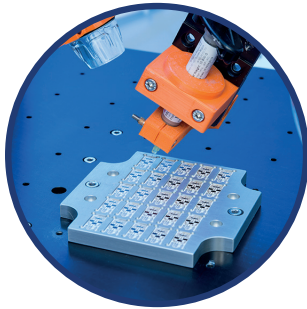


SENSING TECHNOLOGIES  
OPTOELECTRONICS  
PHOTONICS AND OPTICS  
DISPLAY TECHNOLOGIES

***pac*er**  
A Solid State Group Company

Custom  
Solutions



[pacer.co.uk](http://pacer.co.uk)

# SENSING TECHNOLOGIES OPTOELECTRONICS PHOTONICS AND OPTICS DISPLAY TECHNOLOGIES

## About Pacer

Pacer is a thriving and expanding provider of optoelectronic products, displays and custom-designed photonic, sensor and display solutions. We supply to a diverse range of industries including medical, healthcare, automation, security, agriculture, life science and defence.

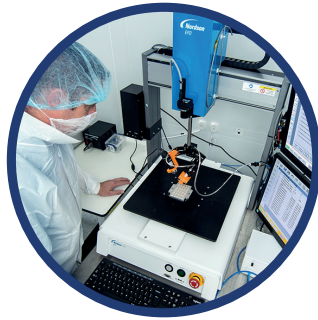
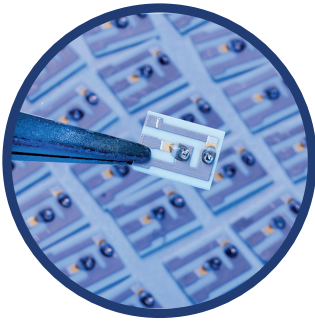
Established for over 30 years, Pacer is among the largest UK distributors in the photonics industry, representing globally recognized brands and offering cutting-edge innovations in illumination, detection, sensor and display technologies. Our facilities in Ireland and the USA mirror our model of success through close customer support and applications knowledge that is second to none.

## Worldwide Custom Solutions

For the past decade, Pacer has further exploited the outstanding global supply chain of our distribution arm and its unparalleled knowledge of the photonics market to support our Custom Solutions Centre - a state of the art, 5,000 sq ft design and manufacturing plant, serving customers worldwide with custom subassemblies and systems in detection and sensing, monitoring and illumination, and touchscreen displays. We offer value engineering, ruggedization and performance improvement of existing designs, or complete concept-to-production solutions, depending on our customers' needs.

Pacer is a trusted partner to customers ranging from small sub-contract manufacturers to globally recognized brands. Much of our growth is through existing customers actively seeking further opportunities to work with us, due to the value that we add in supply chain management, quality control and just-in-time shipping of critical components.





## Expanding Horizons

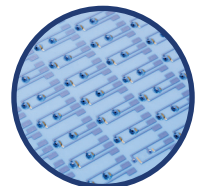
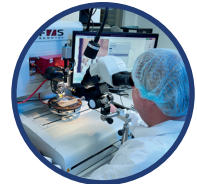
Today, Pacer is part of the Solid State PLC Group, which has brought product and design capabilities in computing, communications and power solutions to our Custom Solutions Centre, expanding the scope of our system designs to encompass everything from signal detection to displaying processed results at a remote destination.

## Solid State PLC Group Capabilities

Our sister company Solid State Supplies Ltd has a complementary line-up of globally recognised franchises who manufacture products for embedded processing, control and communications (both wireless and wired), power management, and LED lighting.

Solid State Supplies offers a number of value added services including:

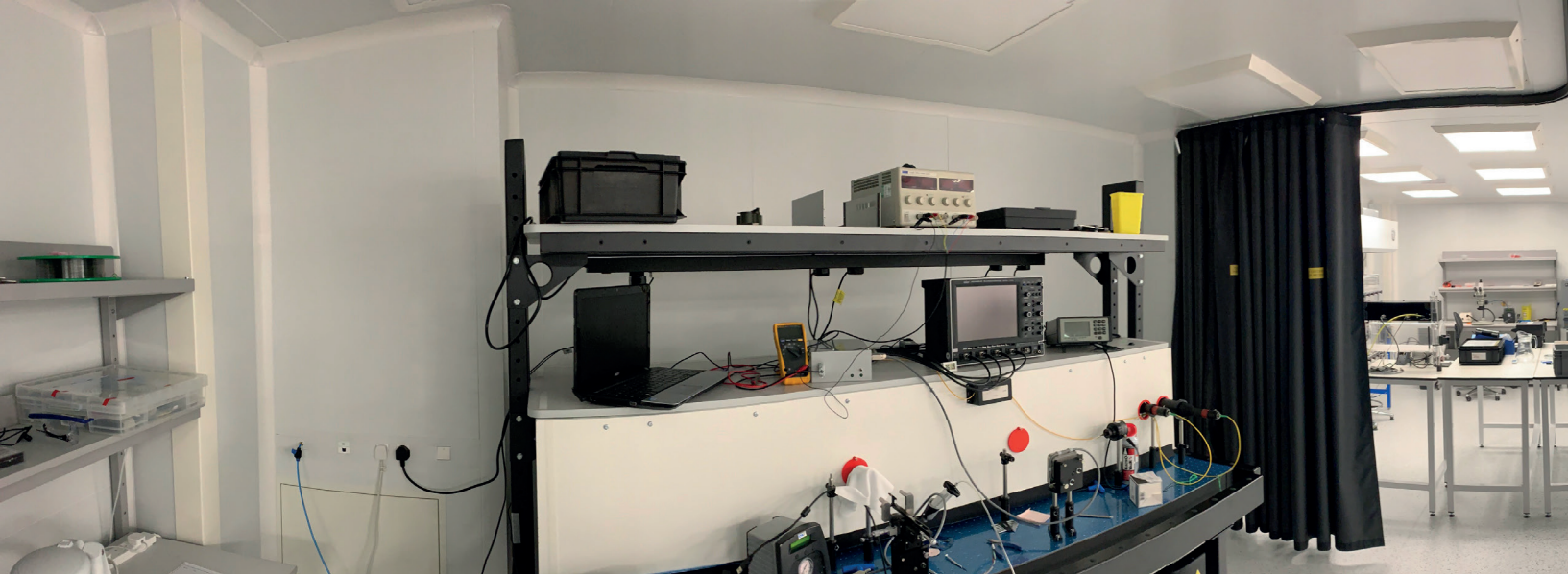
- End-to-End IoT Solutions
- Device Programming
- Firmware Version Control
- Tape and Reeling
- Mini Reeling
- Bake and Seal
- AS9120 and AS9100 certifications guarantee the highest levels of service and traceability
- Expertise in high-reliability, mission critical products for mil/aero applications



Also, within the group is Steatite Ltd. Steatite designs and manufactures complex, highly reliable technology for use in harsh operating environments. With 3 facilities across the midlands and south west, Steatite's focus is rugged portable and industrial embedded computing, custom engineered lithium battery packs, high-performance wideband antennas, and secure communication systems.

Rugged technology requires extensive testing to ensure reliable operation when subjected to elements such as extremes of temperature, vibration, dust or moisture. Steatite has comprehensive in-house testing capabilities, including an extensive environmental testing laboratory incorporating a climatic chamber and vibration table, and a state-of-the-art anechoic spherical near-field RF test chamber.





# What Can Pacer Do For You?

## Reduce Your Overheads

- Pacer can bring the efficiencies of low-to-medium volume UK manufacturing or high volume Asia manufacturing to your company
- We can negate your requirement for component level IQC, in-house assembly and multi-stage calibration and testing, and reduce your waste
- Our ability to source, customize or build components that offer only the functionality that you require can reduce complexity and cost when compared to working only with COTS products

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## Maximize Your Product Performance

- Our design team is experienced in achieving the highest sensitivity, the broadest performance range, the clearest signal - whatever parameters matter most to you – increasing the value of your product to your customers
- We have access to components at the cutting edge of a plethora of technologies, and knowledge of matching and calibrating these components to optimize system-wide performance

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## Offer Our Experience & Expertise

- Our design team has a wealth of experience in resolving technical challenges across a broad range of industries
- Pacer has over 30 years of applications experience as a photonics supplier, so is cognisant of the regulations, restrictions and requirements of a broad range of industries, covering defence, healthcare, aerospace, pharmaceutical and many more
- We offer technical and commercial project management, minimizing the time and resources required from your company to see a project through to completion



## Deliver Peace of Mind

- Pacer's core suppliers are quality focussed, regularly audited by Pacer, and have worked with us for decades
- Our in-house manufacturing capabilities range from die-attach and wire bonding right through to complete production of turn-key systems, consistently maintaining a returns rate below 0.5%
- Pacer will lock down your design to component level and hold stock, ready for release as needed, and can even re-design and produce obsolete product from your existing supplier
- If an issue does arise with a product, Pacer will release a replacement immediately before issuing an RMA and starting the assessment process

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## Commitment to Quality

Quality control is the cornerstone of the services Pacer provides. Our UK facilities, including our manufacturing partner sites, meet the quality assurance standards demanded by our OEM customers in the military, medical and security sectors.

All facilities are ISO9001 approved, with relevant facilities holding QS9000, ISO13485, TS16949, ISO14001 and FDA accreditation.

Pacer USA LLC is certified to AS9120 - a company level certification based on a standard which includes ISO9001:2000 and specific requirements related to the Aerospace Industry.

Our rigorous auditing procedures ensure that these exacting standards are maintained.

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## Project Management

We follow state-of-the-art models of project management and have APM-qualified project managers who utilise Project Management Plans (PMPs) including support of extended lifecycles which handover to production. We use Project Portfolio Management (PPM) software to manage projects, which incorporates dashboards, Gantt charts, task lists and document management.

At Pacer, we understand that you are leading experts in your industry, just as we are leading experts in ours. By partnering with us, you can provide your customers with a robust, cost engineered system, to ensure that they are able to fully exploit the value of the innovation that you have created for them.



# Our Process



## Initial Discussion

Every project is different. You may want to simplify your supply chain by moving from purchasing components for in-house assembly to purchasing a fully qualified sub-assembly, or perhaps you have a technical challenge to overcome and are seeking a partner to work with you on developing a solution from scratch. In all cases, we will meet with you to fully understand how we can best support you. Some or all of the following steps will then take place, as required.

## Design Study Proposal

Where major design work is required, we will generate a proposal detailing the pricing, timescale and deliverables of a design study, with a broad estimate of the full project timescales and costs. The cost of the design study itself is usually relatively low, but gives a clear roadmap of the route to production.

## Design Study

The design study produces a conceptual solution, along with a proposal detailing the costs and timescales to specific milestones from proof of concept through to volume production of your system.

## Proof of Concept

Following the design study, Pacer will continue to work closely with you to deliver a technical solution that demonstrably achieves your stated goal in a controlled environment.

## Design Engineering

One area where Pacer adds significant value for customers with an existing design is in integrating the technical solution into a robust, reliable system, cost-engineered to optimize the balance between performance and price, and addressing any need for ruggedization or performance under challenging conditions and form factor considerations. Our extensive and mature supply chain affords us great scope for integration of low cost standard components where a custom solution is not needed.

## Prototyping

Our prototype systems are intended to be as close as possible to a final solution, but it is immensely valuable to have customer feedback before the design is locked down. We extensively test the design to well beyond customer specifications to ensure robust performance. Any modifications required are introduced and tested at this stage, before preproduction.

## Preproduction

Once the final design is essentially proven, and depending on the complexity of the solution, we will often build a small batch of units for further validation and final approval. The BOM is finalized, all costs established and we are ready to quote production volumes.

## Production

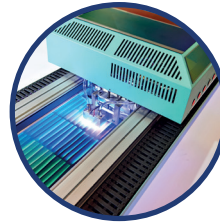
Your project is finished, but your close relationship with Pacer continues. We typically hold stock for up to 12 months, for you to call off as needed, from our bonded stores. Should any unit present an issue, we will release an immediate replacement before issuing an RMA for you to return the unit for analysis.

# Our Capabilities

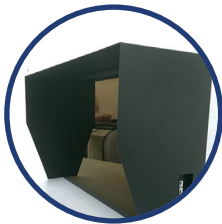
<b>Your Challenge →</b>  <b>Our Solution ↓</b>	Solution to Technical Challenge	Free Up Own Resources	Simplify Supply Chain	Process Improvements	Increased Reliability	Improved Yields	Expedited Product Launch	Cost Reduction
Free Consultation	X	X	X	X	X	X	X	X
Proposal / Estimate	X	X	X	X	X	X	X	X
Project Management	X	X		X	X	X	X	X
Supply Chain Management	X	X	X	X	X	X	X	X
Sourcing & Obsolescence		X	X	X	X	X	X	X
Design Study	X				X		X	
Proof of Concept	X						X	
Integration Support	X						X	
Prototyping	X						X	
Enhancement & Ruggedization	X	X		X	X	X	X	
Value & Production Engineering	X	X		X	X	X	X	X
Multi-Stage Testing	X	X		X	X	X	X	X
Pre-Production	X	X		X	X	X	X	X
Production & FQC	X	X	X	X	X	X	X	X
Documentation & Bonded Stores	X	X	X	X	X		X	X
Process Review		X		X	X	X		X

# Our Market Sectors

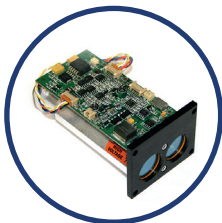
MILITARY AND AEROSPACE  
ENERGY EFFICIENCY  
INSTRUMENTATION  
MOTION SENSING  
INDUSTRIAL  
SCIENTIFIC  
SECURITY  
MEDICAL



## Recent Case Studies



Pacer took the design of this video assistant referee (VAR) from conception to a fully Pacer-designed product at our Taiwanese partner's manufacturing centre. Bespoke requirements included an all weather housing and custom I/O, wide temperature performance requiring complex thermal management, high-bright anti-reflective technology, including optical bonding, custom firmware and a high performance graphical interface.



Pacer manages the subcontract manufacture of this Laser Range Finder Module, used for vehicle profiling and speed detection. The production of this complex module requires high precision calibration and alignment. We have been able to realise significant production cost savings for our end customer.



Pacer initially advised on the display for this high end mixing desk which demanded the very best in screen performance and reliability in outdoor conditions. The multi touch screen had to be sunlight readable and capable of withstanding a wide temperature range, with a guaranteed 5-7 years longevity of supply.



Pacer developed an innovative manufacturing method of using cameras to align these high end screens. We are able to optically bond the touchscreen to the TFT so that no dust ingress occurs, enhancing the durability and ruggedness of the screen and resulting in even better visibility in sunlight. We took the design from conception to a fully Pacer manufactured product at our Weymouth facility.

The patented lightfusion™ photofacial system is a proven phototherapy treatment which energises skin cells and rejuvenates skin. The lightfusion phototherapy mask incorporates LED devices that deliver an optimised and controlled level of red and near infra-red light.

Pacer took lightfusion's base design and applied "design for manufacture" processes, transforming it into a product that could be reliably produced in high volume.

## Contact Us

If you would like to discuss your requirements further with us, please contact us on [info@pacer.co.uk](mailto:info@pacer.co.uk), via our website enquiry form at [www.pacer.co.uk](http://www.pacer.co.uk) or by calling 0118 984 5280

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