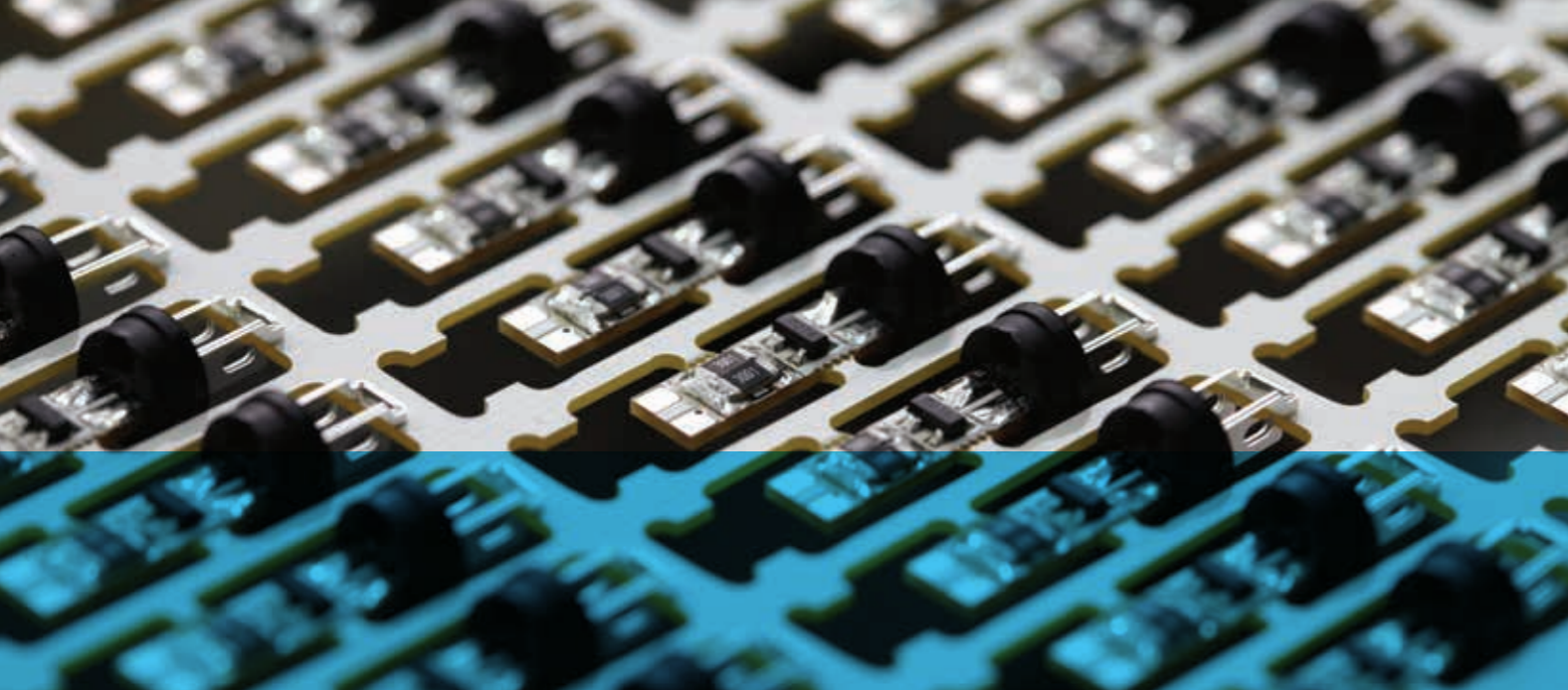


making light
work for you

MARL



INTRODUCING: THE NEW SURFACE MOUNT TECHNOLOGY (SMT) CENTRE AT MARL INTERNATIONAL

Marl, one of the pioneers in the industry, has been adapting leading LED technology to provide innovative, attractive, functional, and cost effective solutions for over 40 years! Customers return to Marl for world class in-house design and manufacturing facilities, combined with agility, speed, flexibility, and willingness to respond to both needs and expectations as projects evolve and mature through the entire product life cycle.

- Access to the best LED technology in the world
- World class in-house design and manufacturing facilities
- High quality, high performance products and solutions
- Agility, speed and flexibility of response
- Empathy with needs and expectations as projects evolve and mature through the entire product life cycle

"Our lighting industry customers are looking for the best LED technology for their application, fast response, and consistent high quality and support they can rely on through the total product life cycle at a cost which maintains their own competitive advantage; that's the Marl way of supporting the UK lighting industry!"

Adrian Rawlinson, Managing Director, Marl



In 2012 Marl started in-house high speed assembly which has been so successful that production time has been reduced to keep up with demand. Marl's access to the best LED lighting technology, coupled with the combination of quality design and manufacture, speed and flexibility of service for both design and supply activities makes this service consistently successful.



Saving the world one lightbulb at a time!
Thanks @MarlLEDs #ProudToBeBritish.
Paul Jones@pj201

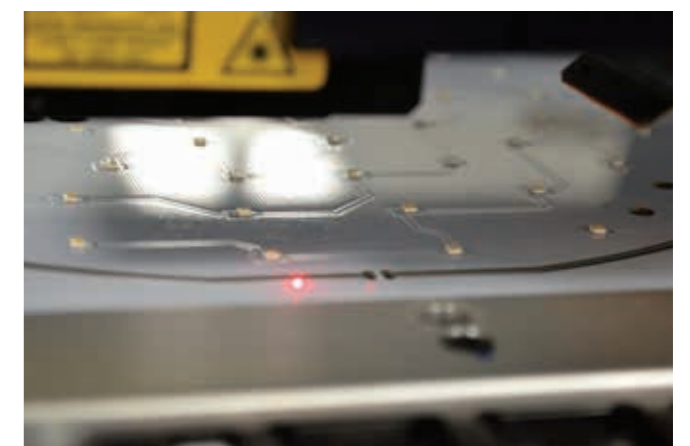
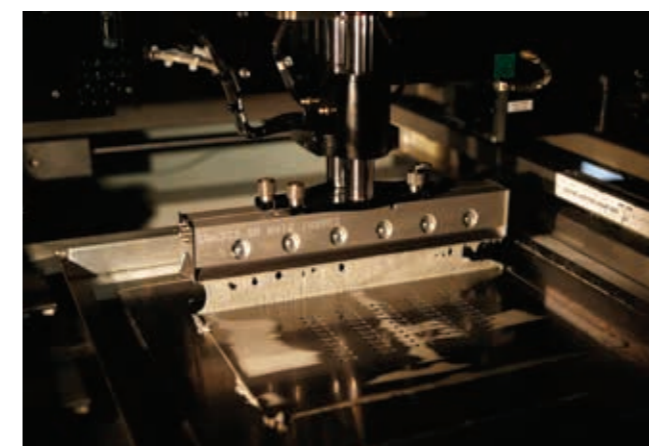
Marl is proud to present, for November 2014, the new SMT Centre. Marl's SMT and LED assembly facility now has the capacity to process 80k components per hour and is ideally suited to competitively supporting professional luminaire manufacturers who specialise in producing interior and exterior lighting, for example; sealed, linear and circular fittings utilising either COB or LOB technology.

At the heart of this project are two additional I-Pulse M20 high performance, high flexibility SMT placers - the ultimate super-flexible multi-purpose SMT machines. These are coupled with custom designed loader and conveyor systems and two lemme Neo 20 twenty stage Convection Reflow Ovens. The project involves installation of all existing and new SMT lines in a climatically controlled environment, including dedicated storage and materials handling area.

- Very high orders of placement accuracy of +/- 0.040mm for chips and +/- 0.025mm for QFPs, (Quad Flat Packages)
- Stable feeding, pickup and placement of LEDs and associated components
- Multi-placement component heads to enable wide ranging component handling capability, rapid application of solder pastes and adhesives and high feeder capacity, (maximum 144 feeder lanes)
- Stencil-less solder paste dispensing results in reduced NRE costs and reduces lead time for prototype development
- Capability to place secondary optics
- Enhanced dimensional capability: 1,480mm x 480mm maximum processing size for conventional FR4 and metal clad boards
- Capability to process FPCs, (Flexible Printed Circuit Boards), with clamping / stable handling of long boards with narrow aspect ratio
- Laser measurement to control board warp measurement



The light engines that @marlleds make for us are beating cheaper alternative LED output by 300 - 500% in our fixtures.
Budmaster LED Ltd@BudmasterLEDLtd



LED COMPONENTS AND ACCESSORIES



LEDS

- Citizen COBs available in 4 packages and 11 types (88 models total)
- Luminous flux: 30 lm to 22,473 lm (0.2 W to 165 W)
- Applications include LED bulbs, downlights, streetlights, floodlights, etc.
- SMT, 3mm, 5mm LEDs and LED Light Pipe Assemblies



LED DRIVERS

- Ranging from 3W to 100Watts
- Suitable for driving the Citizen COBs
- Wide range of input and output options
- UL Approval



OPTICS AND REFLECTORS

- Available from 8° to 122° viewing angle options
- Workable with or without COB LED Connectors
- Available in different many different dimensions



CONNECTORS AND LED HOLDERS

- Available for COB LEDs
- SMT on PCB options
- Compatible with optics and reflectors
- Aimed at industrial and commercial applications



HEAT MANAGEMENT

- Wide range of different Thermal Conductive options
- Heatsinks, Silicone and Grease options



LED LIGHT METERS

- More than 30 light unit-of-measures to choose from
- Standalone LED meter – no other equipment necessary
- Illumination distribution charts provide assistance in fixture design
- “BIN” ranking features allow for fast CIE 1931 inspection
- Automatic continuous measurements with data-save to a SD card



The advice from The Marl Team and the service following has been brilliant. I really do appreciate the effort in improving the delivery date to meet my requirements.

Les Poole, Managing Director, M&P Survey Equipment Ltd