34.03-5.33	22.85-3.56	11.42-1.77	4.57-0.71
		Field 2/3"	62.84-9.76	46.81-7.33	31.43-4.89	15.71-2.44	6.29-0.98
0.75X 0.054 N.A. 1-60111	113 (nominal)	Mag.	0.27X-1.69X	0.35X-2.25X	0.53X-3.38X	1.05X-6.75X	2.63X-16.88X
		Field 1/4"	15.22-2.38	11.34-1.78	7.61-1.19	3.81-0.59	1.52-0.24
	100-119 (1) W.D. range	Field 1/3"	22.86-3.56	17.04-2.67	11.43-1.78	5.72-0.89	2.29-0.35
		Field 1/2"	30.46-4.74	22.69-3.56	15.23-2.37	7.62-1.19	3.05-0.47
		Field 2/3"	41.90-6.52	31.21-4.89	20.95-3.26	10.48-1.63	4.19-0.65
NONE 0.071 N.A.	92 (nominal)	Mag.	0.35X-2.25X	0.47X-3.00X	0.70X-4.50X	1.40X-9.00X	3.50X-22.50X
		Field 1/4"	11.42-1.78	8.51-1.33	5.71-0.89	2.86-0.45	1.14-0.18
	81-93 (1) W.D. range	Field 1/3"	17.16-2.67	12.77-2.01	8.58-1.33	4.29-0.67	1.72-0.27
		Field 1/2"	22.85-3.56	17.01-2.67	11.42-1.77	5.71-0.89	2.28-0.36
		Field 2/3"	31.43-4.89	23.40-3.65	15.71-2.44	7.86-1.22	3.14-0.49
1.5X 0.104 N.A. 1-60112	51 (nominal)	Mag.	0.53X-3.38X	0.71X-4.50X	1.05X-6.75X	2.10X-13.50X	5.25X-33.75X
		Field 1/4"	7.61-1.19	5.67-0.89	3.81-0.59	1.91-0.30	0.76-0.12
	48-52 (1) W.D. range	Field 1/3"	11.43-1.78	8.52-1.33	5.72-0.89	2.86-0.44	1.14-0.18
		Field 1/2"	15.23-2.37	11.34-1.77	7.62-1.19	3.81-0.59	1.52-0.24
		Field 2/3"	20.95-3.26	15.60-2.44	10.48-1.63	5.24-0.81	2.10-0.33
2.0X 0.141 N.A. 1-60113	36 (nominal)	Mag.	0.70X-4.50X	0.94X-6.00X	1.40X-9.00X	2.80X-18.00X	7.00X-45.00X
		Field 1/4"	5.71-0.89	4.26-0.67	2.86-0.45	1.43-0.23	0.57-0.09
	34-37 (1) W.D. range	Field 1/3"	8.58-1.33	6.39-1.00	4.29-0.67	2.15-0.33	0.86-0.13
		Field 1/2"	11.42-1.77	8.51-1.33	5.71-0.89	2.86-0.44	1.14-0.18
		Field 2/3"	15.71-2.44	11.70-1.83	7.86-1.22	3.93-0.61	1.57-0.24

The above fields of view are measured diagonally in millimeters (Horizontal = Diagonal x 0.8 and Vertical = Diagonal x 0.6). (1) Working distance range when using 12 mm fine focus. Field of view will change with longer or shorter working distances. Ryf AG, Grenchen, 2005



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Zoom 6000 System Diagram



Ask for our own designed coaxial light tube with fiber optical or LED illuminator

Ryf AG 2005

* T = Tele
 ** Included With UltraZoom
 *** Not Used With Int. Coaxial