

Wholesale Optical Lens Manufacturer in China: Explore Our 3D VR Lab (Trusted in Mexico & Saudi Arabia)

ZHENJIANG, CHINA, August 8, 2026 /EINPresswire.com/ -- For global optical distributors and prescription laboratories, securing a [Wholesale Optical Lens Manufacturer](#) requires more than just standard product catalogs—it demands verified manufacturing capacity, precise Rx customization, and complete supply chain transparency. To serve fast-growing markets like Mexico and Saudi Arabia, [CONVOX](#) delivers high-volume standard stock lenses alongside specialized digital freeform prescription solutions, backed by ready inventory and responsive OEM/ODM support.

For international distributors, understanding the manufacturing process and quality control system is an important part of supplier evaluation. Addressing this requirement, CONVOX has developed an immersive 3D VR laboratory platform, allowing global clients to virtually inspect their facility, follow the exact trajectory of lens manufacturing, and examine the integrated technologies that safeguard optical integrity.

Lens Category	Refractive Index Options	Key Functional Availability	Design Geometry
Standard & Mid-Index Resin	1.56, 1.61	Blue Block, PhotoChromic, Anti-glare	Spherical, Aspherical
High-Index & Ultra-Thin	1.67, 1.71, 1.74	Advanced Tinting, High-Diopter RX	Aspherical, Double Aspherical
Impact-Resistant Polymer	Polycarbonate (PC) 1.59	Sports Eyewear, Rimless Frames	High-Impact Resistance
Entry-Level Optical	CR-39	Solid Tinting, Basic Rx	Standard Spherical Base
Specialty Functionals	Across Multiple Indices	Progressive, Photochromic, Blue Block, Anti-fog	Freeform Surface Optimized



Established in 2007 as a strategic joint venture supported by Korean production know-how and coating standards, the enterprise integrates Korean production standards with optimized Chinese industrial cost-management. Backed by over 15 years of manufacturing experience, the facility merges engineering precision with scalable bulk supply.

This integrated technical framework enables a consistent, high-capacity output of high-quality resin lenses. Every batch undergoes a comprehensive 5-procedure quality inspection framework establishing a dependable baseline for bulk supply. This large-scale output is supported by a centralized, modern storage system and an extensive inventory of ready stock, ensuring rapid fulfillment and shortened transit timelines for overseas distributors in Mexico and Saudi Arabia.

II. Core Optical Lens Product Matrix

To simplify global procurement, the factory provides a comprehensive range of eyewear lens materials and structural designs. Below is the technical breakdown of the available indices and functions visible within our production ecosystem: (PIC)

III. Virtual Exploration of the Specialized Production Segments

The 3D VR laboratory experience provides international partners with a transparent, unfiltered view of the synchronized production segments within the facility. The virtual tour maps out a distinct operational workflow, tracking the raw material transformation from a liquid monomer state into fully packaged, prescription-ready optics.

Material Preparation and Monomer Casting Section

The process initializes in the monomer preparation zone, where raw resin materials are stored under strict climate-controlled parameters to prevent thermal degradation or particulate contamination. Operators introduce precise formulations of liquid monomers, which are systematically filtered and degassed to eliminate microscopic air pockets. This prepared fluid is then injected into precision-engineered glass molds, which are tightly sealed with specialized flexible gaskets to establish the exact physical geometry and base curve of the initial lens blank.

Thermal Curing and Polymerization Line

Once cast, the mold assemblies transition into the automated curing ovens. The polymerization phase follows a highly technical, multi-hour thermal cycle where temperatures are progressively elevated and stabilized according to strict chemical cure profiles. This controlled heating process converts the liquid monomer into a hardened, stable resin matrix. Maintaining exact thermal gradients across this pipeline prevents the development of internal material stress, safeguarding the structural uniformity and refractive consistency of the lens material.

Automated Demolding and Initial Lens Preparation

Following the completion of the curing cycle, the assemblies proceed to the automated demolding segment. Mechanical separation systems isolate the solidified resin lenses from their glass molds without introducing surface abrasions or structural micro-fractures. The demolded lenses are transferred to an ultrasonic cleaning line where automated wash cycles utilize multi-

stage deionized water and specialized surfactant solutions to strip away any lingering surface residues, ensuring an optimal foundation for subsequent optical processing.

IV. Advanced RX Prescription Fabrication and German Precision Engineering

For personalized, complex prescription requirements, the workflow transitions into a highly specialized prescription RX department. This division focuses on the manufacturing of freeform progressive multifocal lenses and high-diopter customizations, delivering completed custom orders within a 48–72 hour operational window depending on prescription complexity and coating requirements.

Traditional digital surfacing techniques often apply uniform approximations across the lens geometry, which can generate peripheral distortions in complex progressive prescriptions. In contrast, our automated RX surfacing equipment utilizes continuous three-axis CNC diamond cutting technology to shape the rear surface of the lens with micro-level precision.

This advanced freeform technology maps thousands of individual calculation points across the lens surface, optimizing the refractive power for every angle of gaze. By calculating the exact interaction between the eye's rotation center and the lens surface, this machinery effectively minimizes peripheral astigmatism and expands the functional fields of view. This capability allows the laboratory to process intricate scripts, including high-cylinder balances and specialized corrections, with reliable reproducibility.

V. Comprehensive Lens Functionality and Surface Treatment Engineering

The virtual workflow culminates in the advanced vacuum coating and surface treatment division. This segment utilizes the 16 specialized NVC vacuum deposition chambers to bond multi-functional thin-film stacks onto the cured resin surfaces.

The vacuum coating matrix applies multiple performance layers to meet modern functional expectations:

□Photochromic Spin-Coating and Transition Technology: This process applies an even layer of light-reactive matrix across the front surface of the lens. The advanced spin-coating technology helps achieve consistent color transition performance when exposed to ultraviolet radiation and during indoor fading, supporting uniform photochromic appearance.

□Blue Block UV420 and Harmful Light Filtration: Integrated directly into the monomer matrix or applied via specialized interference coatings, this feature filters high-energy visible blue light between 400nm and 420nm while maintaining high luminous transmittance for natural color perception.

□Myopia Control Defocus Infrastructure: We offer myopia management lens designs tailored for selected markets, subject to local regulatory requirements.

□Advanced Protective Top-Coat Stacks: This process deposits highly durable anti-glare, hydrophobic, oil-repellent, and anti-fog layers. These vacuum-deposited films seal the underlying anti-reflective coatings, increasing scratch resistance, reducing surface maintenance, and ensuring clear vision in challenging humid or dusty environmental conditions.

By offering complete transparent visibility into these advanced production workflows via the 3D VR platform, the enterprise provides global distributors with clear verification of its

manufacturing precision. This commitment to technical excellence and rigorous quality assurance reinforces its position as a reliable, long-term OEM/ODM partner for the international ophthalmic industry.

VI. FAQ: Insights for Global Optical Distributors

Q1: What range of lens indices and materials can CONVOX supply for wholesale orders?

A1: We manufacture a complete range of resin lenses spanning low index to ultra-high index options. This includes CR-39, mid-index 1.56 and 1.61, impact-resistant Polycarbonate (PC) 1.59, and ultra-thin 1.67, 1.71, and 1.74 series high-quality lenses.

Q2: How does CONVOX control the quality of bulk lens shipments?

A2: To align with international market requirements in countries like Mexico and Saudi Arabia, Products undergo our standard quality inspection procedures across the automated production lines before packaging, helping maintain consistent surface quality and prescription accuracy.

Q3: What is the standard turnaround time for customized RX prescription lenses?

A3: Thanks to our advanced digital freeform RX equipment imported from Germany, we support a wide range of customized prescription requirements, including complex freeform progressive lenses, within a 72-hour operational window.

Q4: What functional coating technologies are available via your OEM service?

A4: We offer an extensive selection of functional treatments. This includes anti-glare, anti-fog, hydrophobic and oil-repellent top-coats, blue block technology, and specialized film-layer or spin-coated photochromic technologies.

Corporate Website: [<https://www.convoy-optical.com/>]

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Contact Our Sales Team Today:

Are you looking to expand your retail or laboratory inventory in Mexico, Saudi Arabia, or worldwide? Contact us today to request our complete product catalog, inquire about ready stock availability, or discuss our custom OEM lens packaging solutions.

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