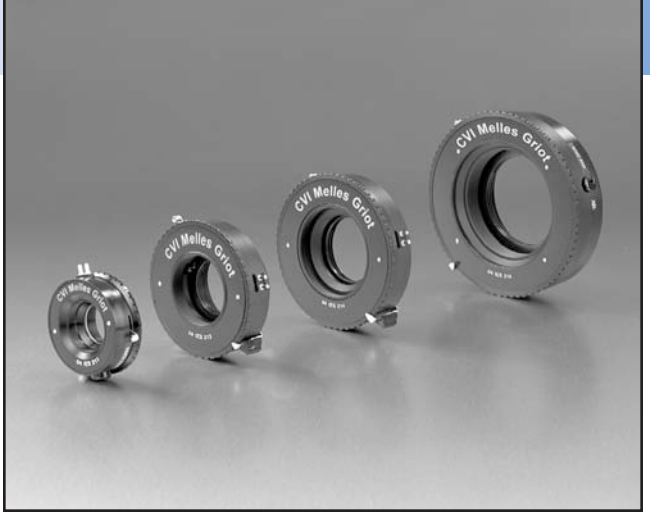


IES™ Electronic Shutters

IES™-series electronic shutters are well suited for laboratory and OEM optical applications that demand the ability to shutter light beams with 100% transmission and high extinction. In addition to the shutter blades, IES-series shutters contain an iris diaphragm which can adjust the shutter's clear aperture from maximum to approximately 10 percent of maximum.

For electronic flash synchronization or event triggering, IES shutters include an X-syncronization switch that provides electrical continuity when the shutter blades are fully open. For ease of setup, a manual actuation lever permits the opening and closing of the shutters without an electrical signal. All shutters are supplied with a mounting flange that threads onto the shutter's rear outer mounting threads.

IES™ Electronic Shutters

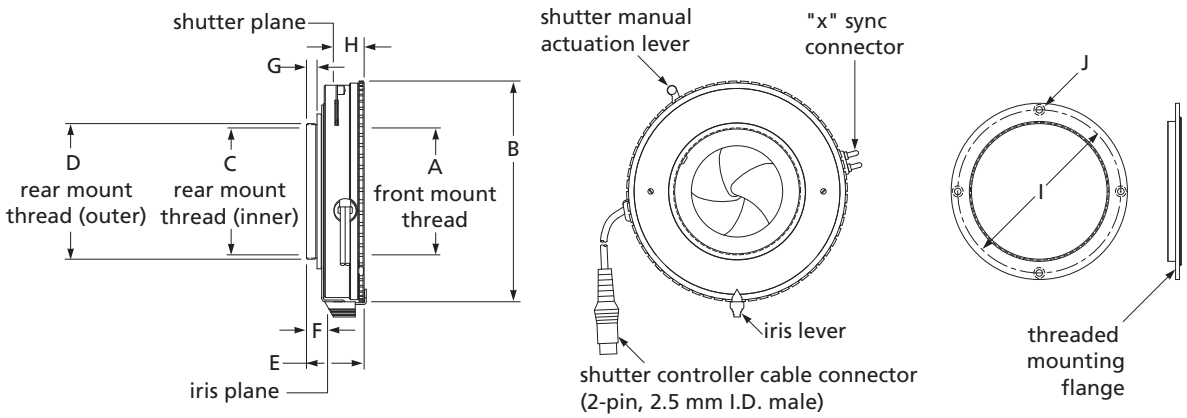
Maximum Aperture (mm)	Minimum Aperture (mm)	Configuration	Maximum Speed* (sec)	Diaphragm Blades	Shutter Blades	Rated Solenoid Voltage (Vdc)	Resistance** (Ω)	Inductance (mH)	Connector Included	Dimension Code	PART NUMBER
25.4	1.6	Normally Closed	1/60	10	5	3	3	2.67	No	Type 1	04 IES 212
25.4	1.6	Normally Closed	1/60	10	5	6	12	12.6	No	Type 1	04 IES 218
25.4	1.6	Normally Closed	1/60	10	5	12	50	54.9	Yes	Type 1	04 IES 211
25.4	1.6	Normally Closed	1/60	10	5	24	208	233	No	Type 1	04 IES 220
25.4	1.6	Normally Closed	1/60	10	5	48	830	817	No	Type 1	04 IES 222
34.9	2.2	Normally Closed	1/60	10	5	6	8.5	10.3	No	Type 2	04 IES 224
34.9	2.2	Normally Closed	1/60	10	5	12	30	35.6	Yes	Type 2	04 IES 213
34.9	2.2	Normally Closed	1/60	10	5	24	130	157	No	Type 2	04 IES 226
34.9	2.2	Normally Closed	1/60	10	5	48	500	596	No	Type 2	04 IES 228
42.7	3.4	Normally Closed	1/30	10	5	6	8.5	10.3	No	Type 3	04 IES 230
42.7	3.4	Normally Closed	1/30	10	5	12	30	35.6	Yes	Type 3	04 IES 214
42.7	3.4	Normally Closed	1/30	10	5	24	130	157	No	Type 3	04 IES 232
42.7	3.4	Normally Closed	1/30	10	5	48	500	596	No	Type 3	04 IES 234
63.5	5.1	Normally Closed	1/30	12	6	6	6	11.4	No	Type 4	04 IES 236
63.5	5.1	Normally Closed	1/30	12	6	12	24	45.7	Yes	Type 4	04 IES 215
63.5	5.1	Normally Closed	1/30	12	6	24	86	143	No	Type 4	04 IES 238
63.5	5.1	Normally Closed	1/30	12	6	48	416	655	No	Type 4	04 IES 240

**Typical ** Resistance is nominal (±10%) at 20°C and will vary approximately 0.39% per °C.*
Note: Solenoid properties are nominal and apply at a 10% duty cycle as calculated by the formula: Duty Cycle (% of rated power) for a 20-msec pulse = 100 × (0.32 + 0.25 × hold time)/(total cycle time). To achieve specified performance, duty cycle, calculated by the preceeding formula, should not exceed 100%

continued

IES™ Electronic Shutters, Mechanical Dimensions

Dimension Code	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)
Type 1	M31.2 × 0.50	63.0	M31.2 × 0.50	M33.7 × 0.60	23.9	8.5	6.5	13.4	42	2.4 through (3 plcs)
Type 2	M45.0 × 0.50	87.3	M45.0 × 0.50	M48.6 × 0.64	26.4	9.5	6.2	14.9	60.6	2.4 through (4 plcs)
Type 3	M59.6 × 0.64	103.3	M59.6 × 0.64	M63.5 × 0.85	27.0	9.8	4.7	15.7	76.4	3.0 through (4 plcs)
Type 4	M76.2 × 0.85	132.0	M76.2 × 0.85	M82.1 × 0.85	34.0	9.5	6.0	22.5	97.2	3.0 through (4 plcs)



04 IES-series electronic shutter

IES™-Series Electronic Shutter Features

- High-reliability and high-speed multiblade shutter system to provide near 100% light extinction.
- Adjustable iris diaphragm, X-synchronization, and manual actuation lever.
- Spring-steel blades with Teflon®-impregnated, black matte finish for smooth, reliable operation.
- Offered in normally closed (standard) and normally open configurations.
- Multiple voltages available including 12 Vdc (standard), 3, 6, 24, and 48 Vdc.