

LEDs, Optoelectronics and LED solutions

European leader in advanced
technology solutions



About Acal BFi

Acal BFi are Europe's leading provider of advanced technology solutions, operating in 12 countries throughout Europe.

We offer products across specialist technology areas, each with a dedicated pan-European sales team. Customers use our design-led expertise and expert consultation services to find the best technology solutions for their design, prototype and production needs.

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Products and support

Cables and Connectors

Embedded computing

Imaging

LEDs and lighting

Photonics

RF and Frequency control

Sensors

Electromechanical

Fibre optics

M2M and Wireless modules

Magnetic components

Power

Semiconductors

Total LED solutions

LEDs and their applications are advancing at a high pace driven by developments in LED materials, manufacturing techniques and innovation. Acal BFi constantly stay abreast of the developments that effect the LED market and therefore are well placed to update customers in a practical manner so that new and existing lighting products can benefit from fast-evolving LED technology. It is our policy to make periodic reviews with our customers, bringing innovations and improvements to their notice and suggesting ways to employ LED innovations to their benefit.

The Acal BFi opto Applications Support Team are considered by customers as a reliable, expert, knowledgeable, practical and respected partner.



Support for all LED or lighting applications

Should a customer wish to specify and buy white, coloured, infrared or ultraviolet type LEDs or have a complete LED assembly designed and built, Acal BFi have the experience, products and expertise to help. Our Applications Support Team's comprehensive knowledge in products and applications provides an invaluable service to our customers, enabling them to specify the LED or LED system to suit their budget and end use. Additionally, customers rely on us for expert support and products in the areas of drivers, optics and thermal cooling.

Acal BFi are able to call on a wide variety of in-house services and equipment to support customers as they explore and define their LED application. We have a facility with electrical, optical, thermal and EMC test equipment which allows our Engineering Team to make tests and run trials so customers can be sure a suitable LED solution is available and specified. Our pre-qualification EMC chamber and equipment, which is made available for use by our customers, has been particularly advantageous for those wishing to bring products to market in optimum timescales.

Acal BFi's in-depth knowledge of LEDs and their applications has brought the company to the forefront of the optoelectronics supply industry and has allowed customers to achieve outstanding results both in technical and commercial terms. We work in partnership with customers enabling them to bring products to market in optimum time frames, on budget and to high technical specification.

consult. design. integrate.

Custom solutions

Overview

Acal BFi's expertise and experience in concept development, design and manufacturing is second to none. Our dedication to quality at each stage and our ability to work flexibly brings a customer's ideas and requirements to fulfilment in an optimum timescale and on budget.

Acal BFi's opto team acknowledge that customers have cost constraints and that their products have performance, quality and reliability criteria to fulfil. We employ our expertise, innovation, resources and experience to satisfy customer needs, moving proactively with them from initial brief, feasibility and design to prototypes and full high- quality manufacturing that includes PCB design, manufacture and placement.

To enhance and supplement our LED engine and assembly design and manufacturing capabilities, the Acal BFi opto team provide a comprehensive logistics management service individually geared to provide customers with financial benefits, reduced stock holdings, on-time deliveries and reduced administration.

We can help with all aspects of your design and our areas of expertise include:

- High-power LEDs
- Mid-power LEDs
- COB LEDs
- LED drivers
- Lenses / reflectors
- IR drivers / controllers
- UV LEDs
- IR LEDs
- Light engines
- Thermal films
- Active cooling modules
- Custom LED solutions

Photometric test and measurement equipment

Acal BFi can offer a number of solutions for test and measurement of your light sources including complete goniometry systems for characterisation of light sources such as LEDs to complete luminaires, giving accurate measurements of beam angle, luminous flux, intensity, CRI and colour temperature. We also provide portable light meters which are ideal for fast, accurate illuminance and luminous colour measurements of single LEDs as well as larger light sources.

Design

Our engineering team can take a customer's design or develop an LED assembly from an initial brief to suit a particular application. We apply our in-depth knowledge of LEDs, PCB materials, thermal design, optics and LED driver techniques to achieve a bespoke LED design precisely matched to a customer's application.

At every stage we work in partnership with customers to ensure the design of their custom LED assembly suits their requirements and the end market.



Prototyping and design verification

To test and verify designs, when required, prototypes are built. These LED prototype assemblies allow customers to evaluate the functionality of the design. Additionally, we use prototypes to verify the functionality by making optical, thermal and electrical measurements. The tests we perform centre on the end use of the custom LED assembly, thereby verifying its suitability for purpose and performance against the original design brief and concept. Our data and conclusions are reported and discussed with the customer.



Manufacturing solutions

Acal BFi have a wide selection of manufacturing and assembly services including surface-mount assembly, auto insertion, hand assembly, conformal coating, test and inspection. These are all geared to meet the demands for custom LED assemblies. Indeed, LED light engines up to 1.6 metres in length can be built. We are also able to offer product configuration and test. All manufacturing processes and quality management are carried out in line with our ISO 9001-2008 accreditation.



Logistics management

To enhance and supplement our LED engine and assembly manufacturing capabilities, we provide a comprehensive logistics management service if required. This service is, available to customers of bespoke and standard LED services, includes:

- Stock management and automated reporting
- Ship to call offs
- Buffer stocking of both finished LED assemblies and component parts
- EDI-managed customers sales orders
- Full consignment tracking
- Vendor managed inventory (VMI)

The benefits accumulating to customers using these services include financial improvements in cash flow and profitability, reduced stock levels and reduced administration.

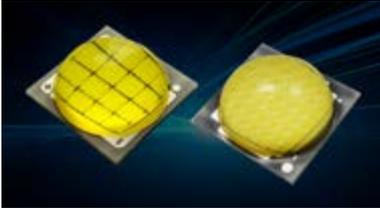


LEDs for every application



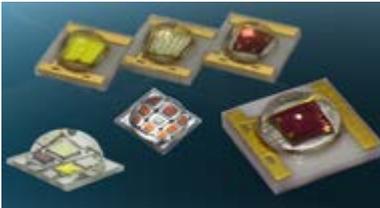
COBs (Chip on Board LEDs)

Acal BFi's Lustrous COB LEDs deliver outstanding lumen efficacies. This high-quality, reliable LM80 tested product range has been developed with price per lumens points to lead the market. All benefit from 3-step Macadam performances. RGB and CCT tuneable types are now included. XOBs are the 240 or 110 VAC mains driven types requiring no driver.



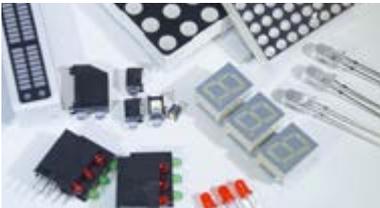
Power lighting LEDs

Our outstanding offering in mid, crossover, high and ultra-high power lighting LEDs means customers will always find a product ideally suited to their needs and budget. LM80 tested products are a given. You will find emitters with CRIs and CCT binnings to satisfy all applications. Acal BFi are real experts in the field of lighting and our engineers will find a product in our range to meet your requirements.



Colour power LEDs

These LEDs are employed in illumination for architecture agriculture, plant growth, underwater and remote phosphor. We have single-colour and multicolour (RGB, RGBW and RGBA) types to offer the designer and specifier. Our service also extends to control and drive if required.



Signal and Indicator LEDs

Acal BFi's offering in this category means customer will always find a product ideally suited to their requirements and budget. Our ranges include leaded and surface-mount from the smallest to large scale arrays. Thousands of standard products are available and Acal BFi enhance that offering with custom capabilities and expert applications advice.



UV LEDs (Ultraviolet LEDs)

We offer our customers a comprehensive and industry-leading range of UV-LEDs and UV LED arrays for use in applications such as high-precision curing, ink curing (printing), entertainment lighting and bank-note checking. An ever-developing range of products provides high- and mid-power solid state emitters with wavelengths from 360 to 420nm with lambertain and narrow beam angles.



IR LEDs (Infrared LEDs)

Infrared illuminators employing IR LEDs have uses in surveillance, night vision, and agriculture and machine vision. Acal BFi partners TSLC (Taiwan Semiconductor Lighting Corp) to offer IR LEDs with lambertain and narrow beam angles, the latter featuring built-in optics, in single and multi-die packages. Our ranges of low-, medium- and high-power emitters are highly efficient with wavelengths in the ranges 720-750nm, 840-870nm and 920-950nm.

LED accessories / measurement



Lenses and reflectors

The light from an LED needs to reach the target lit area as efficiently as possible. At Acal BFi we have years of experience of working with optical designers and manufacturers to meet the most unusual and demanding characteristics. Because we understand the end result you want to achieve, we can specify and supply the ideal optic solution.



Light shaping diffuser films

LSD® light shaping diffuser films homogenise and directionally shape light with high transmission efficiency. Available in thin rollable substrates or thicker rigid and semi-rigid sheets, these films are produced by Luminit's proprietary and patented web replication method. Acal BFi also offer a service to cut and shape the light shaping diffuser to fit customer lights.



LED drivers

Acal BFi offer an extensive range of AC/DC LED drivers and lighting power supplies for all types of LED lighting. Our driver formats include PCB mount, open frame, and enclosed types with integrity rating up to IP68. Our range includes fixed current and voltages, analogue, digital PWM and DALI dimming types and DC/DC drivers and drive-control ICs. Our experienced Engineering Team offer complete support including developing custom solutions.



Thermal management

We have 25 years of experience helping designers with thermal management to achieve reliable long-term operation in LED applications. We offer solutions based around passive thermal interface materials like KERATHERM and active solutions based on fans from Sunon. We have the facilities to validate and verify our thermal designs.



LightSpion

The portable LightSpion measurement system is a compact turnkey solution which enables you to measure any light source within a few seconds without the need for a darkroom. LightSpion features a user-friendly interface and measures luminous flux, light intensity, light efficiency, beam angle, CRI and colour temperature. The included software lets you easily create and send reports and export data to various formats such as IES and LDT.



LabSpion

The LabSpion enables fully automated measurement of any light source up to 25kg in one or more C-planes, giving you the full 3D light distribution whilst measuring luminous flux, light intensity, light efficiency, beam angle, CRI and colour temperature. The system is comprised of a full spectra spectrometry sensor and a built-in 70K/sec sample power analyser to give you a truly professional light measurement.



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