



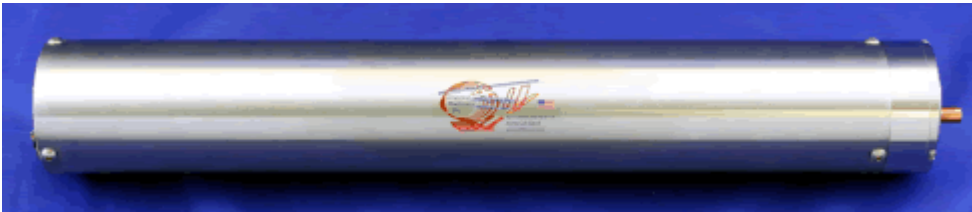
DP-S Series RF-excited Lasers

Technology Features:

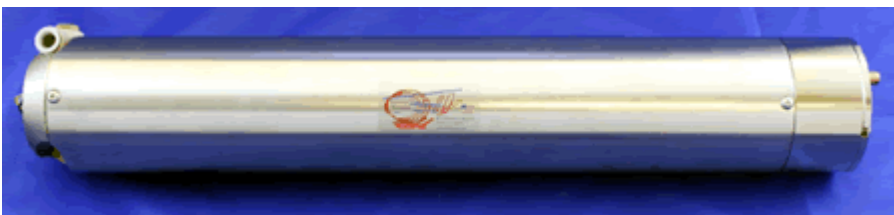
1. The better choice for drop-in plug and play replacement of S-100, S-200 (equivalent to CO2-DP-S20) and S-300 (equivalent to CO2-DP-S3) laser tubes in Domino laser coders.
2. Exclusive water/compressed air compatible cooling system (patent pending)
3. IP 65 rated enclosure
4. Exclusive titanium-body carbon dioxide laser (patent pending)
5. Stable long term mode alignment
6. Hermetic gas seal integrity for long life
7. Elimination of laser optical mode drift
8. Improved laser optical resonator system
9. Upgraded RF power supply components and configuration
10. DC decoupled RF electrodes for safety and elimination of DC arcing
11. Quad-Dipole "hot" RF electrode configuration
12. "Die-Hard" RF power transistor system with integrated electronic protection

Features:

1. 20Wt and 40W nominal S-Series drop-in replacement plug-and-play carbon dioxide laser source
2. Water or compressed air cooling standard
3. Enhanced RF stability and cold start-up performance
4. Advanced RF-pumped laser tube technology
5. 9.3-micron, 10.3-micron and 10.6-micron output wavelengths readily available
6. DC voltage arc-over immunity
7. Optical system isolated from coolant system (no coolant contamination of the optical system)
8. IP65 enclosure rating



CO2-DP-S20: Laser with Optional External Connector Plate (side view)



CO2-DP-S40: Laser with Optional External Connector Plate (side view)



CO2-DP-S20: Laser Rear Cooling Heat Exchanger



CO2-DP-S40: Laser Rear Cooling Heat Exchanger

Technical Specifications:

	CO2-DP-S20	CO2-DP-S40
Electrical Engineering		
Voltage input via S-Series controller	72 VDC	
Current input via S-Series controller	3.0 to 3.2 amps	6.0 to 6.4 amps
Laser enable signal via S-Series controller	5.0 volts	
Laser enable signal bandwidth	0 to 15 kHz	
Laser enable maximum turn-on delay	<12 microseconds	
Laser S-Series system connections	via S-Series 3-pin and 6-pin Molex connectors	
Interlock connection	via S-Series system interlock	
ESD tolerance (min)	15 kV static (to grounded laser chassis only)	
Optical Engineering		
Laser power output	18W min, 20W nom. & 25W max. (wavelength dependent)	35W min, 40W nom. & 45W max. (wavelength dependent)
Laser wavelength	10.6-microns, 10.3-microns or 9.3-microns	
Laser beam diameter/divergence	4.0/3.5 (mm/mrad) nominal	
Laser mode quality	>95% TEM ₀₀ electric field purity	
Laser rise/fall times (nominal)	150 μ sec /180 μ sec nominal	
Maximum electrical duty cycle (long term)	80% (water cooling required above 30%)	
Maximum marking duty cycle	100% (with water cooling)	
Maximum laser bore temperature	55 degrees C	
Maximum laser power droop w/temp.	20% of nominal at 55 degrees C	
Laser tube MTBF (projected)	50,000 hours	
Mechanical Engineering		
Dimensions	7.5cm OD x 49.5cm length	10.2cm OD x 61.0 cm length
Weight	3.8 kg	7.2 kg
Mounting holes & position	Per S-Series laser interface plate via precision alignment pins	
System Engineering		
Interlock, fault and remote disable	Via S-Series controller	
Laser enable source signal	Via S-Series controller	
Input cooling specification	Compressed air option (<30% duty cycle only): 5 ^o C to 35 ^o C unfiltered at specified laser head inlet gas pressure Water cooled option (all duty cycles): 15 ^o C to 30 ^o C at 1.0 to 3.0 liters/min	
Gas refill capability	At factory only	
Warranty	12 months	

DP-D Series RF-excited Lasers

Technology Features

1. The better choice for direct replacement DDC2 (equivalent to CO2-DP-D2) or DDC3 laser tubes (equivalent to CO2-DP-D3) in Domino laser coders.
2. World's first titanium-body carbon dioxide laser (patent pending)
3. Stable long term mode alignment
4. Improved gas seal process integrity for long life
5. Elimination of laser optical mode drift
6. Improved laser optical resonator system
7. Upgraded cooling fin mechanical support for improved robustness and cooling
8. Improved cooling fin RF grounding for enhanced RF power coupling
9. Upgraded RF power supply components and configuration
10. DC decoupled RF electrodes for safety and elimination of DC arcing
11. Single 360 degree rotation of RF "hot" electrode configuration
12. "Die-Hard" RF power transistor with integrated electronic protection
13. Corrosion resistant brass RF cover with Kapton sealing
14. "Drop-Safe" shipping container for maximum individual laser protection during transit
15. "Smart Start"TM, a unique laser cold start auto ignition system, prevents "Lazy Laser Syndrome" and extends shelf life of spare tubes (patent pending)

Features:

1. 25W nominal DDC2 series and 25W nominal DDC3 series compatible OEM plug-and-play carbon dioxide laser source
2. Enhanced RF stability and cold start-up performance
3. Advanced RF-pumped laser tube technology
4. 9.3-micron and 10.6-micron output wavelengths readily available
5. Standard and high speed pulse option
6. DC voltage arc-over immunity
7. Thermal grease free optical mount assembly



CO2-DP-D2 side view



CO2-DP-D3 side view

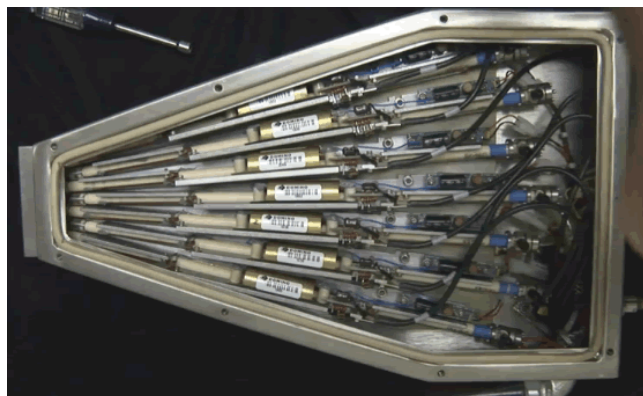


CO2-DP-D3 shipping container

Technical Specifications:

	CO2-DP-D2	CO2-DP-D3
Electrical Engineering		
Voltage input	84VDC via DDC2 controller	84VDC via DDC controller
Current input	3.0-3.2A via DDC2 controller	3.0-3.2A via DDC3 controller
Laser enable signal	5V via DDC2 controller	5V via DDC3 controller
Laser enable signal bandwidth	0 to 15 kHz	
Laser enable maximum turn-on delay	<12 microseconds	
Laser enable connection	via DDC2 50-ohm BNC numbered cable connector	via DDC3 50-ohm BNC numbered cable connector
Interlock/system status connection	via DDC2 system interlock	via DDC3 system interlock
ESD tolerance (min)	15kV static (to grounded laser chassis only)	
Optical Engineering		
Laser power output	20W min, 25W nom. & 30W max. (wavelength dependent)	
Laser wavelength	10.6-microns or 9.3-microns STD	
Laser beam diameter/divergence	4.0/3.5 (mm/mrad) nominal	
Laser mode quality	>95% TEM ₀₀ electric field purity	
Laser rise/fall times (nominal)	100µs/150µs nominal, 80µs/115µs high speed	
Maximum electrical duty cycle (long term)	25% (air chiller recommended above 15% duty)	
Maximum marking duty cycle	100%	
Maximum laser bore temperature	55 degrees C	
Maximum laser power droop w/temp.	20% of nominal at 55 degrees C	
Laser lifetime (nominal)	80% of nominal laser power at 50,000 hours	
Mechanical Engineering		
Dimensions	0.95 cm bore OD x 43 cm length	
Weight	0.44 kg	
Mounting holes & position	Per DDC2 laser interface plate	Per DDC3 laser interface plate
System Engineering		
Interlock, fault and remote disable	Via DDC2 controller	Via DDC3 controller
Laser enable source signal	Via DDC2 controller	Via DDC3 controller
Input cooling specification	Compressed air only 5°C to 35°C unfiltered compressed air at specified laser head inlet gas pressure	
Gas refill capability	At factory only	
Warranty	12 months	

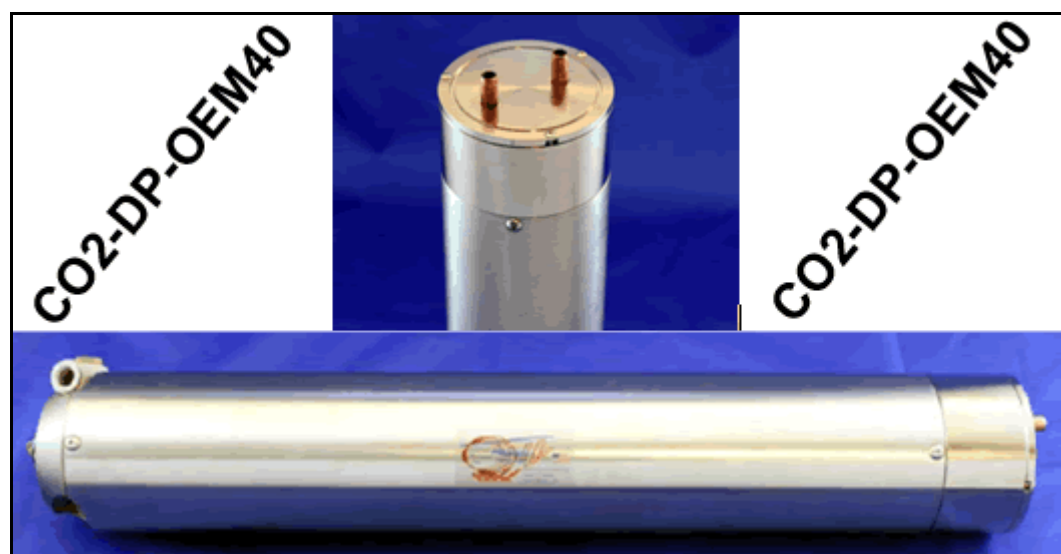
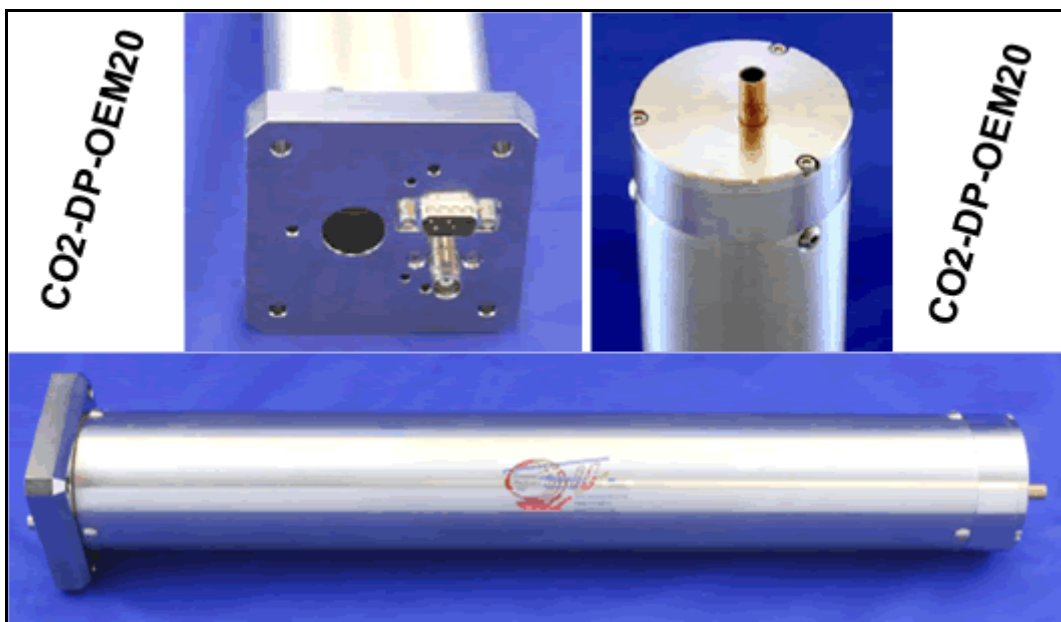
These lasers can be placed together in parallel and used in flying coders.



CO2-DP-OEM20 Series Laser

Technology Features

1. The best choice for multi-wavelength OEM carbon dioxide laser sources
2. Exclusive water/compressed air compatible cooling system (patent pending)
3. IP 65 rated enclosure
4. Exclusive titanium-body carbon dioxide laser (patent pending)
5. Stable long term mode alignment
6. Hermetic gas seal integrity for long life
7. Elimination of laser optical mode drift
8. Advanced laser optical resonator system
9. Upgraded RF power supply components and configuration
10. DC decoupled RF electrodes for safety and elimination of DC arcing
11. Quad-Dipole "hot" RF electrode configuration
12. "Die-Hard" RF power transistor system with integrated electronic protection



Features:

1. 20W & 40W OEM carbon dioxide laser source
2. Water or compressed air cooling standard
3. Enhanced RF stability and cold start-up performance
4. Advanced RF-pumped laser tube technology

5. 9.3-micron, 10.3-micron and/or 10.6-micron output wavelengths readily available
6. DC voltage arc-over immunity
7. Optical system isolated from coolant system (no coolant contamination of the optical system)
8. IP 65 enclosure rating
9. Optional external connector plate

	CO2-DP-OEM20	CO2-DP-OEM20
Electrical Engineering:		
Voltage input	72 VDC via user supplied source	
Current input	3.5A maximum	7.0A maximum
Laser enable signal	5.0 volts high impedance input via 50-ohm BNC	
Laser enable signal bandwidth	0 to 15 kHz	
Laser enable maximum turn-on delay	<12 microseconds	
Interlock connection	Supplied by user	
ESD tolerance (min)	15 kV static (to grounded laser chassis only)	
Optical Engineering:		
Laser power output	18W min, 20W nom. & 25W max. (wavelength dependent)	35W min, 40W nom. & 50W max. (wavelength dependent)
Laser wavelength	10.6, 10.3 or 9.3um	10.3 or 9.3um
Laser beam diameter/divergence	4.0/3.5 (mm/mrad) nominal	
Laser mode quality	>95% TEM ₀₀ electric field purity	
Laser rise/fall times (nominal)	150 μsec /180 μsec nominal	
Maximum duty cycle	100% (with water cooling)	
Maximum laser bore temperature	55 degrees C	
Maximum laser power droop w/temp.	20% of nominal at 55 degrees C	
Laser tube MBTF (projected)	80% of nominal laser power at 50,000 hours	
Mechanical Engineering:		
Dimensions	7.5 cm (3.0") enclosure OD x 54.5 cm (21.5") length	10.2 cm (4.0") enclosure OD x 61.0 cm (24.0") length
Weight	4.1 kg (9.1 lbs.)	7.2 kg (15.9 lbs.)
System Engineering:		
Interlock, fault and remote disable	Supplied by user	
Laser enable source signal	Supplied by user	
Input cooling specification	1) Compressed air option (<30% duty cycle only): 5°C to 35°C unfiltered at specified laser head inlet gas pressure Or 2) Water cooled option (all duty cycles): 15°C to 30°C at 1.0 to 3.0 liters/min	
Warranty:	12 months	

Application Notes:

9.3 Micron is the best wavelength for PET plastic bottles. It will not puncture small pinholes in the bottle like 10.6 will. There are some printed paper/cardboard applications that 9.3 works well also. (Coke, Pepsi, Bottled water, shampoo bottles, soap bottles)

10.3 micron is the best overall for printed cardboard or paper. Certain glass also works well with 10.3 micron lasers. (packaged food boxes like cereal, beer bottle labels, beer/soda outside boxes, wood, some glass)

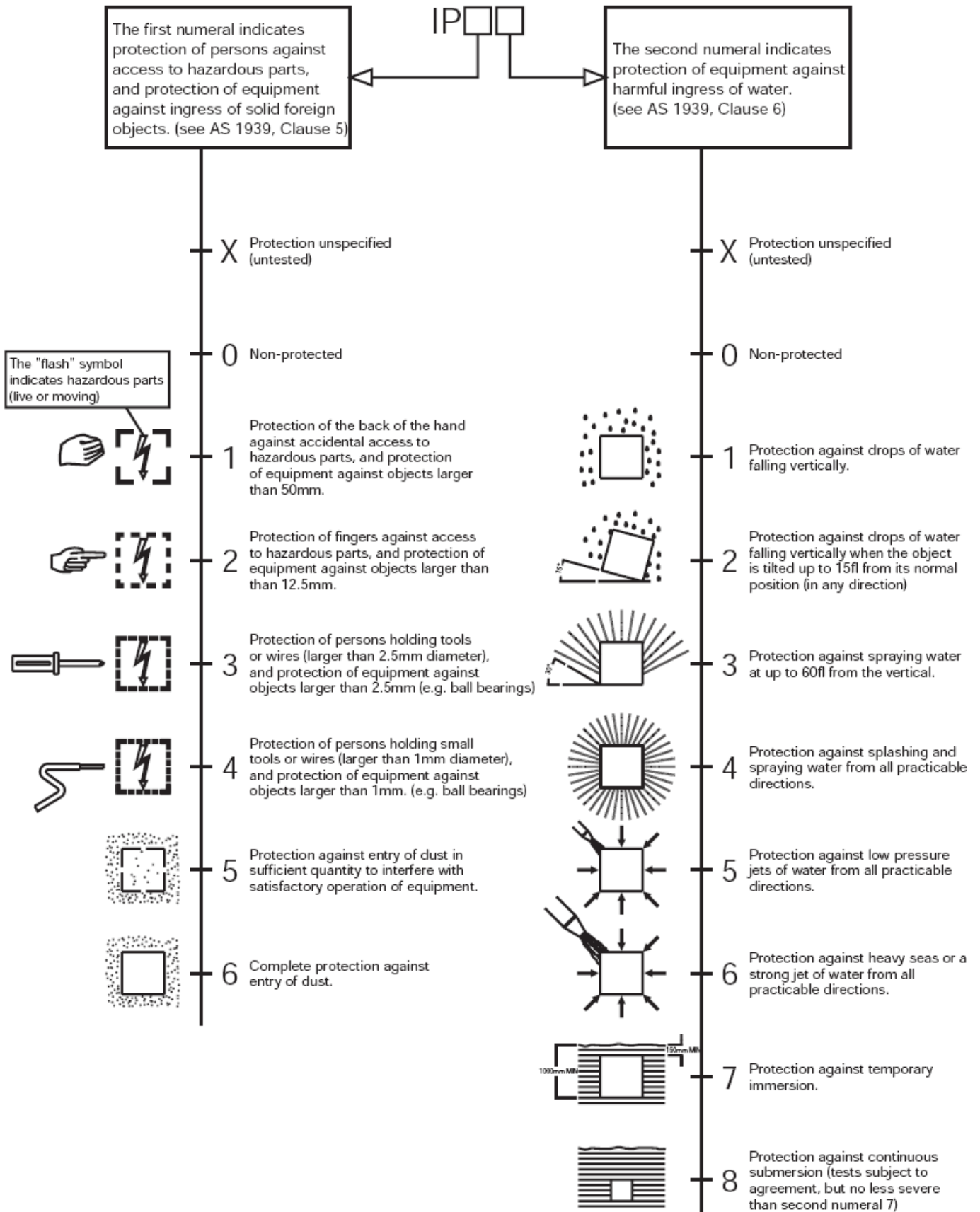
10.6 the easiest laser to manufacture, and thus the most used, while not the most effective. If you need raw power 10.6 is the proper wavelength. (glass, wood, circuit boards, specialty coated materials)

Also remember because of the Physics, the lower the wavelength, the lower the raw power. (9.3 will be nominally 10% lower than 10.3)

IP Ratings for both Dust and Water Ingress

Protection of persons and protection of equipment

Protection provided by enclosures for electrical equipment is indicated by the IP codes: two characteristic numbers.





Sintec Optronics Pte Ltd

10 Bukit Batok Crescent #07-02 The Spire Singapore 658079

Tel: +65 63167112 Fax: +65 63167113

ULR Series CW Air- and Water-Cooled RF-excited CO₂ Laser

- ▶ Choices - Comprehensive selection of air- and water-cooled CO₂ lasers with options to suit every need
 - OEM BASIC- Available in air-cooled and water-cooled configurations
 - OEM INTEGRATED - Available in air-cooled configuration with aluminum fan shroud - ideal for "bolt on" integration; no plumbing or chillers necessary
 - Class IV - Available in air-cooled or water-cooled configurations with key switch and shutter safety interlocks
- ▶ Easy Integration - New low profile mounting plate with quick release electrical connector can be mounted in any orientation
- ▶ Construction - All lasers are RF-excited with an internal tickle and built-in interlock and can be operated from CW to their maximum modulation frequency
- ▶ Innovations - New TTL temperature warning output guards against overheating; new fault indicator LED with pinout for remote diagnostics
- ▶ Options - A variety of options are available including visible pointing laser coaxial with the main beam, integrated turning mirror and reinforced thermal resistant front mounting plate
- ▶ Reliability - Superior engineering and innovative technology result in stable power output, reliable service and the lowest recharge cost in the industry
- ▶ Customer Service - The most responsive, customer-oriented technical support in the industry
- ▶ Warranty – 12 months on materials, workmanship and rated output power
- ▶ Patents – we have devoted many years of research and development into laser technology which has resulted in numerous innovations and a multitude of U.S. patents with additional patents pending



Model	ULR10-O-IA-x ULR10-O-BA-x	ULR25-O-IA-x	ULR30-O-IA-x	ULR40-O-IA-x
Rated power**	10W	25W	30W	40W
Wavelength	10.6um	10.6um	10.6um	10.6um
Power stability	±10%	±5%	±5%	±5%
M ²	1.4±0.2	1.2±0.2	1.2±0.2	1.2±0.2
Beam size(near field)	4±1mm	4±1mm	4±1mm	4±1mm
Beam divergence(full angle)	5±1mrad	5±1mrad	5±1mrad	5±1mrad
Polarization	Linear	Linear	Linear	Linear
Pointing stability	200µrad	200µrad	200µrad	200µrad
Optical pulse rise or fall time	120±40µs	120±40µs	120±40µs	120±40µs
Optical Delay Time	38±10us	38±10us	38±10us	38±10us
Optical modulation	100% up to 5kHz	100% up to 5kHz	100% up to 5kHz	100% up to 5kHz
Modulation signal type	TTL compatible	TTL compatible	TTL compatible	TTL compatible
Cooling	Air	Air built in)	Air (built in)	Air (built in)
Weight (Basic AC)	3.3kg			
Weight (Basic WC)				
Weight (Integrated AC)	3.9kg	9.0kg	9.0kg	10.4kg
Weight (Integrated WC)				
Dimension (LxWxH, Basic AC)	343x71x98mm			
Dimension (LxWxH, Integrated AC)	414x89x114mm	540x133x140mm	540x133x140mm	629x133x140mm
Ambient temperature***	10-35°C	10-35°C	10-35°C	10-35°C
Relative humidity	<90%	<90%	<90%	<90%
DC input voltage	48VDC	48VDC	48VDC	48VDC
RMS current (CW)	5A	10A	10A	12A
Recommended DC power supply	DCPS-200-48	DCPS-600-48	DCPS-600-48	DCPS-600-48

* Polarisation is linear (Perpendicular to the laser base plate).

Model	ULR50-O-IA-x ULR50-O-IW-x	ULR60-O-IA-x ULR60-O-IW-x	ULR-75-O-IA-x ULR-O-IW-x	ULCR100-O-IA-x ULRC100-O-IW-x
Rated power**	50W	60W	75W	100W
Wavelength	10.6um	10.6um	10.6um	10.6um
Power stability	±5%	±5%	±5%	±5%
M ²	1.2±0.2	1.2±0.2	1.2±0.2	1.2±0.2
Beam size(near field)	4±1mm	4±1mm	4±1mm	4±1mm
Beam divergence(full angle)	5±1mrad	5±1mrad	5±1mrad	5±1mrad
Polarization	Linear	Linear	Lear	Random
Pointing stability	200μrad	200μrad	200μrad	200μrad
Optical pulse rise or fall time	120±40μS	120±40μS	120±40μS	120±40μS
Optical Delay Time	38±10us	38±10us	38±10us	38±10us
Optical modulation	100% up to 5kHz	100% up to 5kHz	100% up to 5kHz	100% up to 5kHz
Modulation signal type	TTL compatible	TTL compatible	TTL compatible	TTL compatible
Cooling	Air/water (built in)	Air/water (built in)	Air/water (built in)	Air/water (built in)
Weight (Integrated AC)	11.8kg	11.8kg	14kg	36.7kg
Weight (integrated WC)	11.8kg	11.8kg	14kgkg	36.7kg
Dimension (LxWxH, Integrated AC)	705x133x140mm	705x133x140mm	864x133x138mm	865x250x192mm
Dimension (LxWxH, Integrated WC)	705x133x140mm	705x133x140mm	864x133x138mm	865x250x192mm
Ambient temperature***	10-35°C	10-35°C	10-35°C	10-35°C
Relative humidity	<90%	<90%	<90%	<90%
DC input voltage	48VDC	48VDC	48VDC	48VDC
RMS current (CW)	18A	18A	20A	36A
Recommended DC power supply	DCPS-800-48	DCPS-800-48	DCPS-1000-48	DCPS-2000-48
Pack Dimension				1041x508x508mm
Pack weight (gross weight)				66kg

Model	ULCR120-O-IA-x ULRC120-O-IW-x			
Rated power**	120W			
Wavelength	10.6um			
Power stability	±5%			
M ²	1.2±0.2			
Beam size(near field)	4±1mm			
Beam divergence(full angle)	5±1mrad			
Polarization	Random			
Pointing stability	200μrad			
Optical pulse rise or fall time	120±40μS			
Optical Delay Time	38±10us			
Optical modulation	100% up to 5kHz			
Modulation signal type	TTL compatible			
Cooling	Air/water (built in)			
Weight (Integrated AC)	36.7kg			
Weight (integrated WC)	36.7kg			
Dimension (LxWxH, integrated AC)	865x250x192mm			
Dimension (LxWxH, integrated WC)	865x250x192mm			
Ambient temperature***	10-35°C			
Relative humidity	<90%			
DC input voltage	48VDC			
RMS current (CW)	36A			
Recommended DC power supply	DCPS-2000-48			

* The above specifications are subject to change without notice.

** Output power is guaranteed to exceed this level for a period of 15 months from the date of purchase, regardless of use.

*** At temperatures below 50°F[10°C] operation may be intermittent and there is a potential for damage to the power supply optics.

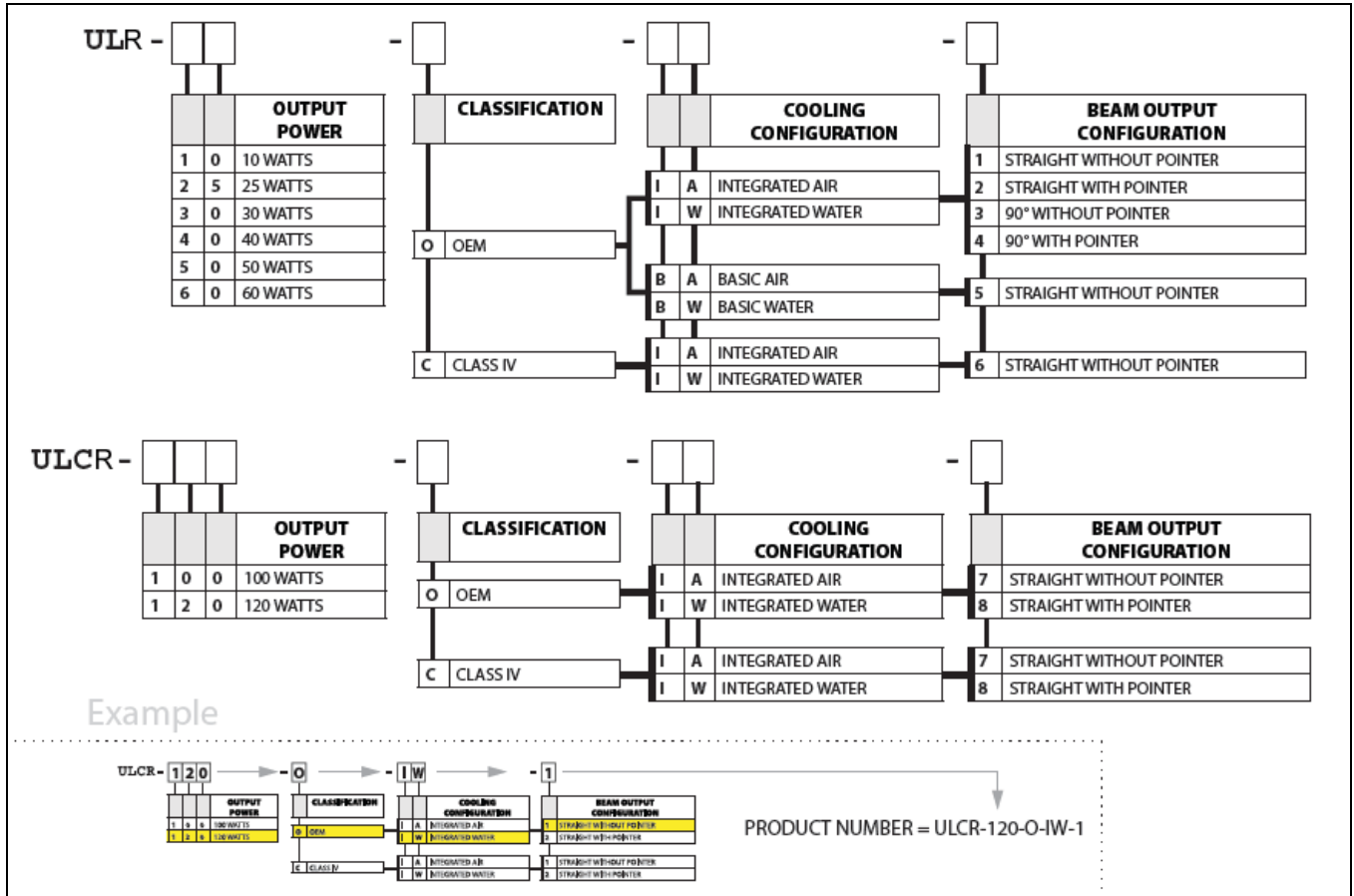
There are 3 types of configurations of each laser: OEM BASIC, OEM INTEGRATED and Class IV.

OEM BASIC: This configuration is a basic laser tube and RF power supply. There is no cover, no fans. This is for the OEM to integrate into their equipment and provide the proper cooling and protection. Air cooled or water cooled must be specified at time of ordering.

OEM INTEGRATED: This is the configuration that we have been offering for a number of years. The laser tube and RF power supply are covered with a shroud and have the fans included.

Class IV: This configuration has a cover, manual shutter, keyed lockout switch and fans or water connections, depending on type. Air cooled or water cooled must be specified at the time of ordering.

For used Universal lasers, we provide fully-refurbishing services at very low prices. The refurbishing includes replacing optics, RF power supply and refilling gas. All the jobs will be finished within 7 days.

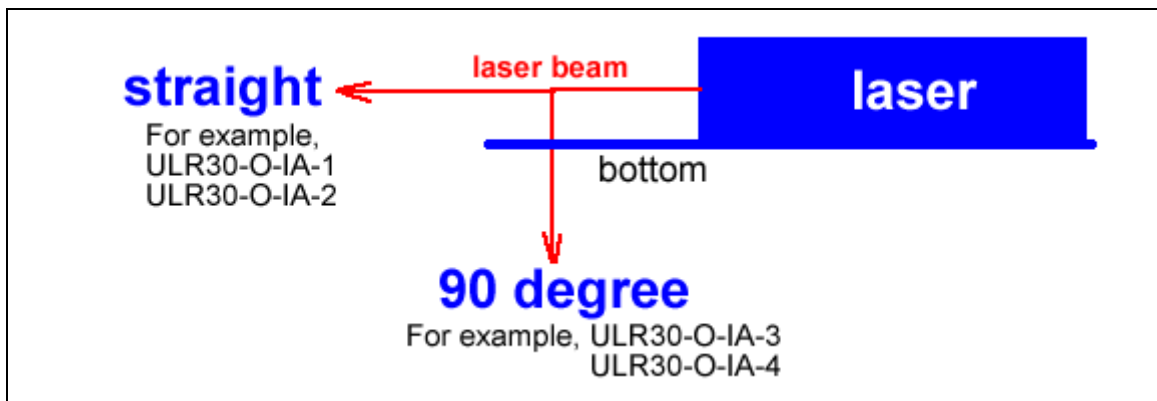


Main Difference between UL Series and ULR Series Lasers

The bottom and connector are swallow-tailed and 12PIN respectively but the bottom and connector are flat and 15PIN respectively. There is no difference on performance.

Beam Output Configuration:

With the 90 degree output the beam goes through the base plate. We cut a hole in the bottom and mount it to the face of the laser, turn it 90 degree down through the hole. We can not offer it in any other direction but through the bottom of the base plate. To offer this option on OEM lasers the beam output number is (#3) for 90 degree without pointer, (#4) for the 90 degree with pointer. This option is not offered on 10W Integrated air cooled due to the small base plate and no room to mount the out put.





Air- and Water-cooled RF-excited CO2 Lasers

- 10, 30, 50, 100, 200 & 400w
- Compact, fully integrated design
- Low cost/high power source



CO2-SR-48 series



CO2-SR-V30



CO2-SR-F series

Model	CO2-SR-48-1	CO2-SR-V30	CO2-SR-48-5W
Output power (W)	10W	30W	50W
Mode quality	TEM ₀₀ 95%, M ² <1.1	TEM ₀₀ 95%, M ² <1.1	TEM ₀₀ 95%, M ² <1.1
Ellipticity	<1.2	<1.2	<1.2
Rise time (usec)	150	100	150
Beam diameter (mm)	3.5	2.0	3.5
Beam divergence (mrad)	4	7	4
Wavelength (um)	10.57-10.63	10.57-10.63	10.57-10.63
Power stability	±10%	±3%	±5%
Polarization	Linear (V)	Linear (H)	Random
Cooling	Air	Air	water
Head load (W)	300	550	800
Flow rate, air	250CFMx2	140CFMx2	
Flow rate, water (18-22°C)			1.5GPM
Input voltage/current (VDC/A)	30/7	30/18	30/28
Dimension (mm)	429x71x107	428x117x146	886x135x114
Weight, laser head (kg)	4.1	8.2	20
Pack (cm)	63x23x23		
Pack weight (kg)	5.92		

Model	CO2-SR-F100	CO2-SR-F201	CO2-SR-F400
Output power (W)	100W	200W	400W
Mode quality	TEM ₀₀ 95%, M ² <1.1	TEM ₀₀ 95%, M ² <1.1	TEM ₀₀ 95%, M ² <1.1
Ellipticity	<1.2	<1.1	<1.1
Rise time (usec)	100	100	100
Beam diameter (mm)	3.5	3.5	3.5
Beam divergence (mrad)	4	4	4
Wavelength (um)	10.2-10.7	10.2-10.7	10.2-10.7
Power stability	±6%	±5%	±5%
Polarization	Linear (H)	Linear (H)	Random
Cooling	water	water	water
Head load (W)	2000	4000	8000
Flow rate, air			
Flow rate, water (18-22°C)	2.0GPM	3.0GPM	6.0GPM
Input voltage/current (VDC/A)	96/20	96/40	96/80
Dimension (mm)	638x160x142	1232x216x152	1384x387x178
Weight, laser head (kg)	17.2	36.3	72.6



Air-Cooled RF-Excited OEM Industrial CO₂Laser

Features

- Ultra-compact
- Fast rise/ fall time
- Outstanding beam quality
- All-metal seals for long life
- Excellent power stability
- Wide operating power range
- Single, integrated package
- CW or modulated up to 25 kHz
- Cost-saving and simple, direct-air cooling
- Linear polarization
- Low-cost OEM configuration



Model	CO ₂ -CH-Diamond-C-20A	CO ₂ -CH-Diamond-C-30A
Wavelength (μm)	10.55to10.63	10.55 to 10.63
Optical Output Power ¹ (w)	20	30
Power Stability ² (%)	±8	±5
Mode Quality(M ²)	<1.2	<1.2
Beam Size(mm)	1.8±0.2	1.8 ±0.2
Divergence (mrad, fullangle)	7.5±0.5	7.5 ±0.5
Polarization	>100 to1 (fixed linear, parallel to width dimension)	>100 to 1 (fixed linear, parallel to width dimension)
Operating Frequency & Duty Cycle	0 to 25kHz, 0 to100% DC	0 to 25 kHz,0 to 100% DC
Weight	6.6kg (14.5lbs.)	6.6 kg (14.5 lbs.)
Dimensions (LxWxH)	357x92.5x154.5mm (14.1x3.64x6.08in.)	357 x 92.5 x 154.5 mm (14.1 x 3.64 x 6.08 in.)
Input Power	48 VDC±2% regulation, <±1% P-P noise / ripple, 12A max.avg., with18A peak for 1 msec. minimum, measured at input terminals	48VDC ±2% regulation, <±1% P-P noise/ripple, 12A max. vg., with 18A peak for 1 msec. minimum, measured at input terminals
Heat Dissipation (W)	<575	<575
Maximum Case Temperature	<60°C (140°F)	<60°C (140°F)
Operating Temperature	5 to 40°C (41 to 113°F)	5 to 40°C (41 to 113°F)
Operating Altitude	<2000m(6500ft.)	<2000 m (6500 ft.)
Operating Humidity	Non-condensing	Non-condensing
Shipping /Storage Environment	-10 to 60°C (14 to140°F), non-condensing	-10 to 60°C (14 to 140°F),non-condensing

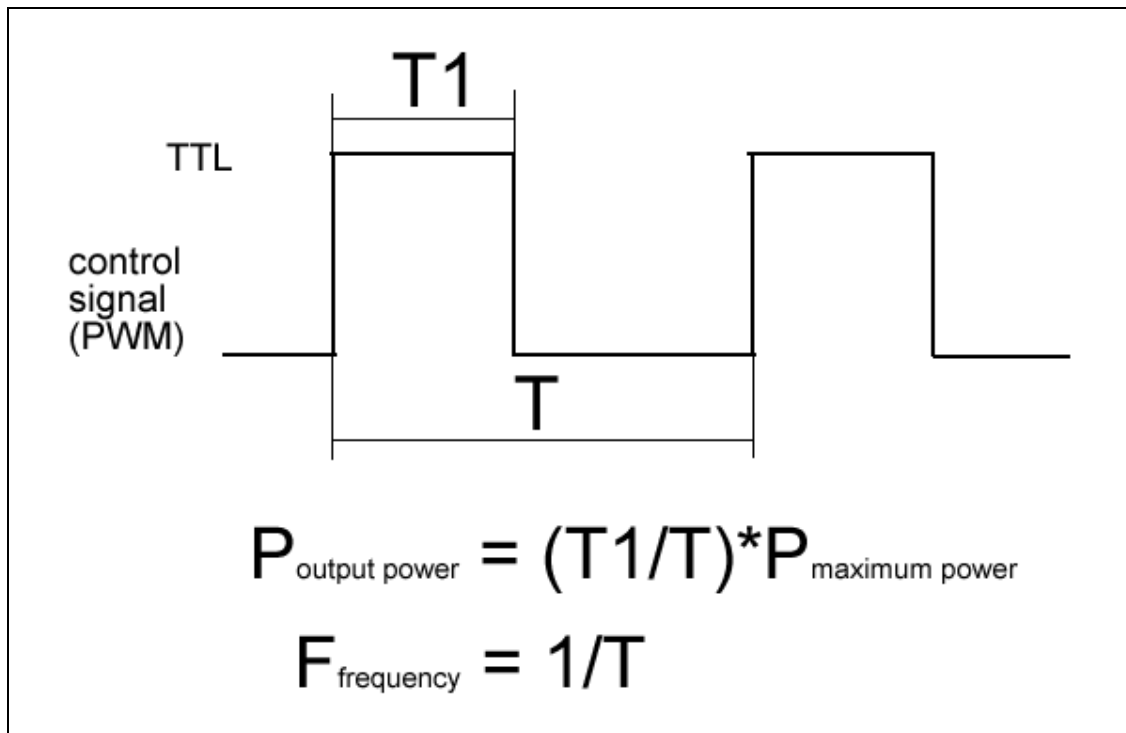
- Power measured at 25°C and derated by 1%/C for higher laser head temperatures.
- Power stability based on $\pm (P_{max} - P_{min}) / (2 * P_{max})$ average power measurement at constant duty cycle after 10-minute warm up at operating condition.



CO2 Laser Controller

1. Principle of adjusting laser power

A TTL compatible signal must be provided to the laser of the power and signal connector to drive the laser. Output power can be controlled from 0 to 100% (CW Mode) by pulse width modulation of the input signal. The output laser power is proportional to the duty of the PWM signal.



In our controllers, the frequency is fixed at 5kHz (0.2ms). Adjusting the output laser power means adjusting pulse width T1.

2. STCB series integrated laser controller

CO2 laser controller provides DC power supply of CO2 laser, control I/Os and laser power adjustment. It is integrated with a 19" control panel. Its main specifications are

- Model: STCB28-xxxx (xxxx: CO2 laser model such as ULR10, ULR50 etc)
- Provide DC power supply according to the lasers (ULR10, ULR30, ...) (optional)
- Laser power adjustable from 0 to 99% of the maximum laser power
- Two control methods available: manual and auto
- Under the manual method, a potentiometer on the panel is used to adjust the laser power and a button is used to switch on/off laser
- Under the auto method, external signal TTL is used to adjust laser power, laser pulse repetition rate and laser beam on/off
- Dimension (LxWxH): 500x302x100mm



3. STCBV series compact laser controller

This compact laser power controller is used to digitally modulate the RF amplifiers that excite the plasma within the resonating chamber of the laser. This is accomplished by using a clock frequency square wave of 5kHz and varying the duty cycle of that square wave from 0 to 99%.



The main specifications are:

- Power input: +5VDC
- Signal output: 0-99% duty cycle PWM 5kHz
- Gate input (default logic low): TTL logic (High +5VDC, Low 0VDC)
- Clock frequency: 5kHz +/-5% accuracy
- Enable input (default logic low): TTL logic (High +5VDC, Low 0VDC)
- Two control methods available: manual and auto
- Dimension (LxWxH): 6.26x4.125x1.5inch (159x105x38mm)
- Weight: 12.3 ounces (0.349kg)