Available in:
✔ **Production Quantities**
✔ **Custom Configurations**

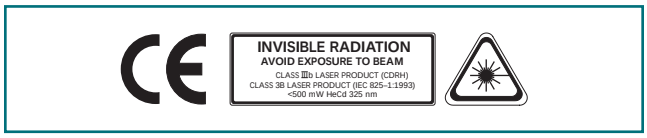
Unpolarized Helium Cadmium Laser Systems

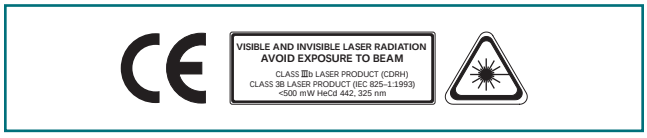
Small-Frame Laser Systems

- Output power to 50 mW at 442 nm or 18 mW at 325 nm
- Pointing stability better than 20 μrad
- Excellent mode quality with M^2<1.2 (TEM_{00} versions)
- Operating life >5000 hours
- CE and CDRH compliant.

Small-frame *Omnichrome* helium cadmium (HeCd) lasers from Melles Griot, the world's most compact and rugged high-performance HeCd systems, are ideal sources for automatic optical inspection, biomedical fluorescence detection, confocal microscopy, wafer inspection, and a wide variety of other applications. These systems exhibit excellent pointing stability and mode quality (single-mode versions) as well as long operational life.

Omnichrome helium cadmium lasers incorporate a unique internal mirror design that eliminates the losses introduced by optical windows, coupled with a rugged Invar external support structure. The result is a system that has exceptional output power for its size, and, from a cold start, reaches full power and stability in just 15 minutes. The Invar support structure provides outstanding long-term power and pointing stability, ideal for scanning applications.





SPECIFICATIONS: SMALL-FRAME LASER SYSTEMS

Beam Characteristics

Wavelength: 325 nm, 442 nm, or dual wavelength
Coherence Length: 10 cm
Mode Spacing: 268 MHz
Polarization: Random
Pointing Stability: <20 μrad @ ambient ±2ºC
Power Stability: ±2% over a 4-hour period @ ambient

General Characteristics

Warm-up Time: <15 minutes from cold start
Recovery from Standby: < 5 minutes
Cooling: Forced air
Operating Temperature: 10ºC to 40ºC
Storage Temperature: −20ºC to 60ºC
Operating Humidity: 0–90% non-condensing
Maximum Shock (in shipping container): 30 G

Electrical Characteristics

Voltage* (Specify): 85–265 Vac
Frequency: 47-63 Hz, single phase

Safety Classification: CDRH IIIb, IEC 3B

Weight:

Laser head: 7.7 kg (17.0 lb)
Power Supply: 5.90 kg (13.0 lb)

Blue (442 nm) Small-Frame Helium Cadmium Laser Systems

Output Power (mW)	Mode	Beam Diameter (mm)	Beam Divergence (mrad)	M^2	Noise (dc-2MHz) (% rms)	PRODUCT NUMBER*
15	TEM_{00}	0.32	2.1	1.2	0.9	45 LRS 401
20	TEM_{00}	0.32	2.1	1.2	0.9	45 LRS 402
30	Multimode	1.10	2.0	4.0	0.9	45 MRS 401
50	Multimode	1.10	2.0	4.0	0.9	45 MRS 402

**Append the appropriate suffix to the product number to specify line plug, (power supply is self-sensing) -100 for 100 Vac, -120 for 120 Vac, -220 for 220 Vac, -230 for 230 Vac, -240 for 240 Vac.*

Ultraviolet (325 nm) Small-Frame Helium Cadmium Laser Systems

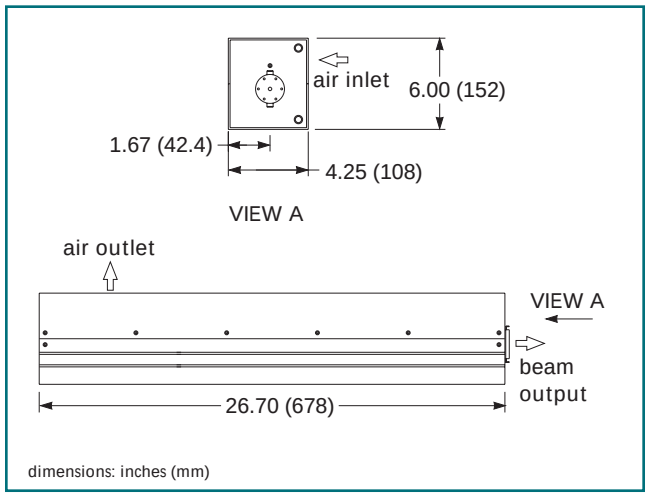
Output Power (mW)	Mode	Beam Diameter (mm)	Beam Divergence (mrad)	M^2	Noise (dc-2MHz) (% rms)	PRODUCT NUMBER*
2	TEM_{00}	.28	2.0	1.4	1.8	45 LRS 301
4	TEM_{00}	.28	2.0	1.4	1.8	45 LRS 302
5	TEM_{00}	.28	2.0	1.4	1.8	45 LRS 303
10	Multimode	1.10	1.3	3.5	1.5	45 MRS 301
15	Multimode	1.10	1.3	3.5	1.5	45 MRS 302
18	Multimode	1.10	1.3	3.5	1.5	45 MRS 303

**Append the appropriate suffix to the product number to specify line plug, (power supply is self-sensing) -100 for 100 Vac, -120 for 120 Vac, -220 for 220 Vac, -230 for 230 Vac, -240 for 240 Vac.*

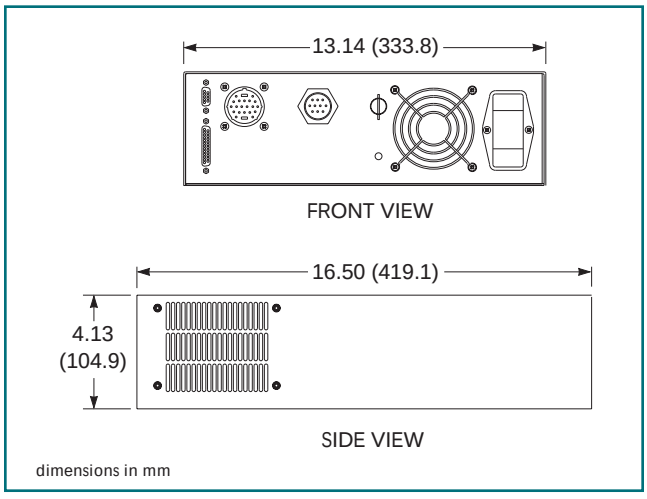
Dual Wavelength (325 nm/442 nm) Small-Frame Helium Cadmium Laser Systems

Output Power (mW)			Beam Diameter (mm)		Beam Divergence (mrad)		M^2		Noise (dc-2MHz) (% rms)		
325 nm	442 nm	Mode	325 nm	442 nm	325 nm	442 nm	325 nm	442 nm	325 nm	442 nm	PRODUCT NUMBER*
2	10	TEM_{00}	0.26	0.24	1.9	2.6	1.2	1.1	1.6	1.2	45 LRS 801
3	12	TEM_{00}	0.26	0.24	1.9	2.6	1.2	1.1	1.6	1.2	45 LRS 802
8	25	Multimode	2.0	1.9	2.9	2.8	14	9	1.0	0.8	45 MRS 801
10	30	Multimode	2.0	1.9	2.9	2.8	14	9	1.0	0.8	45 MRS 802
15	35	Multimode	2.0	1.9	2.9	2.8	14	9	1.0	0.8	45 MRS 803

**Append the appropriate suffix to the product number to specify line plug, (power supply is self-sensing) -100 for 100 Vac, -120 for 120 Vac, -220 for 220 Vac, -230 for 230 Vac, -240 for 240 Vac.*



Small-frame helium cadmium laser head



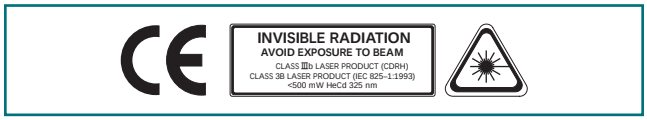
Small frame helium cadmium power supply/controller

Medium-Frame Laser Systems

- Output power to 130 mW at 442 nm or 40 mW at 325 nm
- Pointing stability better than 20 μrad
- Excellent mode quality with M^2<1.2 (TEM_{00} versions)
- CE and CDRH compliant

Medium-frame *Omnichrome* helium cadmium lasers from Melles Griot, are ideal sources for biomedical fluorescence detection, CD and DVD mastering, embossed holography, pattern generation, stereolithography, and a wide variety of other applications. These systems exhibit excellent pointing stability and mode quality (single-mode versions) as well as long operational life.

Omnichrome helium cadmium lasers incorporate a unique internal mirror design that eliminates the losses introduced by optical windows, coupled with a rugged Invar external support structure. The result is a system that has exceptional output power for its size, and, from a cold start, reaches full power and stability in just 15 minutes. The Invar support structure provides outstanding long-term power and pointing stability.



SPECIFICATIONS: MEDIUM-FRAME LASER SYSTEMS

Beam Characteristics

Wavelength: 325 nm, 442 nm, or dual wavelength
Coherence Length: 10 cm
Mode Spacing: 203 MHz
Polarization: Random
Pointing Stability: <20 μrad @ ambient ±2ºC
Power Stability: ±2% over a 4-hour period @ ambient

General Characteristics

Warm-up Time: <15 minutes from cold start
Recovery from Standby: < 5 minutes
Cooling: Forced air
Operating Temperature: 10ºC to 40ºC
Storage Temperature: −20ºC to 60ºC
Operating Humidity: 0–90% relative non-condensing
Maximum Shock (in shipping container): 30 G

Electrical Characteristics

Voltage* (Specify): 85–265 Vac
Frequency: 48–63 Hz

Safety Classification: CDRH IIIb, IEC 3B

Weight:

Laser head: 10.9 kg (24.0 lb)
Power Supply: 5.90 kg (13.0 lb)

Blue (442 nm) Medium-Frame Helium Cadmium Laser Systems

Output Power (mW)	Mode	Beam Diameter (mm)	Beam Divergence (mrad)	M^2	Noise (dc-2MHz) (% rms)	PRODUCT NUMBER*
30	TEM_{00}	0.43	1.60	1.2	0.6	45 LRM 401
40	TEM_{00}	0.43	1.60	1.2	0.6	45 LRM 402
70	TEM_{00}	1.10	0.65	1.4	0.6	45 LRM 413
90	TEM_{00}	1.10	0.85	2.0	0.6	45 LRM 403
100	Multimode	1.90	3.00	10.0	0.6	45 MRM 401
125	Multimode	1.90	3.00	10.0	0.6	45 MRM 402

**Append the appropriate suffix to the product number to specify line plug, (power supply is self-sensing) -100 for 100 Vac, -120 for 120 Vac, -220 for 220 Vac, -230 for 230 Vac, -240 for 240 Vac.*

Ultraviolet (325 nm) Medium-Frame Helium Cadmium Laser Systems

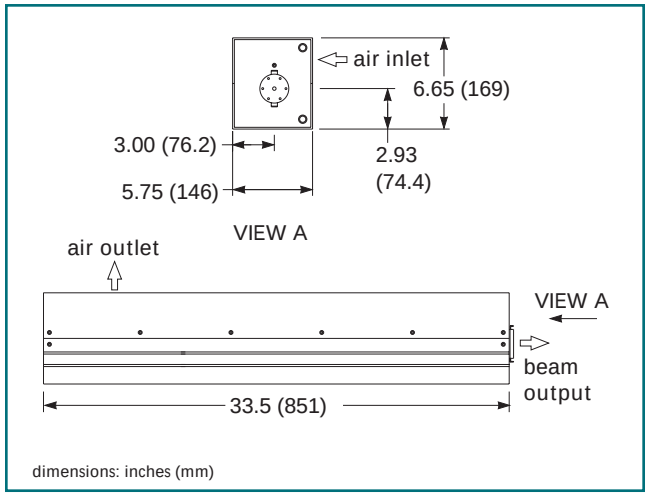
Output Power (mW)	Mode	Beam Diameter (mm)	Beam Divergence (mrad)	M^2	Noise (dc-2MHz) (% rms)	PRODUCT NUMBER*
6	TEM_{00}	0.33	1.50	1.2	1.0	45 LRM 301
8	TEM_{00}	0.33	1.50	1.2	1.0	45 LRM 302
20	Multimode	1.40	1.40	5.5	0.8	45 MRM 301
30	Multimode	1.40	1.40	5.5	0.8	45 MRM 302
40	Multimode	1.40	1.40	5.5	0.8	45 MRM 303

**Append the appropriate suffix to the product number to specify line plug, (power supply is self-sensing) -100 for 100 Vac, -120 for 120 Vac, -220 for 220 Vac, -230 for 230 Vac, -240 for 240 Vac.*

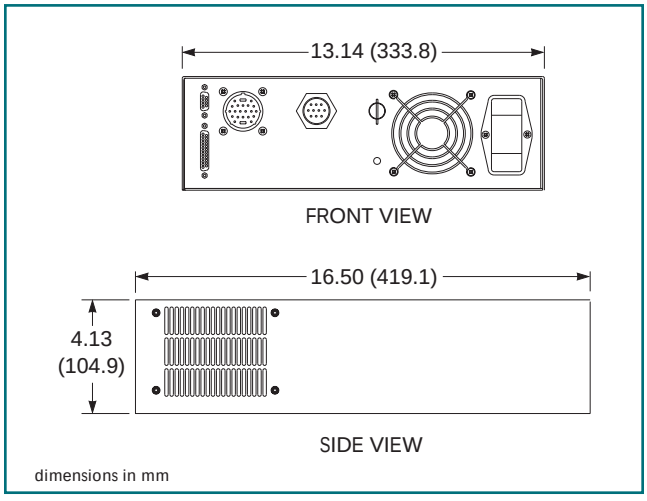
Dual Wavelength (325 nm/442 nm) Medium-Frame Helium Cadmium Laser Systems

Output Power (mW)			Beam Diameter (mm)		Beam Divergence (mrad)		M^2		Noise (dc-2MHz) (% rms)		
325 nm	442 nm	Mode	325 nm	442 nm	325 nm	442 nm	325 nm	442 nm	325 nm	442 nm	PRODUCT NUMBER*
5	20	TEM_{00}	0.33	0.31	1.5	1.6	1.2	1.1	1.7	1.1	45 LRM 801
15	70	Multimode	1.9	2.0	2.6	3.0	13	10	0.8	0.4	45 MRM 801
25	80	Multimode	1.9	2.0	2.6	3.0	13	10	0.8	0.4	45 MRM 802
35	100	Multimode	1.9	2.0	2.6	3.0	13	10	0.8	0.4	45 MRM 803

**Append the appropriate suffix to the product number to specify line plug, (power supply is self-sensing) -100 for 100 Vac, -120 for 120 Vac, -220 for 220 Vac, -230 for 230 Vac, -240 for 240 Vac.*



Medium-frame helium cadmium laser head



Medium-frame helium cadmium power supply/controller

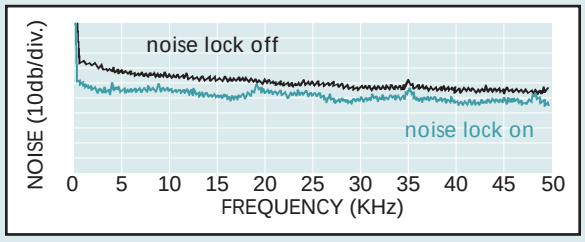
Available in:
✔ **Production Quantities**
✔ **Custom Configurations**

Polarized Helium Cadmium Laser Systems

- Linear polarization with >500:1 extinction ratio
- Output power to 80 mW at 442 nm or 25 mW at 325 nm
- Unsurpassed mode quality with M^2<1.10 (TEM_{00} versions)
- NoiseLock™ noise suppression circuitry

Polarized *Liconix* helium cadmium (HeCd) lasers, manufactured by Melles Griot, are ideal laboratory instruments. They incorporate dual Brewster windows to ensure optimum polarization, and the NoiseLock™ feature, standard with most of these lasers, allows the user to suppress beam noise by an order of magnitude over specifically desired frequency ranges. Models with interchangeable mirrors are available to optimize output for either 442 nm and 325 nm, and to ensure excellent mode quality.

NoiseLock™ NOISE SUPPRESSION CIRCUITS



By injecting a specific noise frequency into the laser, the rms and p-p noise can be dramatically reduced. NoiseLock™ enhances the signal to noise ratio for most detection systems by an order of magnitude.

SPECIFICATIONS: POLARIZED LASER SYSTEMS

Beam Characteristics
- **Wavelength:** 325 nm or 442 nm
- **Coherence Length:** 10 cm
- **Polarization:** Linear, vertical (>500:1 extinction ratio)
- **Pointing Stability:** <10 μrad @ constant temperature
- **Power Stability:** <3%/hour

General Characteristics
- **Warm-up Time:** <30 minutes from cold start
- **Cooling:** Convection
- **Operating Temperature:** 10°C to 30°C
- **Storage Temperature:** −20°C to 50°C
- **Operating Humidity:** 0–90% relative (no condensation)
- **Maximum Shock (in shipping container):** 20 G

Electrical Characteristics
- **Voltage** (Specify):** 100-230 Vac
- **Frequency:** 50-60 Hz, single phase

Safety Classification: CDRH IIIb

Weight:
- **Laser head:** 10.9 kg (24.0 lb)
- **Power Supply:** 5.90 kg (13.0 lb)

Blue (442 nm) Polarized Helium Cadmium Laser Systems

Output Power (mW)	Mode	Beam Diameter (mm)	Beam Divergence (mrad)	Mode Spacing (MHz)	M^2	Noise (dc-10 MHz) (% rms)	Noise (dc-100 kHz) (% p-p)	PRODUCT NUMBER*
10	TEM_{00}	1.0	0.6	278	<1.1	<2.0	<10	45 LPS 410
30	TEM_{00}	1.2	0.5	163	<1.1	<2.0	<10	45 LPM 430
40	TEM_{00}	1.2	0.5	163	<1.1	<2.0	<10	45 LPM 440
50	TEM_{00}	1.2	0.5	163	<1.1	<2.0	<10	45 LPM 450
70	TEM_{00}	1.2	0.5	163	<1.1	<4.0**	<20	45 LPM 470
20	Multimode	1.3	1.0	278	<4.0	<2.0	<10	45 MPS 420
60	Multimode	1.3	1.0	163	<4.0	<2.0	<10	45 MPM 460
80	Multimode	1.3	1.0	163	<4.0	<4.0**	<20	45 MPM 480

**Append the appropriate suffix to the product number to specify input voltage: -100 for 100 Vac, -117 for 115–120 Vac, -220 for 220 Vac.*
***NoiseLock™ not available.*

Ultraviolet (325 nm) Polarized Helium Cadmium Laser Systems

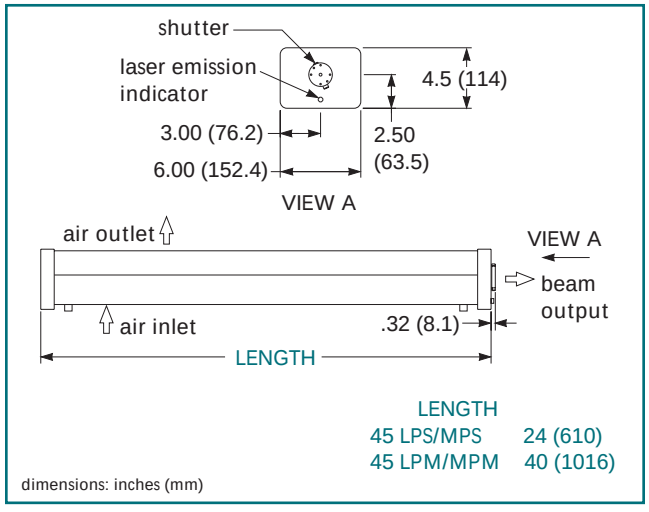
Output Power (mW)	Mode	Beam Diameter (mm)	Beam Divergence (mrad)	Mode Spacing (MHz)	M^2	Noise (dc-10 MHz) (% rms)	Noise (dc-100 kHz) (% p-p)	PRODUCT NUMBER*
2	TEM_{00}	0.2	1.9	278	<1.1	<2.0	<10	45 LPS 302
7	TEM_{00}	1.0	0.5	163	<1.1	<2.0	<10	45 LPM 307
10	TEM_{00}	1.0	0.5	163	<1.1	<4.0**	<20	45 LPM 310
14	TEM_{00}	1.0	0.5	163	<1.1	<4.0**	<20	45 LPM 314
5	Multimode	1.3	1.9	278	<4.0	<2.0	<10	45 MPS 305
15	Multimode	1.1	1.0	163	<4.0	<2.0	<10	45 MPM 315
20	Multimode	1.1	1.0	163	<4.0	<4.0**	<20	45 MPM 320
25	Multimode	1.1	1.0	163	<4.0	<4.0**	<20	45 MPM 325

**Append the appropriate suffix to the product number to specify input voltage: -100 for 100 Vac, -117 for 115-120 Vac, -220 for 220 Vac.*
***NoiseLock™ not available.*

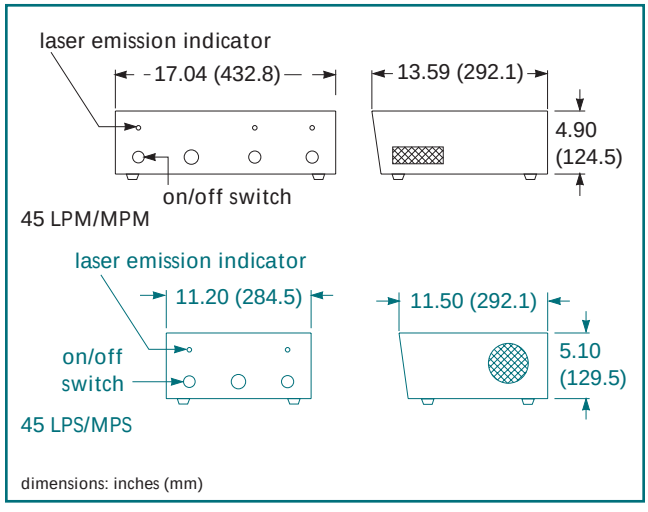
Dual Wavelength (325 nm/442 nm) Polarized Helium Cadmium Laser Systems (interchangeable optics)

Output Power (mW)		Mode	Beam Diameter (mm)		Beam Divergence (mrad)		M^2		Noise (dc-10 MHz) (% rms)		PRODUCT NUMBER*
325 nm	442 nm		325 nm	442 nm	325 nm	442 nm	325 nm	442 nm	325 nm	442 nm	
5	30	TEM_{00}	1.0	1.2	.5	.5	1.1	1.1	<2.5	<2.0	45 LPM 830
7	40	TEM_{00}	1.0	1.2	.5	.5	1.1	1.1	<2.5	<2.0	45 LPM 840
10	70	TEM_{00}	1.0	1.2	.5	.5	1.1	1.1	<2.5	<2.0	45 LPM 870

** Append the appropriate suffix to the product number to specify input voltage:-100 for 100 Vac, -117 for 115-120 Vac, -220 for 220 Vac.*
***NoiseLock™ not available.*



Polarized helium cadmium laser head



Polarized helium cadmium power supply/controller