

Guitar manufacturer utilizes UV curing for coatings on wood parts

Reduced work in process and factory floor space while improving quality and production flexibility

Fender Musical Instruments Corporation, one of the world's leading electric guitar manufacturers, needed to decrease the cycle time on their guitar body undercoat line in their Corona, CA facility. Countless racks of drying guitar bodies occupied valuable factory floor space and increased Work In Progress (WIP).

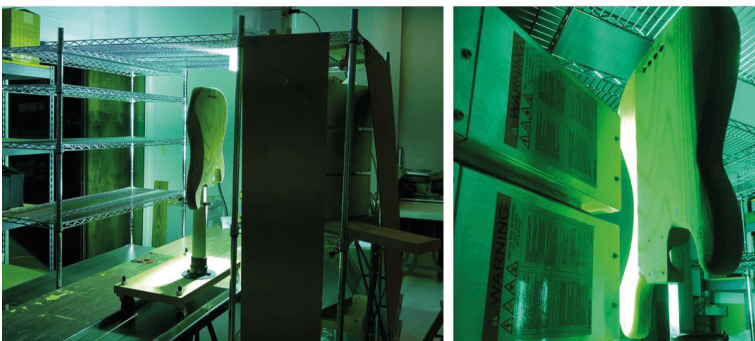
Heraeus Noblelight's longtime partner INPRO Technologies, Inc. (Frederick, MD) has over thirty years of experience providing process solutions, including UV curing, to a broad customer base. INPRO worked closely with Fender to identify their needs, design and build a curing solution, and then install the system into Fender's production line.

To choose the best UV source among the three main UV sources: microwave powered lamps, LEDs, and arc lamps, considerations included the spectral requirements of the coating, reliable quality over time, useful bulb life, and impacts to guitar temperature. Microwave powered lamps were selected for their reliability, high UV output, and minimal performance degradation over time, all leading to a faster ROI.

Meticulous testing, process simulation, and radiometric validation in INPRO's lab determined the location and orientation of each lamp in the static lamp array. The new 3-D part UV curing system packs up to 18 Heraeus Noblelight microwave-powered F300 UV curing systems into a 4'x4' area. Should Fender add another guitar profile to their offering, operators can simply adjust individual lamp positions to fine tune the system.

Eric Couch, President at INPRO noted, "We've worked with Heraeus Noblelight's microwave-powered UV curing systems for more than 30 years. They are highly reliable and ideal for three dimensional curing processes because of their high UV output and ease of orientation adjustments for different part shapes and sizes. Fender has been impressed with the productivity and quality improvements resulting from the UV curing system."

Fender's preventative maintenance goal was less than 1 hour per week, so the system enables easy and quick access to each UV curing lamp for routine cleaning or lamp replacements when needed. An IoT enabled custom control system provides real-time monitoring of each lamp in the array to optimize preventative maintenance, and enables Fender operators to remotely monitor lamps, power consumption, and system status from computers and mobile devices on their network.



Benefits

- Reduced floor space
- Reduced work in process
- Improved product quality
- Increased production flexibility

Technical Data

- 18 microwave-powered F300 systems with dichroic (heat reduction) reflectors
- Static lamp array inside 4' x 4' enclosure UV cures a coating on wooden guitar bodies fixtured on a continuous conveyor
- Roll-up doors enable 30 sec. access to each lamp for quick and easy access to lamps
- Mounting system locks lamps into either operating position for repeatable exposure or maintenance position for service
- IoT enabled custom control system for real-time monitoring



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Technical data is subject to modification.