

THINKY ARV-310
LED mixer
Industrial non-contact
"planetary" mixer

Fisnar F7300NV
robot
Precision dispensing
benchtop robot



Our customer

Plessey Semiconductors

Customer benefits

- Consistently mixed silicone and phosphor
- High accuracy of dispensing position
- Repeatable, controllable process

Material mixing and dispensing prove key for LED production quality

British LED manufacturer Plessey Semiconductors have successfully made the transition from the manufacturing development phase (where manual methods of material preparation and application often suffice) to full production by employing some of our automated mixing and dispensing technologies.

Carl Withers, Plessey's Assembly Development Team Leader, explained:

"We develop leading edge LED technologies, based on Plessey's MaGIC platform, for a wide range of applications – from standard consumer products to more demanding, application specific and chip scale packages. The LEDs emit a blue light and through a silicone and phosphor mixture, convert this blue emission to white light. The constant and accurate mixing of this mixture is key to target specific colour temperature and rendering."

The **Thinky ARV-310 LED** benchtop mixer is a non-contact planetary mixer which mixes, disperses and degasses according to programmable mixing profiles. It includes an integral vacuum during the mixing process to ensure no air entrapment, and is specially geared to homogenously mix into liquids heavy fillers such as the phosphor used by Plessey Semiconductors.

David Peat, one of our Product Specialists, worked with Plessey to recommend mixing and dispensing equipment for the LED phosphors. He said:

"I recognised that our Thinky ARV-310 LED with vacuum and heavy filler capability would provide the high level of air-free mix consistency of the silicone and phosphor, which is required for optimal performance of the completed LED components."

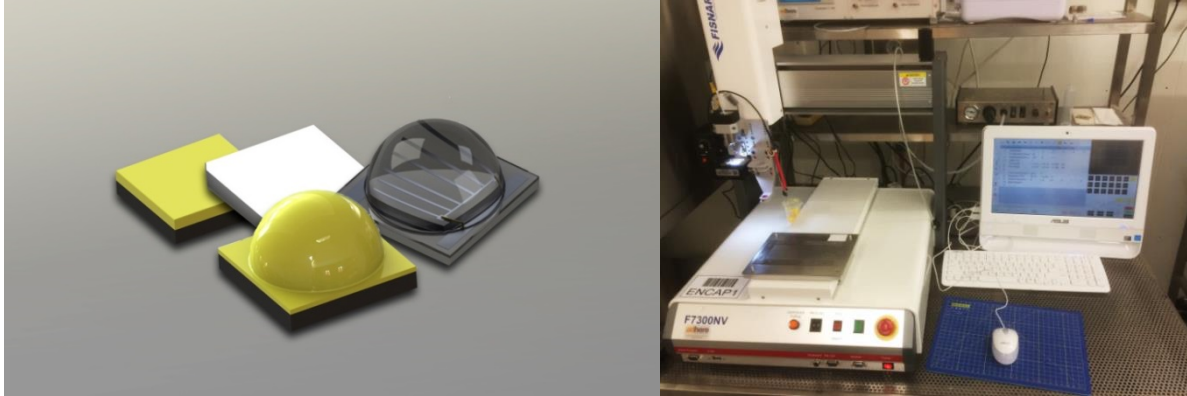
We also recommended a **Fisnar F7300NV** robotic dispensing system for application of the mixed phosphor to the LED assemblies. To help with location accuracy, it has a camera based vision with a resolution of 0.001mm.

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Carl Withers concluded:

"The Thinky mixer and Fisnar robotic dispenser enabled us to achieve high accuracy process windows, due to the consistency of the mix and the positioning of the dispense, which are both critical to the light output."

Plessey's MaGIC™ (Manufactured on GaN-on-Si I/C) High Brightness LED (HBLED) technology has won numerous awards for its innovation and ability to cut the cost of LED lighting by using standard silicon manufacturing techniques.



Thinky ARV-310 LED mixer

- Fast mixing
- Degas and remove bubbles at the same time
- Mix in your product container
- Non-invasive
- From low viscosity to semi-solid materials
- Dry particle mixing
- Degasses filled syringes
- No cleaning between batches
- Consistent quality with all digital controls
- Multi-step mixing
- Hands-free processing
- CE marked

Applications include: Formulating and mixing a multitude of different products including LED phosphors, adhesives, sealants, moulding compounds, lubricants, slurries, coatings, inks, paints, abrasives, bio-chemicals, cements, medical compounds, cosmetics/personal care materials, detergents, conductive pastes, dental materials, foods, construction materials or any other materials which are hard-to-mix, hard-to-degas, or hard-to-wet.

Fisnar F7300NV robot

- Dispensing dots, lines, arcs and circles
- 4 axis, 360° rotation
- Resolution 0.01mm
- Performs continuous path and point to point motion
- Quick "Fluid Purge" button located on robot front panel
- 100 programs, 400,000 points memory capacity, 4000 points per program

Applications include: Dispensing form-in-place gaskets, adhesives, potting and filling materials.



Contact us for more information on our Metering and Mixing Equipment or range of Robots

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