

# HeNe 激光器

## HeNe激光器 GNIK-3系列

参数	GNIK-3-1	GNIK-3-2	GNIK-3-2A	GNIK-3-3	GNIK-3-3A	GNIK-3-4	GNIK-3-4A	GNIK-3-K
波长, $\mu\text{m}$	3.3922	3.3922	3.3912	3.3922	3.3912	3.3922	3.3912	3.5
最大输出功率, mW	3.0	9.0	4.0	14.0	7.0	23.0	10.0	12.0
谱线结构	TEM <sub>mn</sub>							
光偏振	1:1/100:1		100:1	1:1/100:1	100:1	1:1/100:1	100:1	
光束直径, mm	2.5	3.0		3.5		4.5		2.5
发散角, mrad	3.0	3.0		3.5		4.5		3.0
功耗, W	40	65		110		120		65
激光头尺寸, mm	$\varnothing 45 \times 500$	$\varnothing 56 \times 685$		$\varnothing 56 \times 930$		$\varnothing 56 \times 1250$		$\varnothing 55 \times 930$
电源尺寸, mm	100 $\times$ 65 $\times$ 330			152 $\times$ 110 $\times$ 340				100 $\times$ 65 $\times$ 330
重量, kg (激光头/电源)	0.7/2.5	1.7/2.5		3.0/5.0		5.0/5.0		3.0/2.5
平均寿命, h	25000							

## HeNe激光器 LGN系列 632.8nm波段

### HeNe激光器 LGN系列 0.63波段

参数	LGN-225A	LGN-226A	LGN-223	LGN-223-1	LGN-115	LGN-118
最大输出功率 (mW)	2.0	1.5	10	10	15	25
谱线结构	TEM <sub>00</sub>				TEM <sub>mn</sub>	
最大偏振	1:1	100:1	1:1	100:1	1:1	
光束直径 (mm)	0.6		1.0		2.5	
发散角 (mrad)	1.5		1.3		3.0	
功耗 (W)	15		55			65
激光头尺寸 (mm)	$\varnothing 30 \times 196$		$\varnothing 44 \times 485$		$\varnothing 44 \times 500$	$\varnothing 44 \times 685$
电源尺寸(mm)	150 $\times$ 60 $\times$ 170 (110 $\times$ 35 $\times$ 85*)		100 $\times$ 65 $\times$ 330			
重量, kg (激光头/电源)	0.23/1.2(0.4*)		0.85/2.5			1.5/2.5



# 国产氦氖激光器

## 国产激光器

### 1. 氦氖激光器



#### 说明及主要参数:

- 波长: 632.8nm
- 横模: TEM<sub>00</sub>
- 发散角: <1mrad
- 功率稳定性: <±2.5%
- 激光器包括两部分: 激光管及电源
- 激光电源外形尺寸: 220×150×65mm
- 激光管的尺寸, 参见选型表中内容

#### 选型表:

型号	名称	直径 (mm)	长度 (mm)	说明
He-Ne-laser-0.5	氦氖激光器	φ30	170	含电源(电流可调), 功率≥0.5mW
He-Ne-laser	氦氖激光器	φ40	270	含电源(电流可调), 功率≥2mW

### 2. 半导体激光器



#### 主要参数:

- 波长包括: 405nm、532nm、650nm等
- 功率: 0.4~120mW
- 电压: DC2.7~6V
- 发散角: 0.2~2mrad
- 光斑直径: 约1mm

#### 选型表:

型号	名称	尺寸 (mm)	功率(mW)	工作电流	工作电压
LD-405-2.5-5T	蓝光半导体激光器	φ12×34	2.5	≤180mA	DC3~6V
LD-532-3-5T	绿光半导体激光器	φ12×45	3	≤500mA	DC2.7~6V
LD-650-2.5-5T	红光半导体激光器	φ12×34	2.5	≤120mA	DC2.7~6V

说明: 型号中含T为带标配电源套件, 不带T只有激光器, 电源可另配。

## 进口氦氖激光器

### 激光器:

#### 美国CVI-MellesGriot公司激光器

CVI-MellesGriot 公司 (以下简称 MG) 不仅具有优质的光学元件和相关的机产品外, 还生产多种激光器, 其中 MG 的氦氖激光器是全球最知名的产品, 高品质的光斑 (TEM<sub>00</sub> 模式, M<sup>2</sup> 因子非常接近 1)、平均无故障时间长达 50, 000 小时! 此外, MG 还提供多种 DPSS、半导体、氩镭及离子激光器。由于内容较多, 提供产品选型表如下, 如果需要可联系我们:

	Wavelength Range (nm)	Power Range (mW)	Lasng Technology
<b>Solid-State Lasers</b> 	457	100-300	Diode-Pumped Solid-State
	473	5-15	Diode-Pumped Solid-State
	488	10-50	Directly Doubled Diode
	488	10-20	Directly Doubled Diode (fiber delivery)
	532	1,000-3,000	Diode-Pumped Solid-State
	532	5-20	Diode-Pumped Solid-State
	561	10-75	Diode-Pumped Solid-State
	561	5-15	Diode-Pumped Solid-State (fiber delivery)
<b>Ion Lasers</b> 	457, 488, 514, all lines	5-65	Argon Ion
	457-514	4-195 per line	Argon Ion
	476-676	4-20 per line	Krypton Argon Ion
	488, 514, all lines	150-300	Argon Ion
	488, 514, all lines	50-100	Argon Ion
	488, 568, 647	10-15 per line	Krypton Argon Ion
	488, 568	20 per line	Krypton Argon Ion
<b>Helium Cadmium Lasers</b> 	325	2-18	Helium Cadmium
	325	6-40	Helium Cadmium
	325	20-50	Helium Cadmium
	442	30-130	Helium Cadmium
	325/442	2-15/10-35	Helium Cadmium
	325/442	5-35/20-100	Helium Cadmium
<b>Diode Lasers</b> 	408, 442, 642, 658	37-75	Diode
	408, 442, 642, 658	36-75	Diode
	650	0.9-4.0	Diode
	638, 660, 670, 690, 1310, 1550	1.5-25	Diode (fiber delivery)
	638, 660, 670, 690, 785, 830	1.5-35	Diode (fiber delivery)
	<b>Helium Neon Lasers</b> 	543	0.20-2.0
594		0.75-2.0	Helium Neon
633		0.5-17	Helium Neon
633		25-35	Helium Neon
633		0.5-1.0	Helium Neon
633		0.5-1.0	Helium Neon
633		0.5-1.0	Helium Neon
633		0.5	Helium Neon



其中氦氖激光器的相关介绍:

照片及相关参数:



<b>Beam Characteristics</b>	
Output Wavelength	633 nm
Transverse Mode	TEM <sub>00</sub> (>90%)
M <sup>2</sup>	<1.05
<b>Stability Characteristics</b>	
Long-Term Power Drift	± 2% per hour
Pointing Stability	<0.03 mrad after 15 minutes
Amplitude Noise	rms <0.5% (30 Hz to 10 MHz)
<b>Operating Characteristics</b>	
Warm-up Time	<15 minutes
<b>Environmental Requirements</b>	
Operating Temperature	-20°C to +40°C
Nonoperating Temperature	-40°C to +80°C
Operating Humidity	0% to 90%, noncondensing
Nonoperating Humidity	0% to 100%
Shock	25 G for 11 msec
<b>Electrical Characteristics</b>	
Input Voltage	100 Vac, 115 Vac or 230 Vac ± 10% (specify)
Input Frequency	50-60 Hz
<b>Safety and Regulatory Compliance</b>	
Regulatory Compliance	CE Compliant (230-Vac only)

选型表:

Red (632.8 nm) Cylindrical Helium Neon Laser Systems

cw Output Power (mW)	Beam Diameter (1/e <sup>2</sup> ) (mm)	Beam Divergence (1/e <sup>2</sup> ) (mrad)	Maximum Mode Sweeping (%)	Polarization	Longitudinal Mode Spacing (MHz)	Laser Head Dimensions Length x Diameter (mm)	Power Supply Style	Safety Classification		PART NUMBER*
								CDRH Class	IEC Class	
0.5	0.46	1.77	10	Random	1063	177.8 x 31.8	A	II	2	25 LHR 213
0.5	0.46	1.77	10	Linear, >500:1	1063	177.8 x 31.8	A	II	2	25 LHP 213
1.0	0.59	1.35	5	Random	687	271.8 x 44.5	A	IIIa	3R	25 LHR 111
1.0	0.59	1.35	5	Linear, >500:1	687	271.8 x 44.5	A	IIIa	3R	25 LHP 111
2.0	0.76	1.06	5	Random	636	279.9 x 35.1	A	IIIa	3R	25 LHR 073
2.0	0.79	1.06	5	Linear, >500:1	636	279.9 x 35.1	A	IIIa	3R	25 LHP 073
2.0	0.59	1.35	5	Random	687	271.8 x 44.5	A	IIIa	3R	25 LHR 121
2.0	0.59	1.35	5	Linear, >500:1	687	271.8 x 44.5	A	IIIa	3R	25 LHP 121
2.5	0.52	1.53	10	Random	822	224.8 x 31.8	A	IIIa	3R	25 LHR 691
2.5	0.52	1.53	10	Linear, >500:1	822	224.8 x 31.8	A	IIIa	3R	25 LHP 691
5.0	0.80	1.00	2	Random	438	396.2 x 44.5	A	IIIb	3B	25 LHR 151
5.0	0.80	1.00	2	Linear, >500:1	438	396.2 x 44.5	A	IIIb	3B	25 LHP 151
7.0	1.02	0.79	2	Random	373	455.9 x 44.5	A	IIIb	3B	25 LHR 171
7.0	1.02	0.79	2	Linear, >500:1	373	455.9 x 44.5	A	IIIb	3B	25 LHP 171
10.0	0.65	1.24	2	Random	341	483.9 x 44.5	B	IIIb	3B	25 LHR 991
10.0	0.65	1.24	2	Linear, >500:1	341	483.9 x 44.5	B	IIIb	3B	25 LHP 991

\*Add the appropriate suffix to the product number to indicate input voltage: -249 for 115 Vac, -230 for 230 Vac.

**MG大功率氦氖激光器:**

**照片及相关参数:**



<b>Beam Characteristics</b>	
Output Wavelength	633 nm
$M^2$	<1.1
Transverse Mode	TEM <sub>00</sub> (>90%)
<b>Stability Characteristics</b>	
Long-Term Power Drift	±2% per hour
Pointing Stability	<0.03 mrad after 30 minutes
Amplitude Noise	
<i>rms</i>	<1.0% (30 Hz to 10 MHz)
<b>Operating Characteristics</b>	
Warm-up Time	<60 min (25 mW, 35 mW) to 95% of max power <15 min (17 mW) to 95% of max power
<b>Environmental Requirements</b>	
Operating Temperature	-20°C to +40°C
Nonoperating Temperature	-40°C to +80°C
Operating Humidity	0% to 90%, noncondensing
Nonoperating Humidity	0% to 100%
Shock	25 G for 11 msec
<b>Electrical Characteristics</b>	
Input Voltage	100 Vac, 115 Vac, or 230 Vac ±10% (specify)
Input Frequency	50-60 Hz
<b>Safety and Regulatory Compliance</b>	
CDRH Class	IIIb
IEC Class	3B
Regulatory Compliance	CE Compliant (230-Vac only)

**选型表:**

cw Output Power (mW)	Beam Diameter (1/e <sup>2</sup> ) (mm)	Beam Divergence (1/e <sup>2</sup> ) (mrad)	Maximum Mode Sweeping (%)	Polarization	Longitudinal Mode Spacing (MHz)	Noise (rms)	PART NUMBER*
17.0	0.96	0.84	1	Random	257	<0.5%	25 LHR 925
17.0	0.96	0.84	1	Linear, >500:1	257	<0.5%	25 LHP 925
25.0	1.23	0.66	5	Linear, >500:1	165	<1.0%	25 LHP 828
35.0	1.23	0.66	5	Linear, >500:1	165	<1.0%	25 LHP 928

\*Add the appropriate suffix to the product number to indicate input voltage: -249 for 115 Vac, -230 for 230 Vac.