



Photocentric's vision for enabling custom mass manufacture evolves with the launch of new large format LCD printer Liquid Crystal Magna

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Photocentric, innovators in photopolymer resin and LCD printer manufacturers, introduce to the world of additive manufacturing the Liquid Crystal (LC) Magna: their new cost-effective, large format LCD printing innovation, enabling large component prototyping and custom mass manufacture at an affordable and competitively positioned price.

Large-scale accurate LCD 3D Printing enabling custom mass manufacture

LC Magna delivers the ideal combination of large build volume and accurate printing, making it the right tool for custom mass manufacture. The build volume of LC Magna is 510mm x 280mm x 350mm, making it the largest build volume LCD screen-based 3D printer currently available. LC Magna has a 23.8" 4K Ultra HD screen, offering unparalleled precision and detail when creating high resolution mass manufactured parts. The screen has been matched with a custom-built backlight. These two elements work together to ensure extremely high print accuracy, delivering amazing detail. The brightness of the backlight enables the printer to expose 100-micron layers in 8 seconds – 10 times faster than its predecessor, the Liquid Crystal Pro.

Sally Tipping, Sales Director at Photocentric said, "LCD screen-based 3D printers have been the fastest growing area in 3D resin printing; this machine sets new standards, making it best in class in almost every respect- it really is a disruptive industry-changing machine."

Dental technicians, product designers, engineers and manufacturers alike can now benefit from LC Magna's large build volume capabilities and maximise build plate capacity to increase throughput, speed up assembly production and reduce lead times. A glasses manufacturer can now mass produce 36 optical frames within 12 hours, that's less than 20 minutes for each set; a dental technician who needs a high volume of patient specific models can now print 46 flat arches in just over 1 hour – these cost less than £1.60 per arch when used with Photocentric's in-house dental model resin.



Photocentric's Daylight Magna Dental Model White resin

Robust and reliable performance

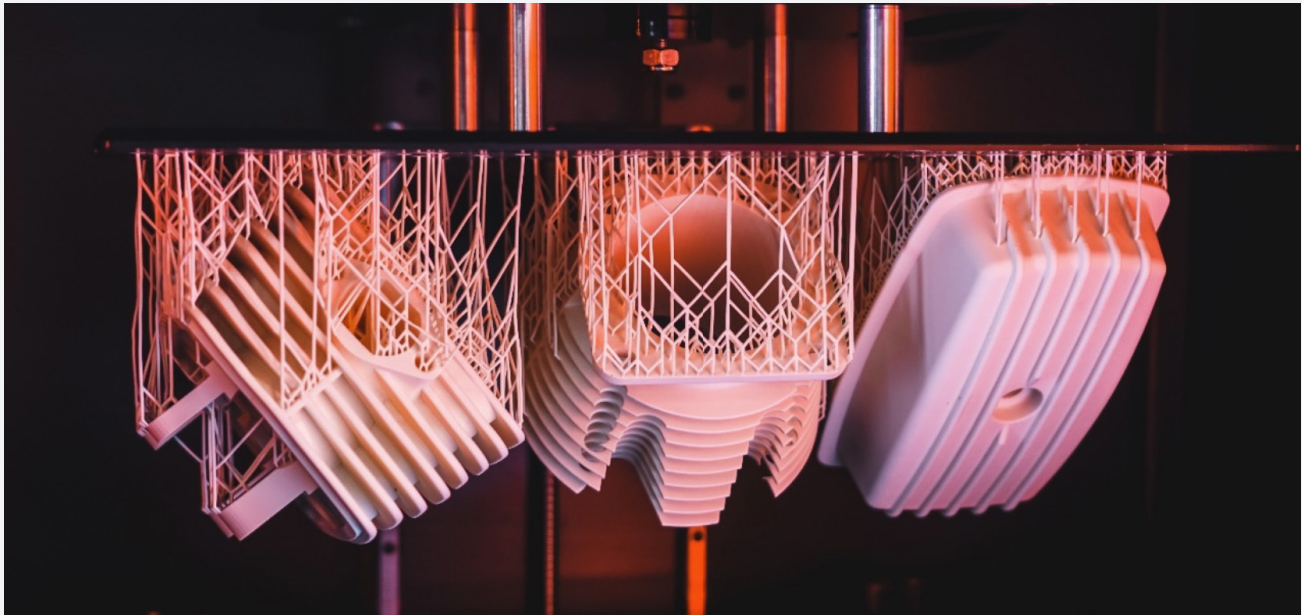
The hardware and electronics of LC Magna have been designed by Photocentric with high precision reliability in mind to ensure consistent robust performance. The patented peel release mechanism ensures low force which creates reliable parts, small support tips and very fast printing. The choice of a well-known linear drive (Hiwin) coupled with a leading motor control (Trinamic) aids precise control. LC Magna also comes with a large 7" interactive GUI aiding user control, which also facilitates the printer hardware to be used to its full potential.

Application Versatility – From large component prototyping to mass orthodontic model production.

When the printer was conceived LC Magna was intended to be used to enable large format prototyping such as electronic components, power tools, automotive parts, sports equipment etc. It offered flexibility for large format printing or small batch processing.

However, as its development progressed it became apparent that LC Magna also excelled on printing high accuracy custom parts. It was ideally suited to the dental industry as Magna's throughput of accurate orthodontic models was incredibly high in comparison to other dental 3D printers, at 46 models per hour. Delivering consistent accuracy across a massive build plate with 100% of models' tolerance at less than 100 μm and an average accuracy of within 50 μm .

LC Magna can be used for batch producing small parts such as 3D printer components, orthodontic aligners, or detailed game figurines, or for scaling up to large prototype parts such as an automotive suspension or bike stand. The advanced technology of LC Magna accommodates the evolving need of 3D printing in businesses looking to turn their digital images into physical parts more and more rapidly.



Photocentric's Daylight Magna High Tensile White resin

Materials – UK In-house manufactured photopolymer resin range

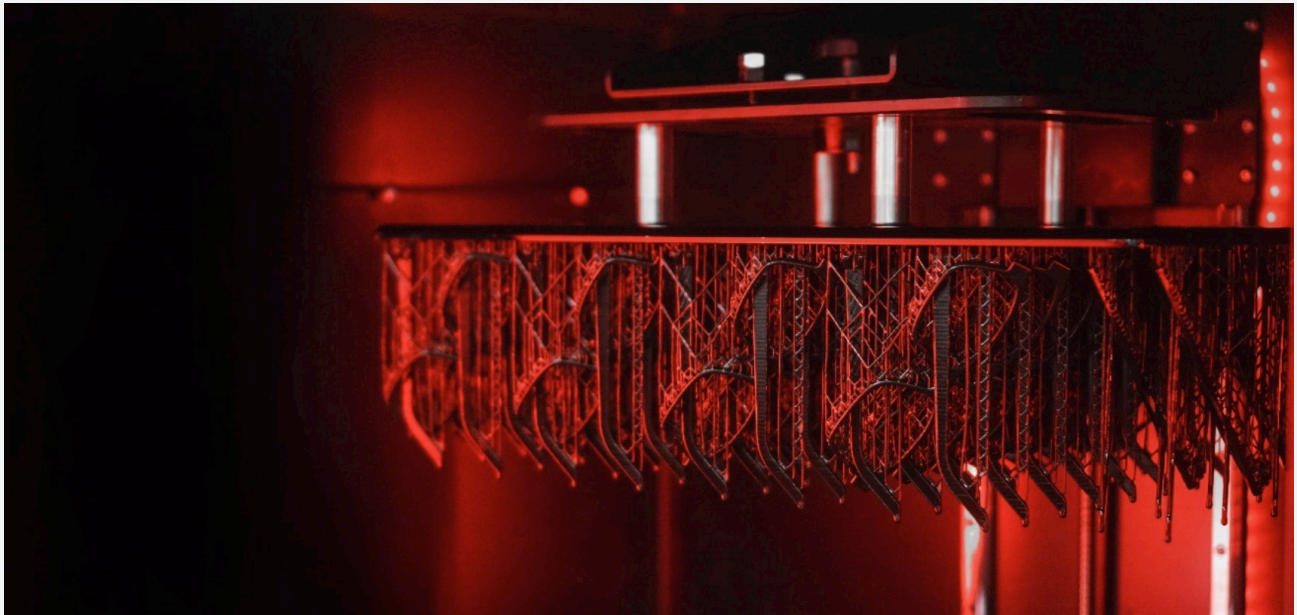
Building on the company's core expertise in the innovation of photopolymer manufacture, Photocentric's in-house team of chemists have formulated a range of Daylight photopolymer resins covering all essential applications. The photopolymer resin range includes: Daylight High Tensile White and Hard Black for prototyping, Dental White for producing orthodontic dental models and Concept Green for the creative industries to capture extra depth in high detail objects.

In Q3 2019 Photocentric will launch resins for large component investment casting resin optimised for a clean burnout, a high temperature resin for direct printing moulds (>300°C) and a tough formulation for impact resistance.

BASF and Photocentric partner to deliver functional resins for mass manufacture

Photocentric announced their partnership with BASF 3D Printing Solutions, which focuses on establishing and expanding the 3D printing business with materials, system solutions, components and services. The two companies are working together to provide solutions for specific applications to enable custom mass manufacture of functional parts in scale and at acceptable prices. This cooperation offers solutions to industries that enable processes to be made using Additive Manufacturing to replace traditional tooling methods and creating flexibility of geometry, absence of tooling costs and custom design.

This is the first step on the path in a deep relationship that will bring countless benefits to the world of additive manufacturing. BASF's Ultracur3D resins are designed for industrial use where accuracy and mechanical strength is key; the finished parts perfectly reflect high-end parts suitable for functional applications. These parts will offer the ideal combination of toughness, good elongation, high impact strength and a high modulus.



A BASF Ultracur3D Photopolymer

LC Magna pricing and availability

The use of LCD screens from mobiles, tablets through to large format TV screens is at the core of all of Photocentric's 3D printers. This enabling innovation and years of expertise in photopolymer manufacture allows Photocentric to offer a unique manufacturing solution at a fraction of the price of other options currently on the market.

LC Magna package retails at £10,995.

The LC Magna package includes the printer, 2kg of Daylight Black Hard resin, 2kg Daylight Dental Model White resin, a perpetual license of Photocentric Studio for 2 PC's and all the necessary ancillaries for 3D printing; providing the whole package to get printing straight away.

LC Magna will be available to purchase with a wash unit: Photocentric Wash. Accommodating full print volume parts, Photocentric Wash can clean parts quickly and efficiently in 3 minutes when using Photocentric's Resin Cleaner. A dedicated post-exposure unit will be available in Q3 2019.

LC Magna is shipping in June and is available for pre-order from Photocentric or through any of their distributors; Photocentric has a global distribution network covering more than 50 countries. Their global chain of distributors can be found via their website: <https://photocentricgroup.com/distributors-inside/>

Photocentric will be exhibiting LC Magna at TCT 2019 (Stand D70) in September and Formnext 2019 (Hall 11.1, F31) in November. Visitors to these shows can see LC Magna printing and learn more about its mass manufacturing capabilities.

About Photocentric

Patent holders in visible light curing technologies, specialising in photopolymerisation and inventors of LCD based 3D printing, Photocentric is an award-winning specialist resin and LCD printer manufacturer based in Cambridgeshire, UK and Arizona, USA. They manufacture an innovative range of photopolymer resins compatible with any printer operating from 355nm to 460nm, and a range of innovative 3D printers using LCD screens. Building on their vision of enabling custom mass manufacture, Photocentric will begin to release their next generation of large format LCD printers in June 2019.

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