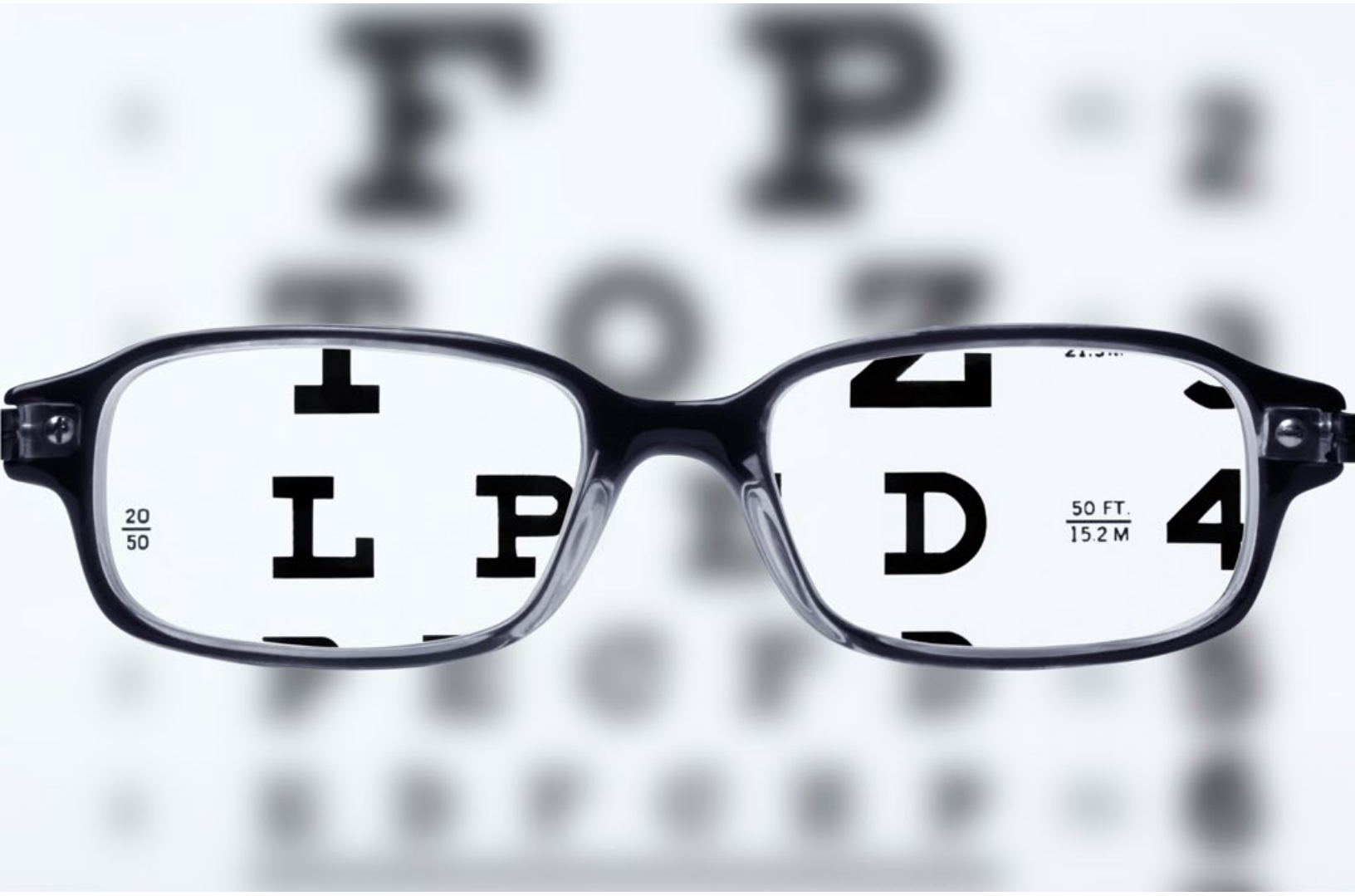
Despatch

Thermal Processing Technology

ITW EAE

Ovens for Optical Manufacturing

Innovative thermal processing solutions for opthalmic product manufacturing



Optical lens manufacturing

A trusted supplier of thermal processing solutions for opthalmic products

Despatch Industries has extensive experience in the optical market and a thorough understanding of the thermal processing challenges inherent in ophthalmic product manufacturing. Despatch ovens are regularly used for curing hard coatings on polycarbonate and other polymer lenses, nitrogen atmosphere curing of hydrogel contacts, polymerization of monomer and lenses, transbonding of photochromic lens layers, drying or degassing lenses after cleaning, sterilization and depyrogenation for pharmaceuticals and implants.

Optical manufacturers depend on uniform internal temperatures, accurate ramp and soak time and precise temperature controls. Forced convection ovens from Despatch Industries provide high air flow and tight temperature uniformity (±1°C) as well as controlled cooling. Together, these key attributes provide consistent coating cures, reduced cycle times, and dramatically improved process yields.

Thermal curing of scratch resistant hard coatings

Hard coatings are cured using ultraviolet light chambers or thermal processing ovens. Thermal curing of hard coatings produces a superior hardness due to longer cure times. Despatch provides batch and continuous process ovens for these manufacturers that produce a highly uniform cure across the entire coated layer. In the lab small benchtop ovens are used for processing of backside hard coatings after lens surfacing.

Degassing lenses prior to AR coating

Prior to applying AR coating the lenses need to be thoroughly cleaned in multiple washing baths. This process is followed by a drying and degassing process. Despatch provides lab ovens are specifically designed for these clean room processes.

Continuous process ovens for transbonding photochromic lenses

A custom PCc oven is also used for transbonding photochromic lens layers. The ovens come with a Teflon-coated belt and are built to Class 100 standards. The Despatch PCc is a Class A oven designed to safely manage the volitiles given off during the curing cycle.

Contact lens manufacturing

Ovens for curing hydrogel lenses in an inert atmosphere

High-volume contact lens manufacturers use a cast molding technique in which a monomer resin called "hydrogel" is injected into two-piece polypropylene molds called "cups." The cups are then heat-cured in an oven to polymerize the hydrogel to produce hard, slightly flexible lenses. The lenses are then removed from the cups and transferred to a downstream hydration process.

These hydrogel thermal curing cycles can be relatively long—up to 34 hours—and require a reliable oven with uniform internal temperatures, an inert nitrogen atmosphere, and accurate ramp and soak time and temperature controls. The Despatch LNB oven offers the ideal solution for contact lens manufacturers and other manufacturers with similar applications.

Despatch LNB Inert Atomosphere Oven

The Despatch LNB oven's core strength is its process repeatability and reliability. Designed for long service life and low maintenance, Despatch LNB ovens offer consistent performance while taking up minimal floor space. The stainless steel interior allows easy cleaning and the baked enamel exterior matches any lab environment.

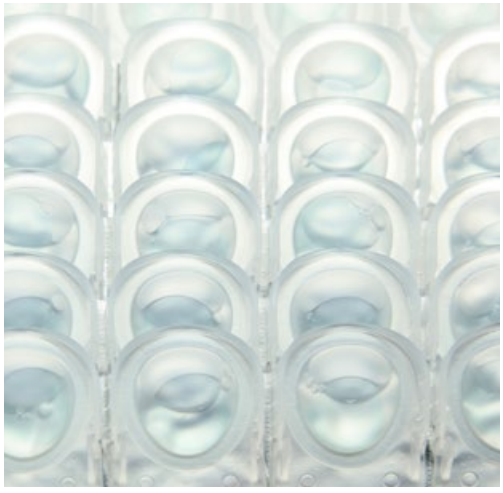
The LNB's operating range is from 60°C to 150°C (140°F to 302°F), with horizontal airflow producing superior temperature uniformity. An internal nitrogen atmosphere system is standard and will reduce oxygen concentrations to as low as 100 ppm as required to prevent distorted or discolored lenses. A purge flowmeter, maintained flowmeter and an auto modulating valve provide easy and accurate nitrogen flow control.

The LNB is a custom-designed oven which allows it to be tailored to specific applications.

LNB OVEN FEATURES

- Inert atmosphere capabilities
- Temperatures up to 150°C
- 304 stainless steel interior
- Brushed 304 stainless steel front
- Horizontal airflow
- Protocol 3™ control with large LCD display, integrated data logging capabilities and USB port for simple oven set-up and data export
- Stainless steel water cooling coil for automatic water cooling system
- Access port at rear of oven
- Disconnect switch with CE Compliance
- UL-listed open industrial control panel

Despatch has a broad selection of standard ovens with a range of sizes and configurations to suit your needs. We will work with you to develop a custom configuration including any ancillary equipment that may be required.



Sterilization and Depyrogenation

Solutions for surgical eyecare products, implants and pharmaceuticals

The Despatch LCC/LCD1-16 and LCC/LCD1-51 models, which are small and can be stacked to save floor space, are great for small labs. The larger, 14-cubic-foot LCC/LCD2-14 is available with pass-through doors for laboratories in which the preparation area is separate from the filling suite.

Despatch LCC/LCD series have a stainless steel exterior and interior, and recirculate air that is 100% filtered through a 99.99% HEPA filter for ISO Class 5 (Class 100) or better operation. All interior seams are continuously welded on the insulation side to protect the work chamber from contamination, including the migration of insulation fibers.

The maximum temperature rating of the Despatch LCC models is 260°C, and the LCD ovens is 350°C with a horizontal airflow that provides exceptional temperature uniformity. A balanced exhaust system to maintains chamber pressure and an access port at the back of the oven to facilitates scheduled periodic uniformity surveys and product thermocouples.

Programmable door locks with an electronic release prevents the operator from opening the oven door when a cycle is in progress. Both an audible alarm and a visual alarm provide alerts at the end of the completed process cycle and if a high-limit temperature occurs.

The inert atmosphere option allows nitrogen (or other inert gas) to be injected into the chamber to lower the oxygen level to prevent oxidation of products. A water cooling coil is provided for rapid cooling. Control of nitrogen flow and water cooling is programmable through the Protocol 3 controller.

Protocol 3 is a microprocessor-based temperature and hi-limit controller with large LCD display and real time clock for auto start capability. The LCD display shows temperature readings along with clear, detailed information on oven status. Protocol 3 features three operating modes for quick and easy operation: Manual mode, Timer mode and Profile mode. The data-logging functionality enables reporting and analyzing and data files can be exported via the controller's USB port. Modbus RS485 communications are included for easy data access.

SERVICE AND TECHNICAL SUPPORT

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