

Nitrogen-Inerted Conveyor Systems

Fully Engineered UV Curing Conveyor System for Inerted Processing

Fusion UV Systems' popular DRS conveyor systems provide a fully enclosed and sealed inerting chamber allowing residual oxygen levels below 50 ppm for curing materials such as silicone release coating, hardcoats, topcoats, and adhesives. The DRS QNH and DRS QN conveyor systems accept one or two rows of Fusion UV Systems' modular, electrodeless lamps with either standard or variable power supply units.

The DRS QN and DRS QNH provide exceptionally low oxygen levels. Model QN can provide inerting to 500-200 ppm O₂, and model QNH to below 50 ppm O₂.



*Model DRS QNH
(lamps and power supply
purchased separately)*

Conveyor System for Laboratory R&D and Manufacturing PM Programs

The DRS QNH and DRS QN offer the convenience of accepting electrodeless lamp modules to serve the needs of research & development, quality assurance, and manufacturing/maintenance personnel. Formulations may be developed in the laboratory under inerted conditions required by large-scale

production. This system supports Preventive Maintenance Programs and process control monitoring applications. Individual lamp modules used in a production process may be installed on the conveyor to facilitate lamp radiometric performance measurements.

Standard Features

- Compact, efficient design.
- Modular electrodeless lamp systems for maximum reliability and throughput (lamp system selected separately).
- Teflon-coated glass fiber belt.
- 15-150 fpm (4.5-45.7 m/min.) continuous range adjustable speed control with digital display. Other speed ranges available.
- Emergency stop switch: Stops conveyor and automatically switches lamps to standby or off.
- System interlocks for safe operation.
- Lamp focus adjustability for process variations.
- Designed for ease of product loading and take-off.
- Sealed, quartz exposure "windows" isolate cure chamber from lamp cooling air.
 - Hinged panels permit infeed and outfeed to be sealed for high efficiency inerting (for DRS QNH system only).
 - Oxygen analyzer port.
- Water-cooled bed for cooling belt and substrate.
 - Slip-clutch drive for safety.
- Capable of rotating each lamp independently.
- Exhaust flange for ducting to a remote blower (exhaust blower sold separately).
- Standard conveyor voltage is 110/120 VAC, 50/60 Hz, single-phase.

Optional Features

- Tailor the conveyor for your specific processes.
 - Optional speed ranges from 1-10 fpm through 50-500 fpm.
 - Conductive "anti-static" conveyor belt.
 - Elapsed time meters to monitor lamp usage.
- 200/240 VAC, 1-phase, 50/60 Hz voltage for conveyor.
- Oxygen analyzer.
- Casters.
- Standard color shown. Other colors available.

SPECIFICATIONS: Nitrogen-Inerted Conveyor Systems

Lamp Configurations: (lamps purchased separately)

- **F450, F455, F600, VPS/1250, VPS/1600:**
One lamp wide, one or two rows.
- **LH10:** One lamp wide, one or two rows.
- **F300:** One or two lamps wide, one or two rows.**
- **HP6:** One or two lamps wide, one or two rows.**

**Note: Conveyor base will accommodate two power supplies.

Width, Nominal: 10 in. (254 mm) or 12 in. (305 mm), depending on lamp system.

Conveyor Belt Width: 14 in. (355 mm).

Conveyor Length (overall conveyor bed):
91 in. (2312 mm).

Conveyor Width (overall): 42 in. (1067 mm).

Conveyor Belt Height: 34.25 in. (870 mm)
± 2.0 in. (50 mm) from floor. (Selection of castors will increase height.)

Inerting Capability:

- **DRS QNH:** To below 50 ppm residual oxygen (with infeed and outfeed panels closed).
- **DRS QN:** To 200 ppm residual oxygen.

Belt Material: Glass fiber, PTFE coating.

Belt Speed Range (standard): 15-150 fpm (4.5-45.7 m/min.).

Speed Control:

- **DRS QNH:** Closed loop with digital set point and display.
- **DRS QN:** Variable with digital display.

Clutch Slip Limit: 30 lbs. (13.5 kg) belt pull.

Slider Bed: Water-cooled, stainless steel.

Drive System: P.M.D.C. Motor, 1/8 HP.

Lamp Focus: Lamp height above belt continuously adjustable from 2.1 in. (focused) to 6.1 in.

Exhaust Duct Connection Size: 10 in. dia. (254 mm dia.).

Other: Water supply requirement for cooling conveyor bed.

*Reference system outline drawing #542650 for QN dimensions and installation information.

Standard Power Requirements

Conveyor: 110/120 VAC, 50/60 Hz, 1 phase, 15 A (not including external exhaust blower).

Lamp System: See appropriate lamp data sheet.

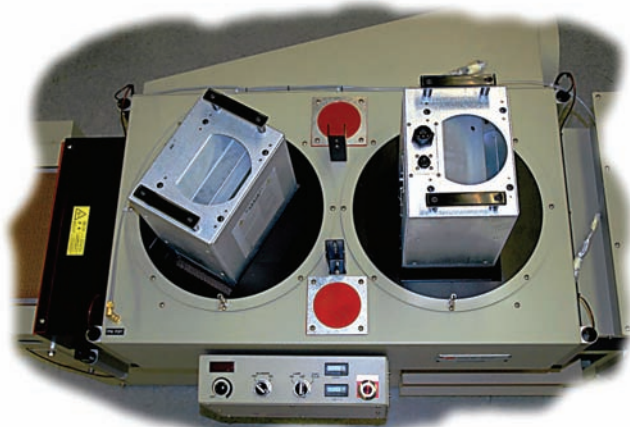
Fusion UV Systems' Engineering: Designed to withstand the rigors of industrial environments

The conveyor frame and light shield of the DRS QNH and DRS QN conveyor systems are constructed of welded steel for strength and durability.

As with all Fusion UV Systems' equipment, personal safety and substrate protection are prime considerations.

Interlock features indicate and protect against:

- Lamp and blower failure.
- Microwave radiation leakage.
- Excessive power supply temperature.
- Power imbalance.
- Power error.
- Power interruption.
- External interlock provision (for user connection to other equipment).
- Zero speed interlock.



Top view showing rotating boots.

Contact your local Fusion UV office for an engineered solution for your specific requirements.



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