

# II-VI INFRARED

www.iiviinfrared.com

## CO<sub>2</sub> LASER NOZZLES AND ACCESSORIES



CINCINNATI®



TOLL FREE 888.558.1504 (USA and Canada)  
TEL. 724.352.1504 FAX. 724.352.4980

VOL. JA14



## About II-VI INFRARED

In 1971, II-VI Incorporated began by exclusively producing the highest-quality cadmium telluride (CdTe) material available for manufacturing high-power industrial CO<sub>2</sub> laser optics. Today, we have diversified into producing zinc selenide (ZnSe) material, as well as into numerous business units including laser tools for materials processing (HIGHYAG); near-infrared optics, YAG components, and telecommunications components (VLOC); fiber optics, projection and display optics, DPSS laser, crystal materials, and other photonics products (Photop); defense and aerospace optics (Exotic Electro-Optics); tellurium and selenium products (PRM); thermoelectric cooling devices (Marlow Industries); silicon carbide (II-VI WBG); and advanced materials development (II-VI AMDC). Given this diversity of II-VI Incorporated's business units, we have thus christened our original IR materials and optics business unit II-VI Infrared.

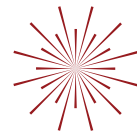
As II-VI Incorporated continues to grow, II-VI Infrared focuses on the company's original, industry-leading products: infrared and CO<sub>2</sub> laser optics and materials. And thanks to decades of innovation in zinc selenide (ZnSe) and zinc sulfide (ZnS) materials processing, thin-film coating, precision diamond turning, and finished optics fabrication, II-VI Infrared is the world leader in CO<sub>2</sub> laser optics, delivering an unbeatable combination of innovation, quality, and expertise. II-VI Infrared also delivers the largest vertically integrated CO<sub>2</sub> laser optics manufacturing process -- from raw materials to finished coated products -- in the world.

An optics foundry to CO<sub>2</sub> laser original equipment manufacturers (OEMs) the world over, consistently building optics to spec with consistent performance and quality, II-VI Infrared's products range from replacement CO<sub>2</sub> laser optics and nozzles to lenses, partial reflectors, windows, beamsplitters, mirrors, beam expanders, reflective phase retarders, scanning-laser system optics, diamond-turned custom optics, IR optical materials (ZnSe, ZnS, CVD Diamond), and more. Our products and reputation make us the number-one supplier to OEMs of CO<sub>2</sub> laser systems worldwide, while our capabilities are without rival in the industry.

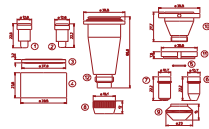
Our diamond-turning facility is among the largest and most advanced in the world, offering services such as flycutting and multiple-axis turning, as well as fast and slow tool servos for custom optics. Single-point diamond-turning is used in finishing transmissive optics and mirrors in a variety of metals and IR materials.

Major investments in computer design programs, thin film evaporation equipment, clean rooms, and QA testing facilities enable us to offer a broad range of IR thin-film coatings. II-VI Infrared is known for designing and producing consistently low-absorption coatings for high-power CO<sub>2</sub> laser optics. Additionally, our talented and experienced engineering team using optical design software and CAD systems, designs and builds standard and custom optics as well as specialized mounts, components, and electro-optic assemblies.

Our quality assurance program includes comprehensive testing, documentation, and statistical analysis to ensure that each optic and component performs to customer requirements.

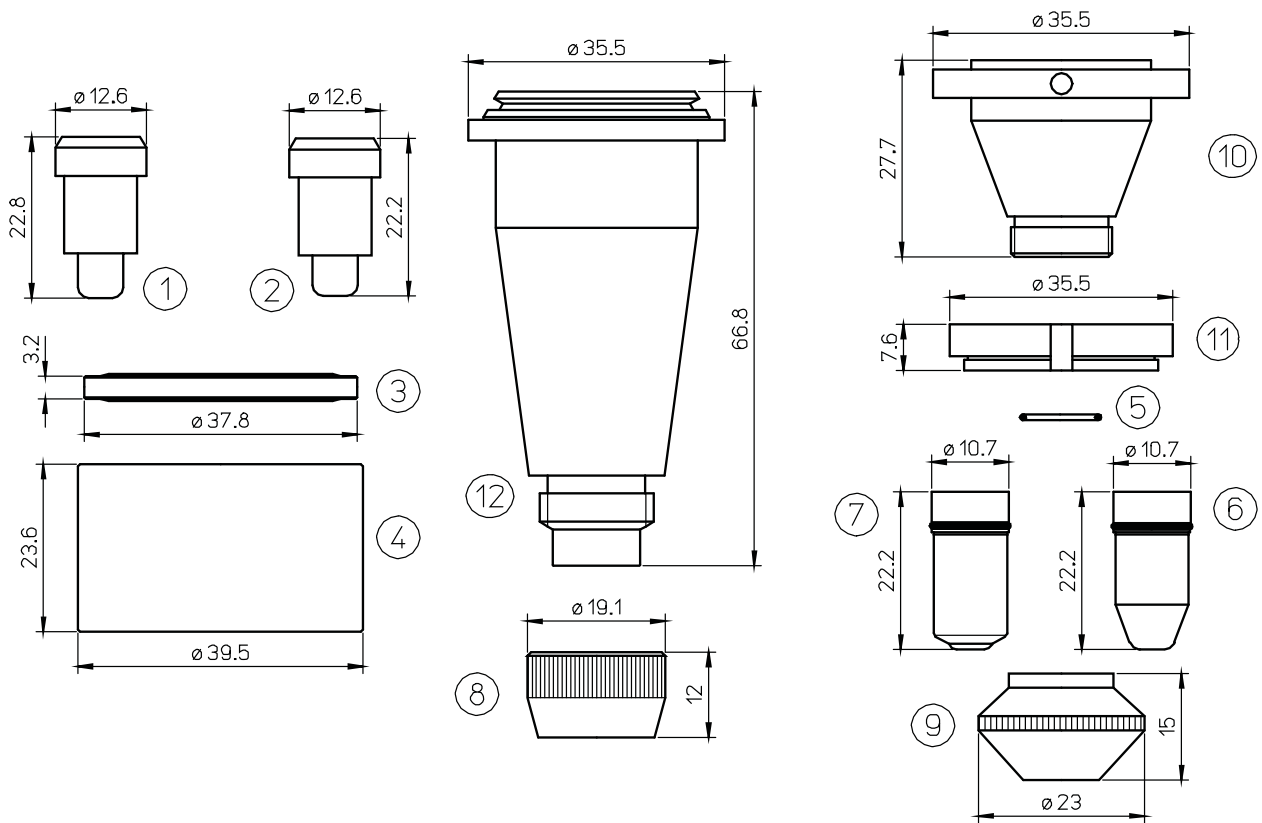


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POS	II-VI P/N	OEM P/N	DESCRIPTION
1	L220	908090	CINCINNATI® ELONGATED NOZZLE Ø 1.5
2	L221	907469	CINCINNATI® NOZZLE Ø 1.0
	L222	907470	CINCINNATI® NOZZLE Ø 1.5
	L223	920006	CINCINNATI® NOZZLE Ø 2.0
3	AL92		CINCINNATI® GASKET TEFLON® WITH SPRING
4	AL71/S	907677	CINCINNATI® NOZZLE HOLDER
	AL71	907472	CINCINNATI® NOZZLE HOLDER WITH GASKET
5	AL95	909680	CINCINNATI® O-RING FOR NOZZLE - 10PC
6	L1528		CINCINNATI® NOZZLE Ø 0.8 W/O'RING
	L712	924635	CINCINNATI® NOZZLE Ø 1.0 W/O'RING
	L961		CINCINNATI® NOZZLE Ø 1.2 W/O'RING
	L962		CINCINNATI® NOZZLE Ø 1.3 W/O'RING
	L963		CINCINNATI® NOZZLE Ø 1.4 W/O'RING
	L224	909660	CINCINNATI® NOZZLE Ø 1.5 W/O'RING
	L225	910315	CINCINNATI® NOZZLE Ø 2.0 W/O'RING
	L713	924638	CINCINNATI® NOZZLE Ø 2.5 W/O'RING
	L714	924634	CINCINNATI® NOZZLE Ø 3.0 W/O'RING
	L1017	924635	CINCINNATI® NOZZLE Ø 3.15 W/O'RING
	L433	923013	CINCINNATI® SHOWER NOZZLE Ø 1.0 W/O'RING
	L434	923014	CINCINNATI® SHOWER NOZZLE Ø 1.5 W/O'RING
	L435		CINCINNATI® SHOWER NOZZLE Ø 2.0 W/O'RING
7	L869	924636	CINCINNATI® NOZZLE Ø 1.5 W/O'RING
	L870	924637	CINCINNATI® NOZZLE Ø 2.0 W/O'RING
8	AL48	909659	CINCINNATI® TIP LOCK NUT
9	AL135	963021	CINCINNATI® TIP RETAINER NUT
10	AL137	923258	CINCINNATI® TIP RETAINER
11	AL139	923259	CINCINNATI® INSULATOR RING
12	AL183	909658	CINCINNATI® TIP RETAINER EXTENTION

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FOR ALL OF YOUR REPLACEMENT OPTIC NEEDS

CO<sub>2</sub> LASER OPTICS/CONSUMABLE PRODUCTS  
 CO<sub>2</sub> LASER CONSUMABLES  
 NOZZLES & ACCESSORIES  
 TRUMPF CUT LENSES  
 MP-5 ULTRA-LOW ABSORPTION LENSES  
 ASPHERIC LENSES  
 MENISCUS LENSES  
 PLANO-CONVEX LENSES  
 CYLINDER LENSES  
 MIRRORS  
 SCANNING LASER SYSTEM OPTICS  
 BEAM COMBINERS  
 BEAM EXPANDERS  
 BEAMSPLITTERS  
 COLLIMATING OPTICS  
 DIAMOND-TURNED SPECIALTY OPTICS  
 REFLECTIVE PHASE RETARDERS  
 PRISMS & RHOMBS  
 MODULATORS  
 WAVEPLATES  
 THIN-FILM POLARIZERS  
 POLARIZER-ANALYZER-ATTENUATOR

RESONATOR OPTICS  
 OUTPUT COUPLERS  
 REAR MIRRORS  
 BAND-SELECTIVE OPTICS  
 AR-COATED WINDOWS  
 BREWSTER WINDOWS  
 PROTECTIVE WINDOWS  
 LENS STRESS ANALYZER(LSA)  
 1 MICRON OPTICS  
 1 MICRON OPTICAL COMPONENTS  
 1 MICRON DEBRIS SHIELDS  
 1 MICRON HPDDL BEAM INTEGRATORS  
 1 MICRON OPTICAL COATINGS  
 1 MICRON MATERIALS  
 OPTICAL MATERIALS  
 ZINC SELENIDE (ZNSE)  
 ZINC SULFIDE (ZNS)  
 ZINC SULFIDE MULTISPECTRAL (ZNS MS)  
 GERMANIUM (GE)  
 GALLIUM ARSENIDE (GAAS)  
 MATERIAL BLANKS  
 CVD DIAMOND SUBSTRATES  
 IR THERMAL IMAGING OPTICS



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# HOW TO ORDER



If you are unsure of what nozzles you need contact our trained staff for assistance. Customers in the USA and Canada can call toll-free: 888.558.1504. Customers outside of the USA and Canada can call: 724.352.1504. Customers in Europe and Asia can also contact a II-VI Subsidiary Office (see back cover for details).

\* Catalog revised January 2014 and copyrighted by II-VI Incorporated.

# TERMS AND CONDITIONS OF SALE

All orders received by II-VI Incorporated ("II-VI") are expressly conditioned upon the following conditions of sale:

## 1) Acceptance

Any additional or different terms set forth in any purchase order or other communication from Buyer are objected to and not binding upon II-VI unless and until accepted in writing by an authorized representative of II-VI.

## 2) Standard Warranty

II-VI warrants to the Buyer of each product of II-VI's own manufacture ("Product") that each Product will be free from defects in materials and workmanship subject to the following conditions:

The obligations of II-VI under this Standard Warranty shall be limited to either, at the option of II-VI: (1) the replacement or repair of any Product upon the shipment of such Product, freight prepaid by Buyer to the II-VI factory; or (2) the provision to Buyer of a credit against future purchases in an amount equal to the purchase price of the defective Product.

IN NO EVENT WILL II-VI BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF BUYER. THE FOREGOING REMEDIES ARE THE SOLE AND EXCLUSIVE REMEDY OF BUYER FOR ANY BREACH OF WARRANTY UNDER THIS CONTRACT.

All claims under this Standard Warranty must be made within ONE (1) YEAR after the date on which the Product was delivered to Buyer. In the case of a replacement or repair of a Product, Buyer shall only ship a defective Product to II-VI after an authorized representative of II-VI has provided a Return Authorization (RA) number for such warranty claim. Returns will be subject to a restocking fee.

With respect to such returns, Buyer is solely responsible for properly packaging any Product to be returned to II-VI under this Standard Warranty. Products must be packaged in their original manufacturer's packaging or equivalent. Products must be packaged in separate shipping containers with Return Authorization (RA) numbers clearly marked on the outside of the shipping containers. If there are questions regarding proper packaging and shipping, contact II-VI for guidelines. II-VI will not be responsible for replacing or repairing any Product damaged while in transit to II-VI due to faulty or deficient packaging.

This Standard Warranty shall be void and shall not apply with respect to any Product which, upon inspection by II-VI, shows evidence of damage as a result of abuse, misuse, mishandling, accidental damage, alteration, negligent handling, or improper installation or application, or as a result of alteration or other causes beyond the control of II-VI.

This Standard Warranty shall not apply to goods or parts included in or supplied with Products; such goods or parts carry only such warranties, if any, as are provided by the manufacturers of such goods or parts, which warranties may be more restrictive than the Standard Warranty provided by II-VI.

With respect to any previously-purchased Product, II-VI shall have no obligation to install updates or upgrades to any components in such Product, even if the exclusion of such updates or upgrades of such components renders such Product obsolete when compared to a new Product of a substantially similar type.

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN. THIS WARRANTY VOIDED AND EXCLUDES ANY AND ALL OTHER WARRANTIES OR REPRESENTATIONS, WHETHER EXPRESS OR IMPLIED OR ARISING UNDER ANY LAW, RELATING TO THE GOODS, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR ANY PARTICULAR PURPOSES.

NO PERSON, FIRM, OR CORPORATION IS AUTHORIZED TO ASSUME ON BEHALF OF II-VI ANY ADDITIONAL OBLIGATION OR LIABILITY NOT EXPRESSLY PROVIDED HEREIN, EXCEPT IN A WRITING DULY EXECUTED BY AN OFFICER OF II-VI.

## 3) Limitation of Liability

In no event shall II-VI be liable for any incidental or consequential damages. The liability of II-VI on any claim of any kind shall in no event exceed the price of the Product which gives rise to the claim. Except as to title, all such liability shall terminate upon expiration of the warranty period of the Product.

The invalidity of any of the previous paragraphs shall not affect the remainder of this paragraph or any other paragraph in this section.

## 4) Patent Infringement

Buyer shall hold II-VI harmless against any expense or loss resulting from infringement of patents or trademarks arising from compliance with Buyer's designs or specifications.

## 5) Delivery and Title

Delivery dates are approximate and are based upon prompt receipt of all necessary information from Buyer. Under no circumstances does II-VI guarantee date of shipment.

Unless otherwise specified by II-VI, shipment will be made and title will pass F.O.B. point of shipment. II-VI shall ship Products as it deems appropriate unless instructed otherwise in writing by Buyer.

## 6) Risk of Loss

Risk of loss or damage shall pass to Buyer upon shipment. Loss or damage that occurs during shipping by a carrier selected by Buyer is Buyer's responsibility.

## 7) Uncontrollable Delays

II-VI shall not be liable for delivery delays due to causes beyond its reasonable control including, but not limited to, acts of God, acts of Buyer, acts of military authority, governmental priorities, labor strikes, and transportation delays.

## 8) Financial Conditions

If II-VI determines in good faith that the financial condition of Buyer at any time does not justify the continuation of production or shipment on the terms of payment originally specified, II-VI may require full or partial payment in advance. In the event of Buyer bankruptcy or insolvency, II-VI shall be entitled to cancel any outstanding order and shall receive reimbursement for its cancellation charges.

## 9) Payment Terms

Unless terms are specifically set forth on the Order Acknowledgement, Buyer shall pay at such time and such terms as specified in II-VI's original invoice. Any quotations shall be valid for the period stated on the quotation.

## 10) Cancellation

Buyer may not cancel its order after shipment has been made. Buyer may cancel its order prior to shipment only upon written notice and consent of II-VI. If II-VI consents to any such cancellation, Buyer may be required to pay cancellation charges which include lost profits and all expenses incurred in connection with the cancelled order.

## 11) Jurisdiction

The validity, performance, and all matters relating to the interpretation and effect of this agreement shall be governed by the laws of the Commonwealth of Pennsylvania.

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## WORLDWIDE SALES OFFICES

To place an order, contact a II-VI sales representative at any of the following locations, or visit [www.iiviiinfrared.com/contact](http://www.iiviiinfrared.com/contact) for our most complete and up-to-date contact information.

**II-VI INFRARED**

375 SAXONBURG BLVD  
SAXONBURG, PA 16056  
UNITED STATES  
888-558-1504 (Toll free in USA)  
T. 724-352-1504  
F. 724-352-4980  
[info@iiviiinfrared.com](mailto:info@iiviiinfrared.com)

**II-VI WEST**

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USA  
800.262.5273 (Toll free in USA)  
T. 951.926.7640  
F. 951.926.1984  
[info@iiviiinfrared.com](mailto:info@iiviiinfrared.com)

**II-VI BENELUX N.V.**

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UNITED KINGDOM  
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CHIBA 261-7126  
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F. 81 43297 3003  
[center@ii-vi.co.jp](mailto:center@ii-vi.co.jp)

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F. 65 6481 8702  
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F. 86 512 6767 1207  
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