

Liquid Crystal Titan

The largest LCD 3D printer in the world

A complete manufacturing solution

See how Titan can transform your business by requesting a free Total Cost of Ownership for your part, unlike most companies this is comprehensive with full disclosure



Printer Specifications



Extremely large print volume

695 x 385 x 1200mm
27.3 x 15.2 x 47.2"



High resolution pixel pitch

91 μ m pixel pitch delivering
outstanding surface finish



$\leq$ 86mm/hr print speed

At 350 μ m layers volumetric speed =
24 ltr/hr



Interchangeable platform with ResinGlide coating

Easy cleaning with less waste



Patented Blow-Peel technology

Ensures reliable, fast printing



Remote control and monitoring

4k time-lapse cameras



Automatic resin control

Auto vat fill and empty functions



Printing large complex automotive panels for Magna International

Magna International needed 10 large containers to hold electrical components for test vehicles. 3D printing was the only option, but large format laser SLA was too expensive, too slow and the parts wouldn't be functional in use. This is the story of some of the largest parts to be printed free radically, accurate in the z axis at +/- 0.065% average, printed on Liquid Crystal Titan.



Complete Printing Ecosystem



Step 1



Software

Software

Prepare files using Photocentric Studio or VoxelDance Additive; both perpetual licences are included at no cost

VoxelDance provides incredible flexibility, easily managing large files (>1GB) while also offering automatic supports

Upload file remotely through web UI or USB

Preloaded Titan print profiles

Step 2



Print

Step 5



Cure

Step 4



Wash

Step 3



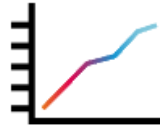
Handle

Services offered



DFAM

- Design for Additive Manufacturing consultancy
- Evaluate your part and assess its suitability for printing
- Propose design changes to reduce cost and improve printability



TCO

- Total Cost of Ownership (TCO) on your part, just supply your stl and the quantity
- Complete cost of manufacture, from part design to disposal of waste with payback



Service Plans

- 3 comprehensive service plans, Standard, Premium and Elite
- Including installation, training and maintenance
- Providing all options from budget support through to concierge service



Training

- Email and telephone support
- Online software support training in how to design for additive manufacturing
- Training in optimising the printing process



Carbon Footprint

- Carbon Footprint Analysis offered with all resins
- Embedded Carbon Calculator of each part taking your intake feeds

Tailored made wash and cure units

Photocentric Wash XL ☒ Photocentric Cure XL

Photocentric Wash XL

Three in one. Wash, rinse and dry

Photocentric Wash XL is purpose-built to effectively clean large complex parts printed on Liquid Crystal Titan, combining wash, rinse and dry functions in a single compact unit.



360° platform rotation

Adjustable speed to access all surfaces



Environmentally Friendly

Recycling option for used Photocentric Resin Cleaner 30



Smart fluid management

For water and resin cleaner flow



Multi-directional adjustable nozzles

Efficient spray cleaning of complex large parts



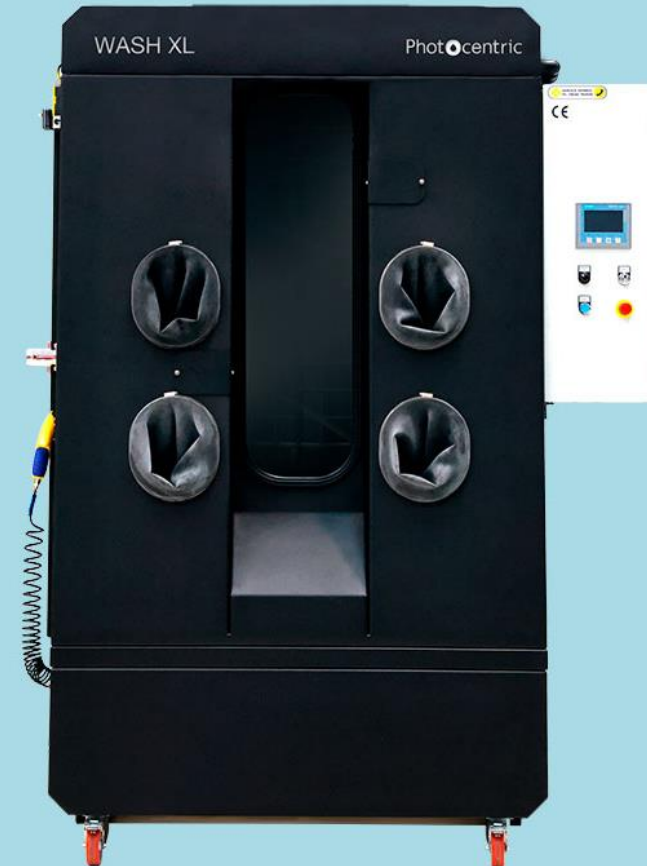
Push fit easy clip platform

Easy transfer between printer, wash and cure units



Internal light, inspection window and wipers

Interactive user interface and ergonomic design



Tailored made wash and cure units

Photocentric Wash XL ☐ Photocentric Cure XL

Photocentric Cure XL

Cure large parts with heat and dual wavelength light

Photocentric Cure XL is designed to cure parts printed on Liquid Crystal Titan. Cure XL provides uniform post-curing with dual wavelength light and evenly distributed heat with 360° platform rotation, resulting in dimensionally accurate tack-free parts.



Dual wavelengths 365 & 405nm

Optimised evenly
distributed dual
wavelength light



Heating function up to 60°C (140°F)

Evenly distributed with
smart fume extraction and
inspection window



Adjustable speed 360° platform rotation

Curing on-platform parts
evenly



Interactive user interface

Optimised part-dependent
curing process



360° rotating lower glass turntable

Cure off-platform parts
evenly



Push fit easy clip platform

Easy transfer between
printer, wash and cure
units

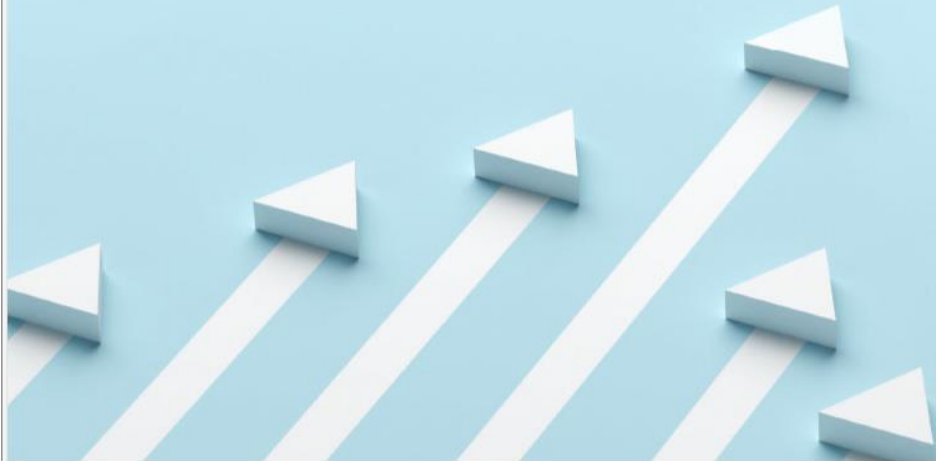


Titan advantages

Titan creates the largest, highest resolution parts, most rapidly and cost effectively

Wide range of resins; tough, hard, investment casting and elastomeric

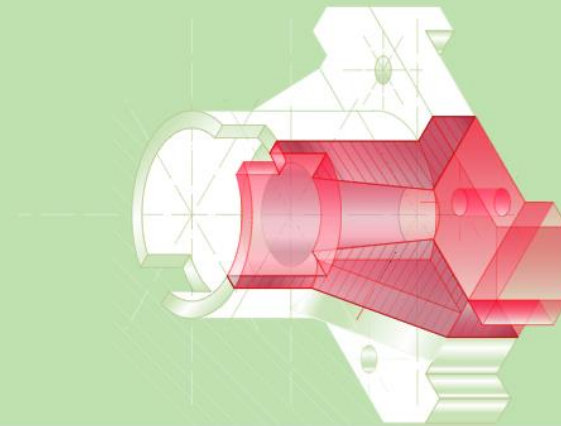
Creates massive stunning parts



Part making support and Titan Service

We pride ourselves on our customer service and guarantee you print successfully.

We have the most experience of printing with LCD screens of any company. All Titan customers can access this knowledge. We will orientate and support your part for you using the latest Voxel Dance software and give you advice on how to make your part most efficiently.



Printer comparison

Why buy Titan?

LCD is now accepted as the superior technology for resin printing, even entrenched DLP and laser manufacturers have now been won over. A major benefit of using screens is that they cure over the entire area simultaneously, which increases as you get larger in format.

Bottom-up printing requires minimal resin to operate, simplifies processing and there is no risk of the tank going off. Free radical polymerisation gives you the widest range of functional materials, including elastomers.

Titan is an open system with a wide variety of Photocentric and BASF validated resins.

IP secure, operates without internet connection.

Complete processing system with Carbon analysis, TCO, full software and maintenance.

UK manufactured with dedicated highly experienced service department ensuring success.

Printer	Technology	Resolution XY	Resolution Z/layer Thickness	Build Volume WxDxH	Vol Litres	Peel-release Technology	Fastest reliable rate of print volume	Open / Closed System	Processing Solution	Printer Price	Resin Price /kg	Total Cost of Ownership	Printed Part Cost
Photocentric LC Titan	LCD	91µm	350-50µm	685 x 385 x 1200	316	Patented Blow Peel	★★★★★	Open	Designated wash and cure units	\$95,000	\$40-80	Low	Very Low
Massivit	UV Gel Extrusion	N/A	1500-500µm	1450 x 1110 x 1800	2897	Top Down UV Extrusion	★★★	Closed	Surface finishing required	Starts from \$300,000	\$100	High	Moderate
3D Systems 750	SLA	Max 2000dpi	100µm	750 x 750 x 550	309	Top Down SLA	★★★	Closed	Designated cure unit	Starts from \$400,000	\$100-450	High	High
Hp	MJF	1200dpi	90µm	380 x 284 x 380	41	Self Supports	★	Closed	Designated depowder/cure	\$350,000-500,000	\$35-60	High	Very low
Kings 800Pro	SLA	75-800 µm (Variable Beam)	50-150µm	800 x 800 x 500	320	Top Down SLA	★★★	Open	Requires 3rd party solution	\$100,000	\$40-80	Low	Very Low
Stratasys Neo 800	SLA	150-600µm	100µm	800 x 800 x 600	384	Top Down SLA	★★	Open	Designated cure unit	\$250,000	\$204	High	High

The accuracy of parts printed on Titan

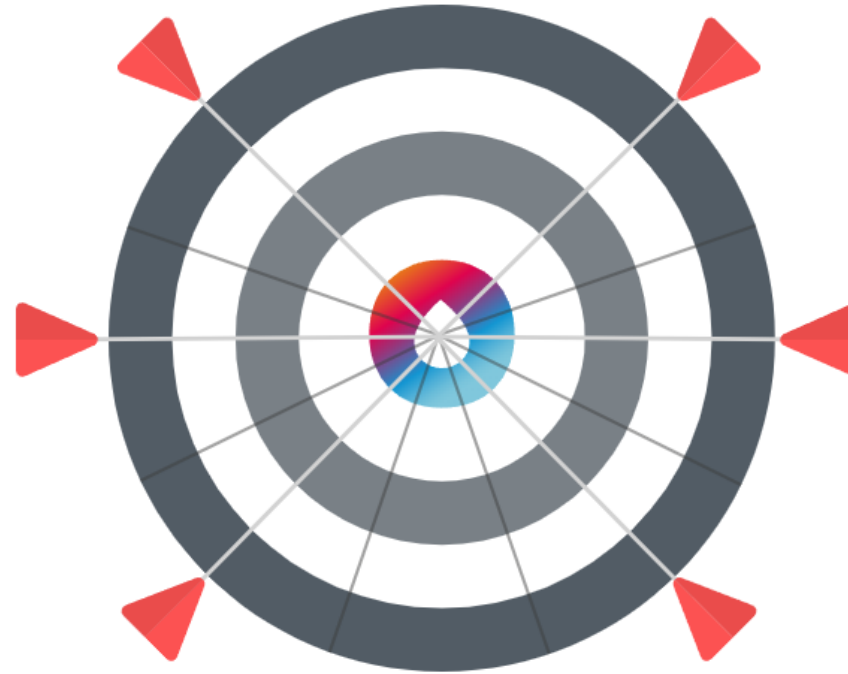
Titan is a remarkable printer, and it will deliver accurate, precise and consistent parts if you understand how to use it correctly and adopt the recommended digital file modification.

When using high resolution LCD screens 460nm polymerisation allows consistent and repeatable cure through depth, across the build area and across different Titan printers.

Titan compared to other manufacturing methods

Aspects impacting Titan's printing tolerances, accuracy and precision

How we test accuracy on Titan



Titan has an 8K screen which provides a $91\mu\text{m}$ pixel pitch across its entire 695mm (27.3") by 385mm (15.2") build area. One benefit of using large LCD screens is that they remain fixed in the same position, this means the high-resolution LCD light mask will deliver the same curing profile today as it will in years to come, never going out of focus or alignment. This ensures reliability in the x:y plane. Titan is equipped with a highly accurately engineered linear drive and control system, which ensure reliable and precise performance in the z direction, and hence in overall build volume.