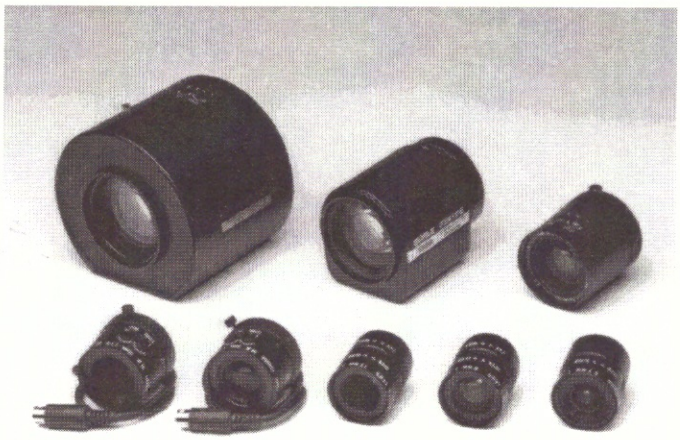
Lens Guide For BURLE Cameras

- **Complete Line of 1/3-inch, 1/2-inch, 2/3-inch, and 1-inch Format Lenses**
- **Fixed, Manual, and Auto-Iris Lenses**
- **Lenses for Specialized Applications**
- **Complete Selection of Zoom Lenses**
- **CS-Mount or C-Mount**
- **Lens Accessory Items**



This publication lists lenses available for BURLE cameras. A variety of fixed focal length, motorized zoom, and fixed, manual, or auto-iris types are available for 1/3-, 1/2-, 2/3-, and 1-inch format cameras. Pre-position option capability is available on selected lenses.

The specialized BURLE lenses include 1/3-inch manual zoom which allow a customized field of view when needed. A 1/2-inch manual iris override lens provides dual auto iris or user controlled iris function. Pin-hole lenses allow covert installations. The wide selection offered assures a lens to meet most applications.

The comprehensive lens data is tabulated by format within each lens category for easy reference. Detailed data is given to aid in selecting lenses for various applications and camera housings. The operating temperature range for these lenses is -20 °C (-4 °F) to +50 °C (+122 °F), except as noted. The Field-of-View Guide aids in selecting lenses for different image formats.

Specifications

Model No.	Note	Focal Length mm	Mount Style	Iris Range Max to Min f-Stop	Dimensions (D x L) or (W x H x L) mm (inches)	Filter Thread Dia. x Pitch mm	Lens Weight g (lb)	Iris Conn. Type
FIXED FOCAL LENGTH/FIXED IRIS								
1/3-inch Format								
TC9783	1, 2	3.6	CS	2.0 Fixed	30 x 8 (1.18 x 0.32)	---	20 (0.05)	---
TC9788	1, 2	8	CS	2.0 Fixed	30 x 8 (1.18 x 0.32)	---	18 (0.04)	---
FIXED FOCAL LENGTH/MANUAL IRIS								
1/3-inch Format								
TC9702	1, 3	2.8	CS	1.3 to Close	32 x 39.6 (1.26 x 1.56)	---	38 (0.08)	---
TC9704	1, 3	4	CS	1.2 to Close	32 x 35.7 (1.26 x 1.41)	---	32 (0.07)	---
TC9708	1, 3	8	CS	1.2 to Close	32 x 35.7 (1.26 x 1.41)	---	26 (0.06)	---
1/2-inch Format								
TC9703	1, 3	3.7	CS	1.6 to Close	32 x 35.7 (1.26 x 1.41)	30.5 P=0.5	34 (0.07)	
TC9706	1, 3	6	CS	1.4 to Close	32 x 35.7 (1.26 x 1.41)	30.5 P=0.5	32 (0.07)	---
TC9712	1, 3	12	CS	1.4 to Close	32 x 35.7 (1.26 x 1.41)	30.5 P=0.5	26 (0.06)	---
TC9803	1, 2	4.2	C	1.6 to Close	42 x 43.5 (1.65 x 1.71)	---	120 (0.27)	---
TC9805	1, 3	6	C	1.2 to Close	42 x 46 (1.65 x 1.81)	40.5 P=0.5	125 (0.28)	---
TC9811	1, 3	12	C	1.2 to Close	42 x 46 (1.65 x 1.81)	40.5 P=0.5	125 (0.28)	---
2/3-inch Format								
TC9804	1, 2	4.8	C	1.8 to Close	42 x 32 (1.65 x 1.26)	---	100 (0.22)	---
TC9808	1, 3	8.5	C	1.5 to Close	42 x 40 (1.65 x 1.57)	40.5 P=0.5	120 (0.27)	---
TC9816	1, 3	16	C	1.4 to Close	42 x 40 (1.65 x 1.57)	40.5 P=0.5	90 (0.20)	---
1-inch Format								
TC9806	1, 2	6.5	C	1.8 to Close	48 x 42 (1.89 x 1.65)	---	120 (0.27)	---
TC9812	1, 3	12.5	C	1.4 to Close	42 x 50 (1.65 x 1.97)	40.5 P=0.5	135 (0.30)	---
TC9813	1, 3	12.5	C	1.8 to Close	42 x 40 (1.65 x 1.57)	40.5 P=0.5	95 (0.21)	---
TC9824	1, 3	25	C	1.4 to Close	42 x 40 (1.65 x 1.57)	40.5 P=0.5	100 (0.22)	---
TC9825	1, 3	25	C	1.8 to Close	42 x 40 (1.65 x 1.57)	40.5 P=0.5	87 (0.19)	---
TC9850	1, 3	50	C	1.8 to Close	42 x 52.5 (1.65 x 2.07)	40.5 P=0.5	130 (0.29)	---

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Model No.	Note	Focal Length mm	Mount Style	Iris Range Max to Min f-Stop	Dimensions (D x L) or (W x H x L) mm (inches)	Filter Thread Dia. x Pitch mm	Lens Weight g (lb)	Iris Co Typ
FIXED FOCAL LENGTH/AUTO-IRIS								
1/3-inch Format								
TC9902	3, 4	2.8	CS	1.3 to 64	31.2 x 40 x 39.6 (1.23 x 1.57 x 1.56)	---	60 (0.13)	6 F
TC9904	3, 4	4	CS	1.2 to 64	31.2 x 40 x 35.7 (1.23 x 1.57 x 1.41)	---	44 (0.10)	6 F
TC9908	3, 4	8	CS	1.2 to 64	31.2 x 40 x 35.7 (1.23 x 1.57 x 1.41)	---	39 (0.09)	6 F
1/2-inch Format								
TC9905A	2, 5	3.7	CS	1.6 to 64	42 x 55 x 36 (1.65 x 2.16 x 1.42)	---	68 (0.15)	6 F
TC9907A	3, 5	6	CS	1.4 to 64	43.5 x 55.5 x 37 (1.71 x 2.18 x 1.46)	34 P=0.5	67 (0.15)	6 F
TC9913A	3, 5	12	CS	1.4 to 64	43.5 x 55.5 x 37 (1.71 x 2.18 x 1.46)	34 P=0.5	63 (0.14)	6 F
TC9903A	2, 5	3.7	CS	1.6 to 300	40 x 37 (1.57 x 1.46)	34 P=0.5	77 (0.17)	6 F
TC9906A	3, 5	6	CS	1.4 to 300	40 x 37 (1.57 x 1.46)	34 P=0.5	77 (0.17)	6 F
TC9912A	3, 5	12	CS	1.4 to 300	40 x 37 (1.57 x 1.46)	34 P=0.5	67 (0.15)	6 F
TC1803A	2, 6	4.2	C	1.6 to 360	46.5 x 45 (1.83 x 1.77)	---	170 (0.38)	6 F
TC1806A	3, 6	6	C	1.2 to 360	46.5 x 51.1 (1.83 x 2.01)	43 P=0.75	170 (0.38)	6 F
TC1811A	3, 6	12	C	1.2 to 360	46.5 x 51.1 (1.83 x 2.01)	43 P=0.75	170 (0.38)	6 F
2/3-inch Format								
TC1804D2	2, 6, 7	4.8	C	1.8 to 360	46.5 x 37.5 (1.83 x 1.48)	---	150 (0.33)	8 F
TC1805D2	3, 6	5.7	C	1.4 to 360	70 x 68.1 (2.76 x 2.68)	---	275 (0.61)	8 F
TC1810D2	3, 6, 7	8	C	1.4 to 360	46.5 x 51.1 (1.83 x 2.01)	43 P=0.75	170 (0.38)	8 F
TC1816D2	3, 6, 7	16	C	1.4 to 360	46.5 x 46.7 (1.83 x 1.84)	43 P=0.75	140 (0.31)	8 F
1-inch Format								
TC1809D2	3, 6	9	C	1.4 to 360	70 x 65.5 (2.76 x 2.58)	---	275 (0.61)	8 F
TC1812D2	3, 6	12.5	C	1.4 to 360	46.5 x 47.5 (1.83 x 2.34)	43 P=0.75	170 (0.38)	8 F
TC1824D2	3, 6	25	C	1.4 to 360	46.5 x 51.8 (1.83 x 2.04)	43 P=0.75	170 (0.38)	8 F
TC1825E	3, 6	25	C	1.4 to 2000	46.5 x 51.8 (1.83 x 2.04)	43 P=0.75	170 (0.38)	8 F
TC1849D2	3, 6	50	C	1.8 to 360	62 x 51 (2.44 x 2.0)	49 P=0.75	290 (0.64)	8 F
TC1874D2	3, 6	75	C	1.8 to 360	62 x 70.5 (2.44 x 2.8)	49 P=0.75	370 (0.82)	8 F
ZOOM LENSES/AUTO-IRIS								
1/3-inch Format								
TC9938	5, 8	6.3 - 38	CS	1.2 to 360	58 X 63.5 X 78 (2.28 X 2.5 X 3.1)	49 P=0.75	410 (0.91)	6 P
TC9958	5, 8, 9	5.8 - 58	CS	1.2 to 360	64.6 x 70.3 x 85 (2.54 x 2.77 x 3.35)	49 P=0.75	440 (0.97)	6 P
1/2-inch Format								
TC9948A	5, 8	8 - 48	CS	1.4 to 360	58 x 63.5 x 78 (2.28 x 2.5 x 3.07)	49 P=0.75	400 (0.88)	6 P
TC9970A	5, 8	7.5 - 75	CS	1.4 to 360	67 x 75 x 112 (2.64 x 2.95 x 4.41)	58 P=0.75	580 (1.28)	6 P
TC1848B	5, 8, 9	8 - 48	C	1.0 to 720	64 x 74.5 x 97 (2.52 x 2.93 x 3.82)	55 P=0.75	540 (1.19)	6 P
TC1870P	5, 8, 9	7.5 - 75	C	1.2 to 720	70 x 80.5 x 121.5 (2.76 x 3.17 x 4.78)	62 P=0.75	740 (1.63)	6 P
2/3-inch Format								
TC1841AD2	6, 8, 9	12.5 - 75	C	1.8 to 360	101.5 x 92.2 x 94.5 (4.0 x 3.63 x 3.72)	49 P=0.75	790 (1.74)	8 P
TC1840D2	6, 8, 9	10 - 100	C	1.4 to 1200	70 x 80 x 122.3 (2.76 x 3.15 x 4.82)	62 P=0.75	725 (1.60)	8 P
TC1842D2	6, 8, 9, 10	10 - 140	C	1.9 to 720	128 x 119 x 165 (5.04 x 4.69 x 6.5)	86 P=1.0	2092 (4.61)	8 P
1-inch Format								
TC1843D2	5, 8, 9, 10	15 - 180	C	1.9 to 1400	145 x 147 x 227 (5.71 x 5.79 x 8.94)	107 P=1.0	3150 (6.95)	8 P
ZOOM LENS, AUTO-IRIS/MANUAL OVERRIDE								
1/2-inch Format								
TC1871A	5, 8, 9, 11	7.5 - 75	C	1.2 to 720	70 x 80.5 X 121.5 (2.76 x 3.17 X 4.78)	62 P=0.75	720 (1.59)	6 p
MANUAL ZOOM LENSES/MANUAL IRIS								
1/3-inch Format								
TC9735	3, 12	3.5 - 8	CS	1.8 to Close	33 x 42.1 (1.3 x 1.66)	---	40 (0.09)	---
MANUAL ZOOM LENSES/AUTO-IRIS								
1/3-Inch Format								
TC9935	3, 4, 12	3.5 - 8	CS	1.8 to 22	33 x 46 x 42.1 (1.3 x 1.8 x 1.66)	---	55 (0.12)	6 P

Model No.	Note	Focal Length mm	Mount Style	Iris Range Max to Min f-Stop	Dimensions (D x L) or (W x H x L) mm (inches)	Filter Thread Dia. x Pitch mm	Lens Weight g (lb)	Iris Conn. Type
ASPHERICAL FIXED FOCAL LENGTH/AUTO-IRIS								
1/2-inch Format								
TC9921A	3, 5	3.8	CS	0.8 to 64	47 x 56.3 (1.85 x 2.22)	---	240 (0.53)	6 pin
TC9922A	3, 5	6	CS	0.75 to 64	47 x 59.8 (1.85 x 2.35)	43 P=0.75	250 (0.55)	6 pin
TC9923A	3, 5	12	CS	0.8 to 64	47 x 56.3 (1.85 x 2.22)	43 P=0.75	235 (0.52)	6 pin
PINHOLE LENSES/MANUAL IRIS								
1/2-inch Format								
TC9726PL	2, 13, 14	6.2	CS	2.0 to Close	29 x 88.1 (1.14 x 3.47)	---	67 (0.15)	---
2/3-inch Format								
TC9829PL	2, 13, 14	9	C	3.4 to 22	34 x 164 (1.34 x 6.46)	---	175 (0.39)	---
TC9829RPL	2, 13, 15	9	C	3.4 to 22	34 x 71.3 x 122 (1.34 x 2.81 x 4.8)	---	210 (0.46)	---
PINHOLE LENSES/AUTO-IRIS								
1/2-inch Format								
TC9926PLAA	2, 13, 14	6.2	CS	2.0 to 300	39.5 x 88.2 (1.56 x 3.47)	---	110 (0.24)	6 Pin
2/3-inch Format								
TC9829PLA	2, 13, 14	9	C	3.4 to 360	46.5 x 164 (1.83 x 646)	---	235 (0.52)	---
TC9829RPLA	2, 13, 15	9	C	3.4 to 360	46.5 x 71.3 x 121 (1.83 x 2.81 x 4.76)	---	270 (0.60)	---
EXTENSION LENSES								
TC9920	16	2X	CS	---	30.5 x 6.9 (1.2 x 0.27)	---	27 (0.06)	---
TC1820	16	2X	C	---	30.5 x 11.4 (1.2 x 0.45)	---	40 (0.09)	---

SPECIALITY ITEMS

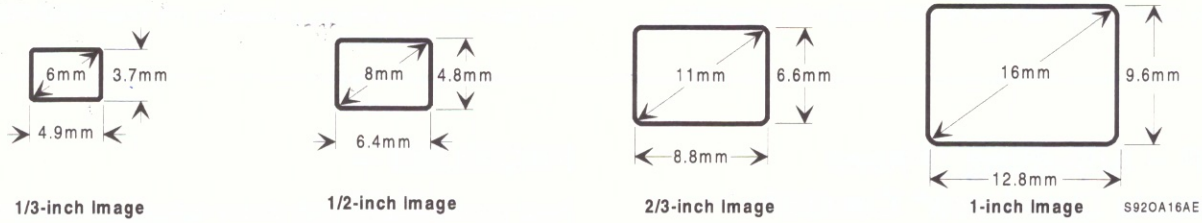
Model No.	Description	Application
TC1309	Lens Rail Assembly	Recommended to provide necessary support for large zoom lenses.
S1372	Lens/Sync Cable	Allows external sync and 8 pin auto iris connection to 8 pin camera connector
S1374	5 mm Adapter Ring	Allows C-mount lenses to be used on CS-mount cameras.
S1375	Lens Adapter Cable	Converts 3-pin lens connector to 8 pin camera iris connector.
S1376	Lens Adapter Cable	Converts 3-pin lens connector to 6-pin camera iris connector.
S1377	Lens Adapter Cable	Converts 8-pin lens connector to 6-pin camera iris connector.
S1378	Lens Adapter Cable	Converts 4-pin lens connector to 6-pin camera iris connector.
S1379	Lens Adapter Cable	Converts 8-pin lens connector to 4-pin camera iris connector.
S1380	Lens Adapter Cable	Converts 6-pin lens connector to 4-pin camera iris connector.

Notes:

1. Recommended for use on cameras with electronic shutter feature.
2. Fixed focus - Image focus must be performed by camera.
3. Includes manual focus ring.
4. Direct drive iris, DC voltage control (without EE amplifier)
5. Auto iris supply voltage 8 VDC to 12 VDC and iris video input signal (EE amplifier).
6. Auto iris supply voltage 8 VDC to 16 VDC and iris video input signal (EE amplifier).
7. Available with 6-pin lens connector for 1/2-inch and 1/3-inch cameras. Replace the "D2" suffix with an "A" suffix.
8. Requires ±12 VDC for zoom/focus control.
9. Pre-position option available. Add the "P" suffix to model number for pre-position option.
10. Requires use of lens rail TC1309.
11. Manual override activation via an enable line and control wire at 4 VDC to 12 VDC.
12. Operational temperature range is -10 ºC (+14 ºF) to +50 ºC (+122 ºF).
13. Dimensions given are not actual lens size. Due to odd lens shape, the dimensions given are minimum cavity size to house the lens.
14. Images are reversed both horizontally and vertically. Mount cameras upside down to correct for image reversal.
15. Image is reversed horizontally. Correction must be performed by reversing the horizontal deflection wires on the monitor.
16. F-stop of lens will increase in proportion to the magnification of extender.

Field-of-View Guide

The Field-of-View Guide provides a horizontal angle-of-view (A.O.V) and a horizontal view at 100 feet. To obtain the vertical data for each lens multiply the horizontal data by 0.75. To obtain view information for distances other than 100 feet, multiply (supplied data at 100 feet) by the [(new distance)/(100 feet)]. Example: The horizontal view for a 2.8 mm lens with a 1/3-inch imager is 175 feet at 100 feet. If the horizontal view a 50 feet is desired: (175) (50)/100 = 87.5. A 2.8 mm lens with a 1/3-inch imager provides a view of 87.5 feet at an object distance of 50 feet.



Focal Length (mm)	Available Formats (in)	1/3-inch Image Horizontal A.O.V.	1/3-inch Image Horizontal View at 100'	1/2-inch Image Horizontal A.O.V.	1/2-inch Image Horizontal View at 100'	2/3-inch Image Horizontal A.O.V.	2/3-inch Image Horizontal View at 100'	1-inch Image Horizontal A.O.V.	1-inch Image Horizontal View at 100'
2.8	1/3	**82.4°**	**175**	---	---	---	---	---	---
3.5	1/3(Vari-focal)	**70°**	**140**	---	---	---	---	---	---
3.6	1/3	**68.5°**	**136**	---	---	---	---	---	---
3.7	1/2	67°	132	**81.7°**	**173**	---	---	---	---
4	1/3	**63°**	**122**	---	---	---	---	---	---
4.2	1/2	60.5°	117	**74.6°**	**152**	---	---	---	---
4.8	2/3	54.1°	102	67.4°	133	**85°**	**183**	---	---
5.7	2/3	46.5°	86	58.6°	112	**75.3°**	**154**	---	---
5.8	1/3 (Zoom)	**45.8°**	**84**	---	---	---	---	---	---
6	1/2	44.4°	82	**56.1°**	**107**	---	---	---	---
6.2	1/2 (Pin Hole)	43.1°	79	**54.6°**	**103**	---	---	---	---
6.3	1/3 (Zoom)	**42.5°**	**78**	---	---	---	---	---	---
6.5	1	41.3°	75	52.4°	98	68.2°	135	**89.1°**	**197**
7.5	1/2 (Zoom)	36.2°	65	**46.2°**	**85**	---	---	---	---
8	1/3	**34.1°**	**61**	---	---	---	---	---	---
8	1/2 (Zoom)	34.1°	61	**43.6°**	**80**	---	---	---	---
8	2/3	34.1°	61	43.6°	80	**57.6°**	**110**	---	---
8.5	2/3	32.2°	58	41.3°	75	**54.7°**	**104**	---	---
9	2/3 (Pin Hole)	30.5°	54	39.1°	71	**52.1°**	**98**	---	---
9	1	30.5°	54	39.1°	71	52.1°	98	**70.8°**	**142**
10	2/3 (Zoom)	27.5°	49	35.5°	64	**47.5°**	**88**	---	---
12	1/2	23.1°	41	**30°**	**53**	---	---	---	---
12.5	2/3 (Zoom)	22.2°	39	28.7°	51	**38.8°**	**70**	---	---
12.5	1	22.2°	39	28.7°	51	38.8°	70	**54.2°**	**102**
15	1 (Zoom)	18.6°	33	24.1°	43	32.7°	59	**46.2°**	**85**
16	2/3	17.4°	31	22.6°	40	**30.8°**	**55**	---	---
25	1	11.2°	20	14.6°	26	20°	35	**28.7°**	**51**
38	1/3 (Zoom)	**7.4°**	13	---	--	---	---	---	---
48	1/2 (Zoom)	5.8°	10	**7.6°**	**13**	---	---	---	---
50	1	5.6°	10	7.3°	13	10°	18	**14.6°**	**26**
58	1/3 (Zoom)	**4.8°**	**8**	---	---	---	---	---	---
75	1/2 (Zoom)	3.7°	6	**5°**	**8**	---	---	---	---
75	2/3 (Zoom)	3.7°	6	5°	8	**6.7°**	**12**	---	---
75	1	3.7°	6	5°	8	6.7°	12	**9.8°**	**17**
100	2/3 (Zoom)	2.8°	5	3.7°	6	**5°**	**9**	---	---
140	2/3 (Zoom)	2°	4	2.6°	5	**3.6°**	**6**	---	---
180	1 (Zoom)	1.6°	3	2°	4	2.8°	5	**4.1°**	**7**

Note: Values shown in **bold type** show horizontal angle of view (A.O.V.) and horizontal view at the designed lens format. Values shown in non-bold show horizontal A.O.V. and horizontal view when lens is applied to smaller image format cameras. The (---) indicates lens may not be used with the imager format designated. Nominal Field of View calculated per imager dimensions shown.

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