

# Optic & Lighting Technology.

New design possibilities



## Overview.

We provide complete optics solutions, particularly involving complex design where LED light is 'piped' to create unique and visually stimulating effects.

## Optics capabilities.

Our optics design and development expertise include:

- Optic modules incorporating incandescent bulbs, LEDs and other light sources
- Geometry optimisation using SPEOS simulation software integrated into a Catia 3D CAD package to accurately predict optic module output before manufacture
- Optic module integration into existing products
- Physics-based photo-realistic product visualisation in both lit and unlit conditions
- Optics output simulation and product visualisation
- LED selection and performance optimisation

- LED driving circuit development, including PCB integration into optic modules
- Prototype manufacture for final product approval before design release

## Validation expertise.

Our validation expertise includes:

- Complete in-house photometric test facilities
- Mechanical and electrical test facilities

## Manufacturing expertise.

Our manufacturing expertise includes:

- High quality injection moulding of optical-grade plastic components
- In-house electronics SMT "pick and place" manufacturing facility
- Multiple lamp module manufacturing technologies including plastic welding (vibration, hot-plate and ultrasonic) and automatic testing in accordance with IATF/TS16949

- Vacuum metallisation coating of aluminium and chrome
- PC lens hardcoating for scratch and UV resistance
- Flexible assembly cells for lower to mid volumes
- Semi and fully automated cells for higher volumes
- 100% online testing of key parameters with complete integration with MES
- Multiple Poke Yoke through our whole process
- "State of the Art" vibration welders with 100% parameters monitoring
- Leading edge technology with collaborative robots, AGV and vision systems

## Our people.

Our engineering team has expertise in the full range of optic design roles from 3D modelling, simulation and output optimisation to high quality manufacturing system sourcing and product validation.

**Contact us for more information.**