

GUARDIAN® II



Gas Screen Printing Conveyor Dryer



FEATURES

- **Belt width:**
122 to 213 cm (48" to 84")
- **Heat chamber length:** 183 cm (72")
- **CoolSkin™ technology**

Guardian® II, the industry's most efficient, innovative, and affordable high-production graphic gas screen printing conveyor dryer, is available in belt widths from 122 to 213 cm (48" to 84"). Not only does it have the highest production capacity in its class, it's also the most energy efficient. Heavy-duty thermal insulation prevents heat from migrating into the workplace; CoolSkin™ technology leaves the dryer skin cool to the touch; and exhaust gasses heat incoming air. Fast cure rates and high product throughput maximize dryer capacity and minimize per-unit cost.

Available in liquid propane (LP) or Natural Gas (NG), the high-performance burners are designed with excess capacity that far exceeds consumption rates under normal operating conditions. Separate blowers control combustion, circulation, and exhaust. A high-volume forced air system quickly brings the chamber to the desired temperature, speeding the start of production. Process temperatures and set temperatures are controlled digitally. Temperature consistency is ensured by a fuzzy-logic controller,

which responds to ambient temperature changes by keeping chamber heat within 1° of target temperature at the thermocouple. A tower light shows when temperatures are within user-set parameters. When readings fall outside those settings, a temperature monitor issues visible and audible alarms.

Guardian II features M&R's Teflon-coated fiberglass Patriot Belt™ with the SureTrak™ roller system (U.S. Patents Pending: SN 15194035 & 15265538). The red flexible bead stitched along one edge of the Patriot Belt rides in grooves machined into the large anodized aluminum SureTrak rollers. It's the most precise dryer belt tracking available. Entry and exit openings are adjustable. Digital speed readout makes it easy to duplicate settings. M&R's automatic shutdown sequence keeps the blower and belt running until the chamber has cooled. Guardian II options include high speed conveyors; split belt conveyors with independent variable speed drives and direction; Switchback™ & Vitran II™ UV Curing Modules; and ambient air and refrigerated air cooling units.

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GUARDIAN® II

STANDARD FEATURES

Air Handling

- Blowers hold down even the lightest substrates
- Enhanced airflow accelerates drying/curing
- Exhaust Blower evacuates up to 50 970 l/min (1800 cfm)
- Heat efficiency system reduces operating expenses by using outgoing combustion gas to heat incoming air
- High-volume circulation blower reduces energy costs
- Stainless steel filters slide out for easy cleaning
- Three separate dedicated blowers (combustion, circulation & exhaust)

Certification

- CE Certified: Built to specifications established by the European Committee for Standardization® (CE)
- CSA Certified: Built to specifications established by the CSA Group (models sold in Australia are AGA Certified: Built to specifications established by the Australian Gas Association)
- UL Listed: Built to specifications established by Underwriters Laboratories® (UL)

Control Center

- Automatic shutdown sequence keeps the blower and belt running until the chamber has cooled
- Control panel rotates for visibility and access
- Digital keypad with digital display
- Temperature monitor issues visible and audible alarms when readings fall outside user-specified parameters
- Tower light indicates when temperatures are within user-set tolerances

Conveyor System

- Conveyor belt is made of heat-resistant, Teflon®-coated fiberglass
- Digital belt speed readout makes it easy to duplicate speed settings
- Driven by a reliable, heavy-duty, variable-speed DC motor
- Large anodized aluminum rollers are crowned for positive belt tracking
- Patriot Belt™ with the SureTrak™ roller system features a heat-resistant, Teflon®-coated fiberglass belt with a red flexible bead stitched along one edge that rides in grooves machined into the large anodized aluminum rollers, providing the most precise belt tracking available (U.S. Patents Pending: SN 15194035 & 15265538)
- Standard belt speed: 91 to 1554 cm (3' to 51') per minute

Design & Construction

- Adjustable entry/exit openings
- Air-cooled cabinet ensures long life for electrical components
- Bearings are designed for high speeds and high temperatures
- Circuit breakers allow easy reset
- Low-profile design makes it easier to see over the dryer
- Modular design and specialized fasteners make it easy to attach additional heat chamber units

Energy Efficiency

- Burners are designed with excess capacity that far exceeds consumption rates under normal operating conditions
- CoolSkin™ technology leaves the dryer skin cool to the touch
- Fast curing rates and high product throughput maximize dryer capacity and minimize per-unit cost

- Fuzzy-logic controller ensures consistency by keeping heat within 1° of target temperature at the thermocouple
- Guardian II is the most energy-efficient dryer in its class
- Heavy-duty thermal insulation prevents heat from migrating into the workplace
- Pressurized vector air knives provide consistent and uniform temperatures throughout the drying chamber
- Process temperature and set temperature are displayed and controlled digitally

Heat Chamber

- Burners are available for liquid propane (LP) or natural gas (NG)
- Direct-fired burner is maximum-rated at 400 000 Btu
- Double-wall construction
- Galvanized steel interior
- Interior air distribution system ensures uniformity and consistency of temperature
- Modular gas train simplifies maintenance

Productivity

- Guardian II has the highest production capacity in its class

Warranty, Service & Support

- 24-hour hotline is staffed 365 days a year
- Access to M&R's Training Center
- One-year limited warranty

OPTIONS

Air Handling

- AC variable-speed circulation blower

Conveyor System

- Available with conveyor speeds faster than the standard rates listed

- Conveyor extension sections are available in 30 cm (12") increments
- Split-belt model with independent drives features reversible direction and variable speed

Cooling

- Ambient air and refrigerated air cooling units

Heat Chamber

- Additional 61 cm (24") sections are available
- 61 cm (24") infrared pre-heat module speeds throughput

UV Curing Modules

- Switchback™
- Vitran II™

SPECIFICATIONS

	Guardian II-48	Guardian II-60	Guardian II-72	Guardian II-84
Belt Width	122 cm (48")	152 cm (60")	183 cm (72")	213 cm (84")
Burner Input Maximum ⁴	400 000 Btu	400 000 Btu	400 000 Btu	400 000 Btu
Burner Width	217 cm (85.5")	248 cm (97.5")	278 cm (109.5")	309 cm (121.5")
Electrical Requirements ¹	208/230 V, 3 ph, 20/18 A, 50/60 Hz, 8 kW 460 V, 3 ph, 9 A, 50 Hz, 8 kW	208/230 V, 3 ph, 37/35 A, 50/60 Hz, 16 kW 460 V, 3 ph, 19 A, 50 Hz, 16 kW	208/230 V, 3 ph, 37/35 A, 50/60 Hz, 16 kW 460 V, 3 ph, 19 A, 50 Hz, 16 kW	208/230 V, 3 ph, 37/35 A, 50/60 Hz, 16 kW 460 V, 3 ph, 19 A, 50 Hz, 16 kW
Electrical Requirements for Optional 61 cm (24") Radiant Section ¹	208/230 V, 3 ph, 15/17 A, 50/60 Hz, 5 kW 400 V, 3 ph, 9 A, 50 Hz, 5 kW	208/230 V, 3 ph, 19/21 A, 50/60 Hz, 6.2 kW 400 V, 3 ph, 11 A, 50 Hz, 6.2 kW	208/230 V, 3 ph, 21/23 A, 50/60 Hz, 7.4 kW 400 V, 3 ph, 13 A, 50 Hz, 7.4 kW	208/230 V, 3 ph, 25/27 A, 50/60 Hz, 8.5 kW 400 V, 3 ph, 14 A, 50 Hz, 8.5 kW
Exhaust Blower System ^{2,3}	25 cm (10"): 50 970 l/min (1800 cfm) @ 6 mm (1/4")	25 cm (10"): 50 970 l/min (1800 cfm) @ 6 mm (1/4")	25 cm (10"): 50 970 l/min (1800 cfm) @ 6 mm (1/4")	25 cm (10"): 50 970 l/min (1800 cfm) @ 6 mm (1/4")
Expansion Heat Modules	61 cm (24")	61 cm (24")	61 cm (24")	61 cm (24")
Gas Input Size	2.54 cm (1")	2.54 cm (1")	2.54 cm (1")	2.54 cm (1")
Heat Chamber Length	183 cm (72")	183 cm (72")	183 cm (72")	183 cm (72")
Heat Chamber Width	160 cm (63")	191 cm (75")	221 cm (87")	251 cm (99")
Infeed/Outfeed Length (Standard)	122 cm (48")	122 cm (48")	122 cm (48")	122 cm (48")
LP/Natural Gas Input Pressure	.93 mm Hg (5" w.c.)	.93 mm Hg (5" w.c.)	.93 mm Hg (5" w.c.)	.93 mm Hg (5" w.c.)
Overall Length	427 cm (14") or more	427 cm (14") or more	427 cm (14") or more	427 cm (14") or more
Shipping Weight ⁵	1588 kg (3500 lb)	1814 kg (4000 lb)	2041 kg (4500 lb)	2268 kg (5000 lb)

¹ If incoming voltage differs from the voltage(s) listed in this brochure, calculate amperage accordingly.

Other electrical configurations are available. Contact The M&R Companies for details

² Measured at the Exhaust Discharge Port

³ Static pressure

⁴ Normal usage varies, but is significantly lower than the stated maximum

⁵ Weight applies to models with a 244 cm (96") heat/expansion chamber



The M&R Companies

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