

Vari-focal Lenses



With two focal distances at wide angle and telephoto, vari-focal lenses are the most practical lenses to use when an application requires flexibility in the angular field of view.

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Model No.	Image Size (inches)	Focal Length (mm)	Aperture	Iris Operation	Mount Type	4-pin Connector Attached	Angle Field of View (D x H x V) (T=Tele, W=Wide)	Dimension (D x H x L) (mm)	Weight (g)	Minimum Object Distance (m)
KL28V121S	1/3"	2.8-12	1.4-C	Manual	CS	N/A	W:97.4 x 72.5 T:24.1 x 18.1	54.6 x 60	70	0.2
KL28V12DS	1/3"	2.8-12	1.4-360	DC A.I.	CS	Y	W:97.4 x 72.5 T:24.1 x 18.1	54.6 x 60	80	0.2
KL28V12VS4	1/3"	2.8-12	1.4-360	Video A.I.	CS	Y	W:97.4 x 72.5 T:24.1 x 18.1	54.6 x 60	80	0.2
KL32V10IS	1/3"	3.2-10	1.4-C	Manual	CS	N/A	W:84.0 x 62.5 T:29.0 x 22.0	48.5 x 47.0	98	0.2
KL32V10VS4	1/3"	3.2-10	1.4-360	Video A.I.	CS	Y	W:84.0 x 62.5 T:29.0 x 22.0	45.0 x 47.0	79	0.2
KL32V10DS	1/3"	3.2-10	1.4-360	DC A.I.	CS	Y	W:84.0 x 62.5 T:29.0 x 22.0	45.0 x 47.0	79	0.2
KL35V8IS	1/3"	3.5-8	1.4-C	Manual	CS	N/A	W:109.3 x 81.9 x 59.4 T:43.9 x 35.0 x 26.1	35 x 46.5	83	0.3
KL35V8VS4	1/3"	3.5-8	1.4-360	Video A.I.	CS	Y	W:109.3 x 81.9 x 59.4 T:43.9 x 35.0 x 26.1	35 x 46 x 46.5	80	0.3
KL35V8DS	1/3"	3.5-8	1.4-360	DC A.I.	CS	Y	W:109.3 x 81.9 x 59.4 T:43.9 x 35.0 x 26.1	35 x 46 x 46.5	80	0.3
KL55V33IS	1/3"	5.5-33	1.6-C	Manual	CS	N/A	W:63.9 x 50.1 x 37.2 T:11.0 x 8.7 x 6.5	42 x 54.5	148.5	0.3
KL55V33VS4	1/3"	5.5-33	1.6-360	Video A.I.	CS	Y	W:63.9 x 50.1 x 37.2 T:11.0 x 8.7 x 6.5	42 x 54.3 x 54.5	146	0.3
KL55V33DS	1/3"	5.5-33	1.6-360	DC A.I.	CS	Y	W:63.9 x 50.1 x 37.2 T:11.0 x 8.7 x 6.5	42 x 54.3 x 54.5	144.5	0.3
KL07V70IS	1/3"	7-70	1.8-C	Manual	CS	N/A	W:50.7 x 40.1 x 29.8 T:5.2 x 4.2 x 3.1	55 x 82.2	199.5	0.3 ~ 1.0
KL07V70VS4	1/3"	7-70	1.8-360	Video A.I.	CS	Y	W:50.7 x 40.1 x 29.8 T:5.2 x 4.2 x 3.1	48 x 55 x 82.2	205	0.3 ~ 1.0
KL07V70DS	1/3"	7-70	1.8-360	DC A.I.	CS	Y	W:50.7 x 40.1 x 29.8 T:5.2 x 4.2 x 3.1	48 x 55 x 82.2	202	0.3 ~ 1.0

Pinhole Lenses



Our pinhole lenses are ideal for a wide variety of industrial and covert applications. These lenses can be housed in a wide range of casings for effective and discreet video surveillance.

Model No.	Image Size (inches)	Focal Length (mm)	Aperture	Iris Operation	Mount Type	4-pin Connector Attached	Angle Field of View (D x H x V)	Dimension (D x H x L) (mm)	Weight (g)	Minimum Object Distance (m)
KL0420ISSH	1/3"	4	2	Manual	CS	N/A	72.2 x 95.6 x 72.6	32 x 72.3	112	0.4
KL0620ICRH*	1/2"	6	2	Manual	C	N/A	66.9 x 56.0 x 43.4	34 x 43.2 x 37.5	88.3	0.7
KL0620VCSH4	1/2"	6	2.0-6.4	Video A.I.	C	Y	66.9 x 56.0 x 43.4	17 x 52 x 80.5	122	0.7



Video Auto-iris Monofocal Lenses



These lenses deliver high-performance in the same variety of formats and focal lengths as the manual-iris lenses. They are adaptable to various light conditions and meet a diverse application of needs.

Model No.	Image Size (inches)	Focal Length (mm)	Aperture	Iris Operation	Mount Type	4-pin Connector Attached	Angle Field of View (D x H x V) (T=Tele, W=Wide)	Dimension (D x H x L) (mm)	Weight (g)	Minimum Object Distance (m)
KL2814VS4	1/3"	2.8	1.4-360	Video A.I.	CS	Y	117.4 x 95.6 x 72.6	29 x 43.9 x 36.2	63.3	0.2
KL0412VS4	1/3"	4	1.2-360	Video A.I.	CS	Y	90.3 x 70.6 x 52.2	29 x 43.9 x 32.3	57	0.25
KL0612VS4	1/3"	6	1.2-360	Video A.I.	CS	Y	61.1 x 48.1 x 35.6	32 x 43.9 x 29.5	48.7	0.3
KL0812VS4	1/3"	8	1.2-360	Video A.I.	CS	Y	46.3 x 36.5 x 27.1	32 x 43.9 x 29.5	48.4	0.3
KL1214VS4	1/2"	12	1.4-360	Video A.I.	CS	Y	37.2 x 29.7 x 22.3	37 x 52 x 32	80	0.2
KL1616VS4	1/3"	16	1.3-360	Video A.I.	CS	Y	21.8 x 17.6 x 13.2	32 x 43.9 x 29.5	47.5	0.7
KL2513VC4	1"	25	1.3-360	Video A.I.	C	Y	37 x 29.5 x 22.1	50 x 46.5	171	0.5
KL5018VC4	1"	50	1.8-360	Video A.I.	C	Y	18.6 14.8 x 11.1	50 x 48.5	168	1

DC Monofocal Auto-iris Lenses



Used with cameras that have DC auto-iris control, these lenses were designed to meet new competitive cost requirements.

Model No.	Image Size (inches)	Focal Length (mm)	Aperture	Iris Operation	Mount Type	4-pin Connector Attached	Angle Field of View (D x H x V)	Dimension (D x H x L) (mm)	Weight (g)	Minimum Object Distance (m)
KL2814DS	1/3"	2.8	1.4-360	DC A.I.	CS	Y	117.4 x 95.6 x 72.6	29 x 43.9 x 36.2	64.4	0.2
KL0412DS	1/3"	4	1.2-360	DC A.I.	CS	Y	90.3 x 70.6 x 52.2	29 x 43.9 x 32.3	58.1	0.25
KL0612DS	1/3"	6	1.2-360	DC A.I.	CS	Y	61.1 x 48.1 x 35.6	32 x 43.9 x 29.5	49.8	0.3
KL0812DS	1/3"	8	1.2-360	DC A.I.	CS	Y	46.3 x 36.5 x 27.1	32 x 43.9 x 29.5	49.5	0.3
KL1616DS4	1/3"	16	1.6-360	DC A.I.	CS	Y	21.8 x 17.6 x 13.2	32 x 43.9 x 29.5	44.5	0.7



Motorized Zoom Lenses

These lenses are available in auto-iris and auto-iris preset configurations. Designed for mechanical durability as well as optical excellence, they provide reliable, quality images every time.



Model No.	Image Size (inches)	Focal Length (mm)	Aperture	Iris Operation	Mount Type	4-pin Connector Attached	Angle Field of View (D x H x V) (T=Tele, W=Wide)	Dimension (W x H x L) (mm)	Weight (g)	Minimum Object Distance (m)
KL08X10VC4	1/2"	8.0-80	1.2	Video A.I.	C	Y	W:52.4 x 42.9 x 32.7 T:5.7 x 4.6 x 3.5	77.6 x 91.3 x 120	930	1.5
KL08X10VCP4*	1/2"	8.0-80	1.2	Video A.I.	C	Y	W:52.4 x 42.9 x 32.7 T:5.7 x 4.6 x 3.5	77.6 x 91.3 x 120	950	1.5

*Lenses ending in "P4" include the capability for preset positioning

Manual-Iris Monofocal Lens

The table below indicates the dimensions of Ultrak's lenses. Use these dimensions to determine whether the camera/lens combination selected will fit in the selected Ultrak® housing.

These lenses boast high optical performance and are constructed with quality cases and metal threads to prevent cross-threading. Competitively priced for outstanding value, they help produce a winning camera/lens combination.



Model No.	Image Size (inches)	Focal Length (mm)	Aperture	Iris Operation	Mount Type	4-pin Connector Attached	Angle Field of View (D x H x V)	Dimension (D x L) (mm)	Weight (g)	Minimum Object Distance (m)
KL2814IS	1/3"	2.8	1.4-C	Manual	CS	N/A	117.4 x 95.6 x 72.6	30 x 36.2	54.5	0.2
KL2814WS	1/3"	2.8	1.4	Fixed Iris	CS	N/A	117.4 x 95.6 x 72.6	30 x 36	58.4	0.2
KL0412IS	1/3"	4	1.2-C	Manual	CS	N/A	90.3 x 70.6 x 52.2	30 x 33.8	51.6	0.25
KL0412WS	1/3"	4	1.2	Fixed Iris	CS	N/A	90.3 x 70.6 x 52.2	30 x 33.7	55.7	0.25
KL0612IS	1/3"	6	1.2-C	Manual	CS	N/A	61.1 x 48.1 x 35.6	30 x 26.8	41.7	0.3
KL0612WS	1/3"	6	1.2	Fixed Iris	CS	N/A	61.1 x 48.1 x 35.6	30 x 26.5	45.6	0.3
KL0812IS	1/3"	8	1.2-C	Manual	CS	N/A	46.3 x 36.5 x 27.1	30 x 26.8	41.1	0.3
KL0812WS	1/3"	8	1.2	Fixed Iris	CS	N/A	46.3 x 36.5 x 27.1	30 x 26.5	45	0.3
KL3514IC	1/2"	3.5	1.4-C	Manual	C	N/A	112 x 94.6 x 73.5	36 x 42.5	93.4	0.2
KL4814IC	1/2"	4.8	1.4-C	Manual	C	N/A	81.4 x 69.4 x 54.2	36 x 39.5	87.5	0.2
KL0612IC	1/2"	6	1.2-C	Manual	C	N/A	69.2 x 57.1 x 43.6	37 x 43	108.5	0.2
KL1212IC	1/2"	12	1.2-C	Manual	C	N/A	37.1 x 29.7 x 22.3	37 x 34.5	74.5	0.3
KL0813IC	2/3"	8	1.3-C	Manual	C	N/A	71.6 x 58.8 x 44.9	37 x 30	72.5	0.2
KL1616IS	1/3"	16	1.6-C	Manual	CS	N/A	21.8 x 17.6 x 13.2	30 x 26.8	39.5	0.7
KL1616WC	2/3"	16	1.6	Fixed Iris	C	N/A	37.8 x 27.8 x 20.9	41.5 x 27.5	65	0.3
KL2514IC	1"	25	1.4-C	Manual	C	N/A	34.8 x 27.8 x 20.9	46 x 28	81	0.35
KL5018IC	1"	50	1.8-C	Manual	C	N/A	18.6 x 14.8 x 11.1	44 x 48.5	145	1



Accessories

Model No.	Description
KL-200	Extension tube set 2x to double focal length
KL-250	CS adapter ring
KLA01	Focal length finder

Lenses Compatibility & Calculation

All of Ultrak's lenses adhere to industry standards and are compatible with most cameras in the market. Several precautions should be taken into consideration when selecting a lens for a camera:

- 1) Do not use smaller format lenses on larger format cameras; Example: 1/3" lens on a 1/2" camera will not work.
- 2) Use a DC auto-iris lens only with cameras equipped with a coupled amplifier for DC lens control. Cameras that support DC auto-iris lenses can normally be identified by an iris level control on the body of the camera;
- 3) Do not use CS-mount lenses on C-mount only cameras. The C/CS adapter will not ensure compatibility.

Focal Length - Lens Calculation Method

The focal length of a lens is determined using information about the picture size and the distance of the camera to the subject. The following mathematical calculations are used to determine the focal length of a lens. The distance from the camera to the subject and the width or height of the desired scene are necessary for this procedure.

$$\frac{\text{Distance to subject}}{\text{Width of desired field of view}} \times \text{Width factor} = \text{Lens needed}$$

$$\frac{\text{Subject is 25' away}}{\text{Subject is 16' wide}} \times 6.4\text{mm} = \text{Focal length}$$

EXAMPLE: $1.56 \times 6.4\text{mm} = 10\text{mm}$

$$\frac{\text{Distance to subject}}{\text{Height of desired field of view}} \times \text{Height factor} = \text{Lens needed}$$

$$\frac{\text{Subject is 25' away}}{\text{Subject is 30' high}} \times 4.8\text{mm} = \text{Focal length}$$

EXAMPLE: $0.83 \times 4.8\text{mm} = 4.0\text{mm}$

Camera Format	Width Factor	Height Factor	Standard Lens
2/3"	8.8mm	6.6mm	16.0mm
1/2"	6.4mm	4.8mm	12.0mm
1/3"	4.8mm	3.6mm	8.0mm

Conversion: 1" = 25.4mm
Measurement conversions are approximate

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