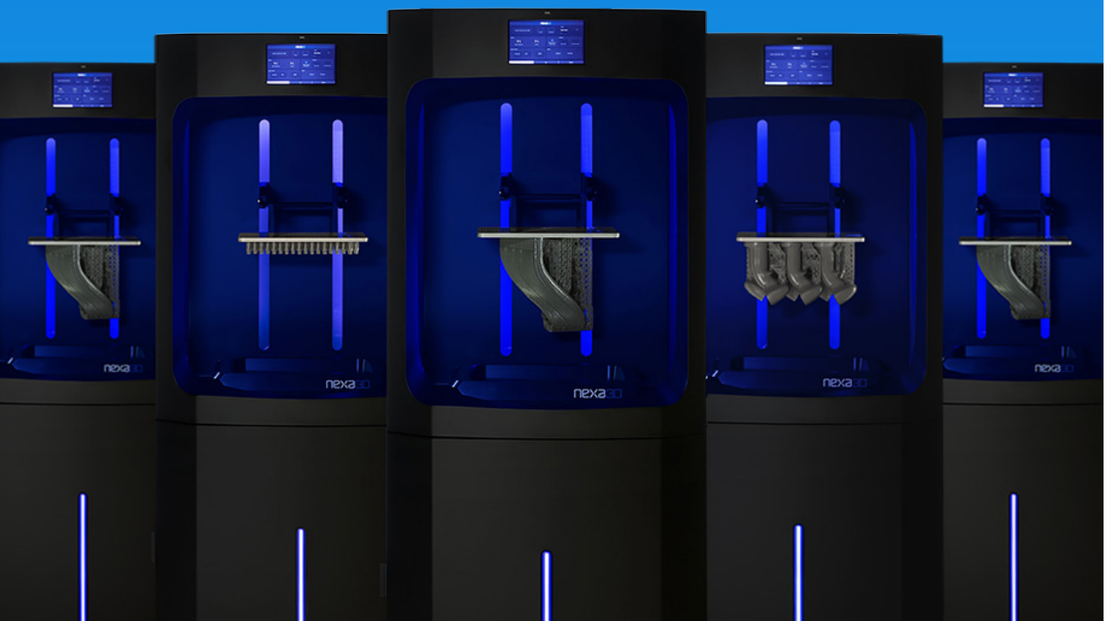
2022 Material Guide for Ultrafast 3D Printing

Contents

Introduction

Lubricant Sublayer Photo-curing (LSPc) 3D printing technology, coupled with high performance materials enables 20x productivity gains. This guide will give you an overview of a broad range of currently validated materials.



At Nexa3D, we are delivering a new class of ultrafast production-grade polymer 3D printers that makes it possible for you to use the same technology throughout your product life cycle, from rapid design and prototyping iterations all the way through series production at scale. As a product company ourselves, we experienced first-hand the pain points that have held back adoption of production 3D printers for the past two decades – low productivity, inconsistent performance, and poor yields. So, we developed a new class of ultrafast photopolymer printers resulting in up to 20x productivity gains across the entire design and manufacturing cycle.

As product engineers, we know first-hand that it's all about getting parts at scale fast, cost-effectively, and with the desired mechanical properties. So, we developed a disruptive open platform model, attracting all the leading polymer suppliers. We formed collaborations with the world's leading material suppliers including Henkel, BASF, Covestro, Evonik, and Arkema, unlocking the full potential of performance polymers tailored for faster, more economical design cycles and series production. Our printers deliver process stability with built-in process monitoring enabling production scaling with unmatched yields print after print. We combine process and geometry algorithms with sensor data and validated workflows that together open the aperture of photopolymer resins' speed and performance-achieving economics, comparable to injection molding. Our Lubricant Sublayer Photo-curing (LSPc) technology minimizes supply chain and part count complexities, reduces lead times, and substantially lowers costs typically associated with tooled plastics.

General Purpose

x45-Natural

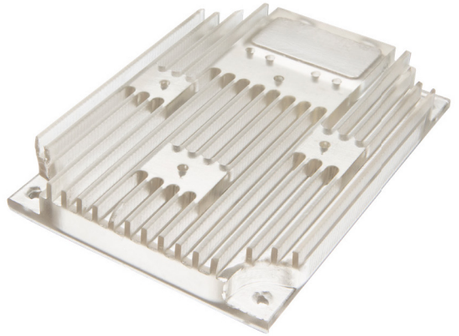
A tough material that is ideal for models and functional prototypes requiring high strength and durability. Capable of much higher print speeds than current materials, x45-Natural features excellent out-of-printer properties with robust print styles to ensure high first-time build success. Supporting a wide variety of applications with short processing times, x45-Natural's draft build mode offers companies greater flexibility within their manufacturing processes.

Characteristics

- Draft build mode enables remarkable build speed
- Robust print styles ensure high first-time build success
- Excellent out-of-printer properties and multiple colors support a wide variety of modeling and prototyping applications

Uses

- Fast turnaround modeling and prototyping
- Models and prototypes requiring good optical clarity or matte black finish
- Functional prototypes requiring good strength and toughness



Property/Test	Value
Tensile Modulus/ASTM D638	>1.6 GPa
Ultimate Tensile Strength/ASTM D638	>52 MPa
Tensile Elongation at Break/ASTM D638	>12%
Flex Modulus/ASTM D790	>2.1 GPa
Flex Strength/ASTM D790	>95 MPa
Hardness (shore D) ASTM D2240	85
Notched Izod/ASTM D256	20 J/m
Water Absorption/ASTM D570	6%

General Purpose

x45-Clear

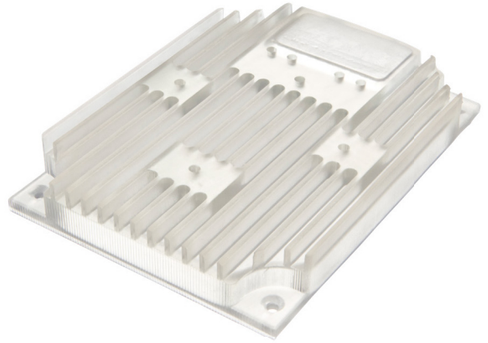
Combines good clarity with toughness for a wide variety of models and functional prototypes requiring fast turnaround times. x45-Clear has outstanding build speed to give companies greater adaptability within their manufacturing processes. x45-Clear has excellent out-of-printer properties with robust print styles to ensure high first-time build success.

Characteristics

- Draft build mode enables remarkable build speed
- Robust print styles ensure high first-time build success
- Excellent out-of-printer properties and multiple colors support a wide variety of modeling and prototyping applications

Uses

- Fast turnaround modeling and prototyping
- Models and prototypes requiring good optical clarity or matte black finish
- Functional prototypes requiring good strength and toughness



Property/Test	Value
Tensile Modulus/ASTM D638	>1.6 GPa
Ultimate Tensile Strength/ASTM D638	>52 MPa
Tensile Elongation at Break/ASTM D638	>12%
Flex Modulus/ASTM D790	>2.1 GPa
Flex Strength/ASTM D790	>95 MPa
Hardness (shore D) ASTM D2240	85
Notched Izod/ASTM D256	20 J/m
Water Absorption/ASTM D570	6%

General Purpose

x45-Black

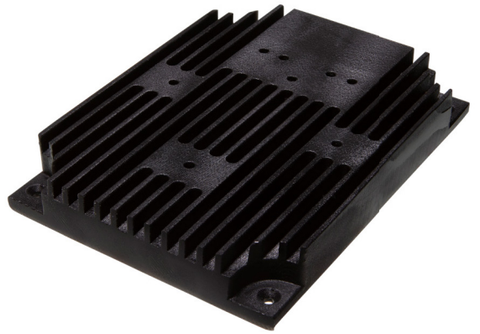
A durable material that features an attractive matte black finish for parts such as automotive components that are usually molded in black plastic. It combines build speed and excellent out-of-printer properties to ensure first-time build success, giving manufacturers greater flexibility within their output processes.

Characteristics

- Draft build mode enables remarkable build speed
- Robust print styles ensure high first-time build success
- Excellent out-of-printer properties and multiple colors support a wide variety of modeling and prototyping applications

Uses

- Fast turnaround modeling and prototyping
- Models and prototypes requiring good optical clarity or matte black finish
- Functional prototypes requiring good strength and toughness



Property/Test	Value
Tensile Modulus/ASTM D638	>1.6 GPa
Ultimate Tensile Strength/ASTM D638	>52 MPa
Tensile Elongation at Break/ASTM D638	>12%
Flex Modulus/ASTM D790	>2.1 GPa
Flex Strength/ASTM D790	>95 MPa
Hardness (shore D) ASTM D2240	85
Notched Izod/ASTM D256	20 J/m
Water Absorption/ASTM D570	6%

General Purpose

xPRO410

Rigid photoplastic that prints parts with extreme accuracy and an exceptional surface finish. Formulated based on Henkel's LOCTITE® PRO410 polymer and optimized for Nexa3D's NXE 400 3D printer, the material is ideal for general purpose prototyping and series production.

Characteristics

- Mid-range stiffness
- Fast build speed
- Excellent accuracy and aesthetics
- Lower part cost

Uses

- Quick design verification models
- Display models
- Models where accuracy and resolution are critical

Property/Test	Value
Tensile Modulus/D638	2365 MPa
Ultimate Tensile Strength/D638	41.6 MPa
Tensile Elongation at Break/D638	5.46 %
Hardness (Shore D)/D2240	79
Notched Izod/D256	25 J/m
HDT @0.45 MPa/D648	61°C

Elastomers

xFLEX475-White and xFLEX475-Black

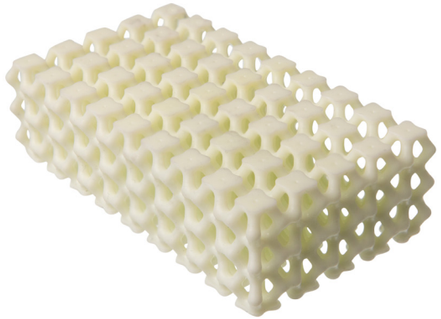
A medium soft rubber-like material that cures to a soft, elastomeric finish. Customers can use this industrial strength material in applications that require resilience, snap back, and tear resistance, such as pipes and manifolds, handles and grips, seals and gaskets, or sportswear and footwear midsoles. This material also boasts an impressive 150 percent elongation at break, an excellent energy return of up to 50 percent, and resistance to most solvents. The xFLEX material comes in two colors: black and white.

Characteristics

- Soft elastic
- Single component with low viscosity

Uses

- Resilience, snap back and tear resistance elastomeric application



xFLEX475-White

Property/Test	Value (2x30min in xCure with Water)
Tensile Modulus	4.6 ± 0.8 MPa
Ultimate Tensile Strength/ASTM D638	3.8 ± 0.8 MPa
Tensile Elongation at Break/ASTM D638	158 ± 2.7 %
Energy Return/Internal	39%
Tear Strength/ASTM D624	11.77 ± 1.3 kN/m
Hardness (shore A)/ ASTM D2240	55A

xFLEX475-Black

Property/Test	Value (2x30min in xCure with Water)
Tensile Modulus	3.73 ± 0.5 MPa
Ultimate Tensile Strength/ASTM D638	2.48 ± 0.3 MPa
Tensile Elongation at Break/ASTM D638	150%
Energy Return/Internal	46.5%
Tear Strength/ASTM D624	7.3 kN/m
Hardness (shore A)/ ASTM D2240	55A

Engineering Grade - Tough

xPP405-Black

A tough, impact-resistant material with a modulus similar to molded unfilled polypropylene. Exhibits excellent weathering characteristics and UV stability making it suitable for end-use part applications.

Characteristics

- Tough, impact-resistant material with a modulus similar to molded unfilled polypropylene
- Good weathering
- Smooth black surface finish

Uses

- Design verification models
- Functional prototypes
- End-use parts including packaging, piping, and consumer and industrial applications, including large housings and enclosures

Property/Test	Value
Tensile Modulus/ASTM D638	1300 ± 33 MPa
Ultimate Tensile Strength/ASTM D638	35 ± 2 MPa
Tensile Elongation at Break/ASTM D638	100 ± 12 %
Flex Modulus/ASTM D790	1300 ± 65 MPa
Flex Strength/ASTM D790	45 ± 1 MPa
Hardness (Shore D)/ASTM D2240	80
Notched Izod/ASTM D256	62 ± 2 J/m
HDT @0.45 MPa/ASTM D648	52.8°C
Water Absorption/ASTM D570	1.00%

Engineering Grade - Tough

xPP405-Clear

A tough, impact-resistant material with a modulus similar to molded unfilled polypropylene. Exhibits excellent weathering characteristics and UV stability making it suitable for end-use part applications.

Characteristics

- Semi-rigid with modulus and good toughness like unfilled polypropy
- Good weathering
- Attractive frosted clear finish that can be finished to high optical clarity

Uses

- Design verification models especially where clarity is desirable
- Functional prototypes especially where clarity is desirable
- Fluid flow evaluation models where clarity is essential
- End-use parts including packaging, piping and consumer and industrial applications, including large housings and enclosures

Property/Test	Value
Tensile Modulus/ASTM D638	1300 ± 23 MPa
Ultimate Tensile Strength/ASTM D638	35 ± 4 MPa
Tensile Elongation at Break/ASTM D638	100 ± 18 %
Flex Modulus/ASTM D790	1300 ± 76 MPa
Flex Strength/ASTM D790	45 ± 2 MPa
Hardness (Shore D)/ASTM D2240	79
Notched Izod/ASTM D256	65.27 ± 3 J/m
HDT @0.45 MPa/ASTM D648	53°C
Water Absorption/ASTM D570	2.00%

Engineering Grade - Tough

xABS3843

Tough and durable material with the aesthetics of injection molded black ABS. High performance, high modulus material boasting excellent flexural and tensile physical properties with a relatively high degree of elongation. It displays high green strength and good heat deflection temperature enabling it to print accurately and function in a wide variety of applications. It has been tested in QUV exterior weathering conditions (ASTM G-154) for 800 hours with less than a 15% change in Tensile and IZOD Impact properties. Complete Technical Data Sheet available here.

Characteristics

- ABS-like stiffness
- Tough & durable
- Great feature detail

Uses

- Design verification models
- Functional prototypes
- Snap fits
- Jigs and fixtures
- Patterns
- End use parts
- Good weathering performance

Property/Test	Value
Tensile Modulus/ASTM D638	1,400 ± 52 MPa
Ultimate Tensile Strength/ASTM D638	32 ± 1 MPa
Tensile Elongation at Break/ASTM D638	50 ± 8 %
Flex Modulus/ASTM D790	1,400 ± 130 MPa
Flex Strength/ASTM D790	30 ± 1.3 MPa
Notched Izod/ASTM D256	53.8 ± 3 J/m
HDT @0.45 MPa/ASTM D648	56°C
Water Absorption/ASTM D570	2.35%

FLYER Slashes Production Time by 48%

Improved speed, better surface quality, and reduced time to market.

“Our e-bike components have a lot of structural complexities to them. We needed a 3D printer that could reliably meet tight tolerances and help streamline our design process.”

Berthold Jonientz
FLYER

Background

The Swiss company FLYER develops and manufactures premium Swiss quality FLYER e-bikes, which have been on the market since 1995. Development at FLYER is based on innovation, a love of detail, painstaking care, and an eye for design. This e-bike pioneer offers e-bikes for every need: from classic low step-through frames, to city bikes and sporty e-mountain bikes. In a pioneering role, FLYER has amassed a wealth of solid experience, and has had a considerable impact on and contributed to the success of e-bikes in Europe. This know-how is integrated into their products and services every single day.

Challenge

In order to support the company’s growth, FLYER saw a need to upgrade to an industrial stereolithography (SLA) style printer that could yield more parts, with a smooth, detailed surface finish, at faster speeds.

Solution

Design and production time decreased by **48%**. FLYER was also able to cost-effectively achieve faster design iterations and bring their innovative designs to market sooner.

Results

- Design and production time decreased by 48%
- Accurate prints with better surface resolution
- Accelerated time to market
- Faster design iterations

Engineering Grade – Heat Resistant

xCE-White and xCE-Black

High stiffness and temperature materials with the aesthetics of injection molded nylons, polyesters, polyamides and polyimides.

Characteristics

- High-performance plastic stiffness
- High temperature
- Durable, resistant to chemicals

Uses

- Functional prototypes subject to higher temperature evaluations
- Low volume injection molding inserts for lower temperature plastics
- End use parts

Property/Test	Value
Tensile Modulus/ASTM D638	2.84 ± 0.13 GPa
Ultimate Tensile Strength/ASTM D638	69 ± 2MPa
Tensile Elongation at Break/ASTM D638	8.0 ± 0.4%
Flex Modulus/ASTM D790	3250 MPa
Flex Strength/ASTM D790	135 MPa
Hardness (Shore D)/ASTM D2240	89
Notched Izod/ASTM D256	20 J/m

Engineering Grade – Heat Resistant

xPEEK147

A stiff, heat-resistant material with a HDT of 230°C similar to many PAEK thermoplastics like PEEK. Exhibits excellent long-term stability at temperatures exceeding 100°C making it suitable for prototypes and end-use parts subjected to high temperatures and fast tooling for plastic molding.

Characteristics

- High heat deflection temperature
- High stiffness with good dimensional stability
- Good surface finish

Uses

- High performance prototypes or end use parts requiring high temperature capability and long-term thermal stability
- Tools and molds requiring good surface and long-term thermal stability >125°C

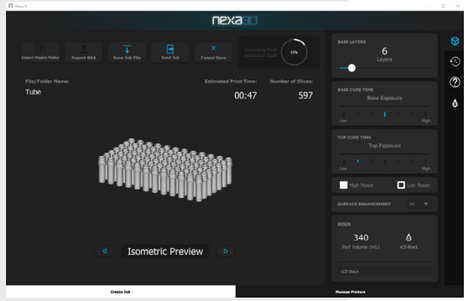
Property/Test	Value
Tensile Modulus/ASTM D638	3192 ± 35 MPa
Ultimate Tensile Strength/ASTM D638	75 ± 2.0 MPa
Tensile Elongation at Break/ASTM D638	3%
Flex Modulus/ASTM D790	3168 ± 33 MPa
Flex Strength/ASTM D790	128 ± 17 MPa
Hardness (Shore D)/ASTM D2240	94
Notched Izod/ASTM D256	14.6 J/m
HDT @0.45 MPa/ASTM D648	238°C
Water Absorption/ASTM D570	0.25%

Optimiz3D Uses the NXE 400 to Deliver Prototypes in One Day and Eliminate Tooling Costs

Cost savings, a fast production start, and the flexibility to implement later design modifications without expensive tooling changes.

"The NXE 400 has given our business and our customers a real advantage. They are able to evaluate their designs faster, modify their designs easier, and even run small series production with us at record speeds."

Miha Koprivec
Director, Optimiz3D



Background

Optimiz3D is a start-up contract manufacturer with the plan to not only offer traditional CNC machining services, but to also offer higher value manufacturing and fast turnaround times. They do this by specializing in both 5-axis CNC manufacturing and 3D printing services.

Their services include on-demand production of prototypes, short-run manufacturing as well as custom production applications.

Challenge

To maximize productivity and yield while also producing high-quality parts in less time with high machine utilization.

Solution

We used xCE-Black material which has excellent mechanical properties and high temperature resistance. The main benefit of 3D printing is the zero tooling cost, thus lifetime project cost is smaller than in the case of injection molding.

Results

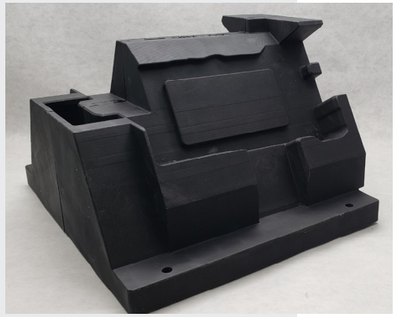
- Over €7,500 cost savings when compared to injection molding
- Lead time reduced from weeks to days
- Small series production with ultrafast print speeds

Motorola Solutions: Prototypes Produced Within Minutes

How Motorola Solutions is Speeding Things Up with the NXE 400.

"We have been working with the Nexa3D team for almost a year now, and they have taken a lot of feedback and implemented lots of very positive changes to the machine and software in a really short period of time. The machine and software get better with every update. The speed and quality of parts still blows my mind every time I run it. I am extremely pleased with the NXE 400, and it is a great addition to our in-house capabilities."

Peter Edwards
Lead AM Technology Manager
Motorola Solutions



Background

As a global leader in mission-critical communications and analytics, Motorola Solutions utilizes 3D printers for the design and development of highly sophisticated communications devices for professional and mission-critical markets in the commercial, government and industrial segments. Their AM capabilities are an essential part of their product development process and allow for the design flexibility they need for a wide range of parts.

Challenge

When it came to their larger, complex designs, such as a housing enclosure, they were running into several issues. First, their build time was increasing due to the limited amount they could yield in one build. Secondly, some of their larger designs couldn't fit their current build platforms. Lastly, their FDM machines produced stair-stepped surfaces that required additional steps to remove layer lines.

Solution

Motorola Solutions identified several industrial-sized SLA printers to test against their size requirements, materials, and design. At the end of their evaluation, none were able to match the speed, durability, accuracy, and build area of the NXE 400. The cost of ownership for the NXE 400 was straightforward and was going to ultimately help them remain profitable and reduce costs.

Results

- Highest speed in the industry
- Smooth surface finish
- Large build volume
- Optimized production processes

DMM: Largest 3D Printing Service Bureau in Japan Drastically Reduces Lead Time By 50%

Previous lead times of 1-2 weeks were now being quoted at just 2-3 business days.

"We have been tracking Nexa3D's development for more than a year, and we are still wowed when watching its remarkable speed. Nexa3D's speed is analogous to the introduction of 5G wireless–it will enable engineers to develop new applications and workflows that would have been unachievable in the past. And, watching detailed parts get created in minutes definitely feels like the future."

Douglas Krone
Founder Brulé

Background

DMM is the largest 3D printing service bureau in Japan. They are a full-service agency that offers a variety of solutions including cloud-based contract modeling services, 3D printing consultation, rental services, and complete operation. They print more than 1.5 million parts a year on a fleet of 50+ industrial printers that utilize a wide range of materials such as advanced plastics, resins, and metals.

Challenge

Although DMM has a vast network of industrial 3D printers with a variety of capabilities, their current selection of printers could not meet the turnaround time and quality requirements of some of their customers.

Solution

Ultrafast speed and reliable quality were DMM's top two requirements when it came to evaluating potential printers. They turned to their trusted 3D printer supplier Brulé to help them with their search. With Brulé's extensive 3D printer experience and knowledge, they were able to confidently recommend Nexa3D's NXE 400 3D printer as the best contender for their needs.

Results

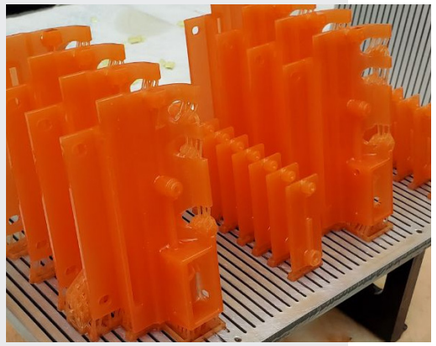
- Reduced lead times by more than 50%
- Reliable quality parts
- Significant productivity gains
- Improved competitiveness

HAUX-LIFE-SUPPORT Uses the NXE 400 to Break the Speed and Size Barriers

6 times the speed and 2.5 times the volume compared to all other comparable 3D printers on the market.

"With Nexa3D's innovative NXE 400, we were able to produce functional end use parts at a very high speed with great precision and reliability."

Mr. Paul Ziegenhagel
HAUX-LIFE-SUPPORT



Background

Since its founding in 1980, HAUX-LIFE-SUPPORT has stood for outstanding technical performance, innovation, quality, and reliability. The company develops and manufactures state-of-the-art systems and equipment, provides tailor-made solutions for customers, and has more than 1,500 hyperbaric HAUX systems delivered worldwide. Over the past almost 4 decades, HAUX-LIFE-SUPPORT has become the world market leader in the fields of medical, tunneling, and diving technology.

Challenge

The company had a set of standard parts, but needed many individual parts (1-500) to finish the project, and many of these parts were very complex and needed to be 3D printed.

Solution

Nexa3D's unique LSPc technology breaks the speed barrier by actively overcoming the traditional speed limiting factors of traditional SLA without compromising accuracy and resolution.

Results

- Highest speed in the industry
- Injection molded-like accuracy
- Surface resolution
- Ease of use

Dental

KeyModel Ultra

Model material for thermoforming and removal die and model application.

Characteristics

- Accurate
- Easy thermoforming release
- Flawless detail
- Carve-able without chipping

Uses

- Dental thermoforming application (100µm)
- Dental removal die and model application (50µm)

Property/Test	Value
Tensile Modulus/D638	>1700 MPa
Ultimate Tensile Strength/D638	>50 MPa
Tensile Elongation at Break/D638	5%
Flex Modulus/D790	>1940 MPa
Flex Strength/D790	>70 MPa

Dental

KeySplint Soft

Splint material for splints, night guards and bleaching trays.

Characteristics

- Biocompatible
- Strong
- Flexible
- Easy to polish
- Easily cleaned

Uses

- Splints, night guards and bleaching trays (100µm)

510K Compliance

- This material has been validated as ***Keystone Compatible*** by Keystone Industries.
- Its specific workflows have been validated as compliant with Keystone Industries 510K filings and Keystone Industries guarantees that customers can produce safe and effective medical devices with a Nexa3D printer if the approved workflow is followed.
- See here for more information.

Property/Test	Value
Tensile Elongation at Break/D638	>110%
Flex Modulus/ASTM D790	1,100–1,400 MPa
Flex Strength/ASTM D790	44–47 MPa
Flex Modulus/ISO 20795-2	135–200 MPa
Flex Strength/ISO 20795-2	2.6–4.4 MPa
Hardness (Shore D)/ASTM D2240	80–85
Sorption/ISO 20795-2	<18 µg/mm^3
Solubility/ISO 20795-2	<4.8 µg/mm^3
Free Monomer Extraction	<2.2%
Cytotoxicity/ISO 10993	Pass
Irritation/ISO 10993	Pass
Sensitization/ISO 10993	Pass

Dental

KeyGuide

Guide material for surgical guides.

Characteristics

- Biocompatible
- Strong
- Easy to polish
- Autoclavable

Uses

- Surgical guides (100µm)

Property/Test	Value
Flex Modulus/ASTM D790	2400 MPa
Flex Strength/ASTM D790	106 MPa
Biocompatibility/ISO 10993-5	Pass
Biocompatibility/ISO 10993-10	Pass

510K Compliance

- This material has been validated as ***Keystone Compatible*** by Keystone Industries.
- Its specific workflows have been validated as compliant with Keystone Industries 510K filings and Keystone Industries guarantees that customers can produce safe and effective medical devices with a Nexa3D printer if the approved workflow is followed.
- See here for more information.

Dental

KeyTray

Tray resin for creating customized impression trays.

Characteristics

- Biocompatible
- Strong
- No preliminary casting required
- Improved impression accuracy
- Compound waxes and border molding materials will adhere to tray

Uses

- Customized impression trays (100µm)

510K Compliance

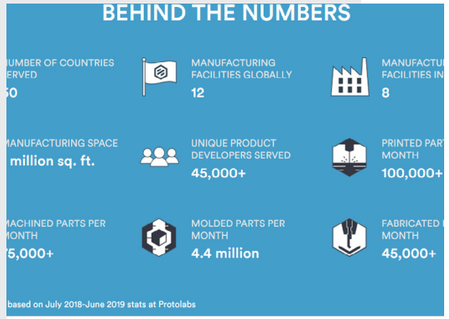
- This material has been validated as ***Keystone Compatible*** by Keystone Industries.
- Its specific workflows have been validated as compliant with Keystone Industries 510K filings and Keystone Industries guarantees that customers can produce safe and effective medical devices with a Nexa3D printer if the approved workflow is followed.
- See here for more information.

Property/Test	Value
Tensile Modulus/ASTM D638	2056 MPa
Ultimate Tensile Strength/ASTM D638	62.1 MPa
Tensile Elongation at Break/ASTM D638	26.4%
Flex Modulus/ASTM D790	1913 MPa
Flex Strength/ASTM D790	84.7 MPa
Hardness (Shore D)/ASTM D2240	86.5

Keystone Industries Breaks Dental Productivity Barriers with NXD 200

“This is the definition of higher throughput. If you run the printer all day, you’re looking at over 200 splints in an eight-hour day, while most other dental printers would need significantly more time to achieve that volume of parts.”

Benjamin Taylor
3D Printing Engineer and Lab Manager
Keystone Industries



Background

Keystone Industries manufactures thousands of dental products as well as its own KeyPrint line of photopolymer 3D printing resins. Its group of dental companies focuses largely on consumable digital, laboratory, and preventative products. The company is a global supplier, maintaining a diverse network of more than 800 US and international dental distribution partners in more than 70 countries.

All of its liquid resins are designed for use with the Digital Light Processing (DLP) process, which cures the part using a UV image. Keystone’s KeyPrint resins cover a wide range of dental applications such as splints, models, surgical guides, and indirect bonding trays.

Challenge

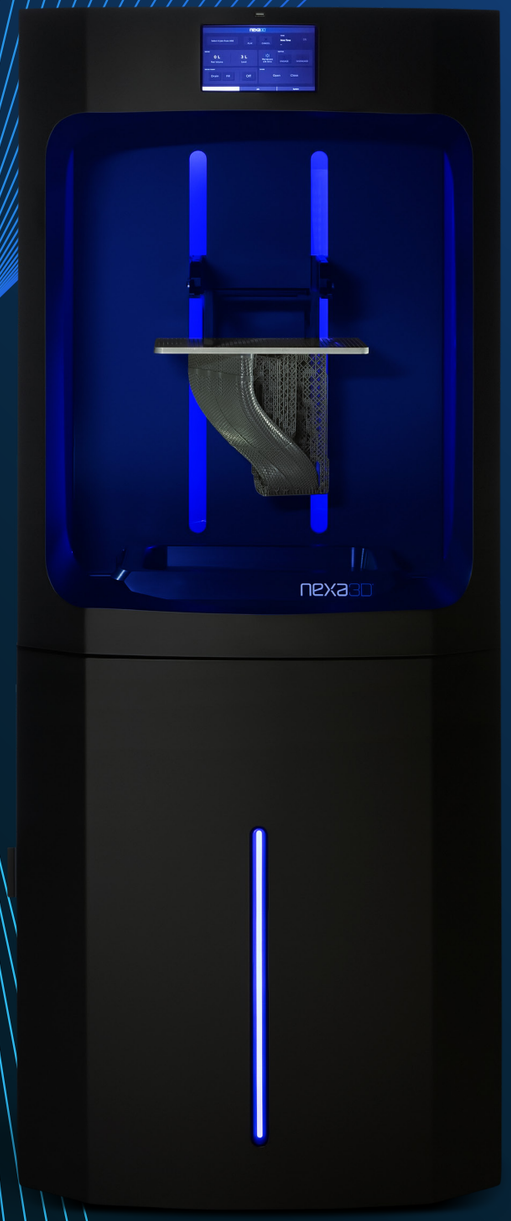
Meet high-volume throughputs demanded by busy dental labs without the added expense, maintenance, and space required by acquiring additional 3D printers.

Solution

Nexa3D’s NXD 200, with the largest build volume of any dental 3D printer on the market, allowed Keystone to print more products at one time. The NXD 200 platform combines a build volume of 8.5 liters (measuring 10.8 in x 6.1 in x 7.8 in), extreme print uniformity, modular design for onsite automation, 4K resolution, and intelligent print optimization software.

Results

- A KeyPrint user can print 32-36 full arch splints (depending on the print orientation) with the KeySplint Hard resin in 76 minutes, and 16 flat dental models with KeyModel Ultra resin in less than 30 minutes.
- One NXD 200 print job can print what it would take two competing DLP 3D printers to print
- Greater output and increased profitability for busy dental labs



Photopolymer Printer

NXE 400

With an unprecedented 16L build volume measuring 10.8 x 6.3 x 15.7 in (27.5 x 16 x 40 cm), intelligent optimization, and Nexa3D's revolutionary patented LSPc technology, the NXE 400 is the perfect printer for any industrial application.

2.5x Larger Build Volume

The NXE 400 features more than double the build volume compared to currently available technologies, allowing for much larger parts, higher part throughput, and ultimately lower part cost, all with higher-resolution pixels (75 µm) and isotropic prints.

Manufacturing Ready + Modular Design

In addition to our highly reliable LSPc technology, the NXE 400 is crafted to be completely modular in design for easily interchangeable parts and technology upgrades, eliminating hardware obsolescence.

Next-Gen Software + Predictive Service

Nexa3D's internally developed intelligent software connects our hardware and materials together into a powerful, user-friendly system while providing a new era of predictive and prescriptive service. It's as simple as pressing CRTL+P.

Photopolymer Printer

NXE 200

Exceptional speed and productivity in an affordable industrial 3D printer.

Precision high speed additive manufacturing

With the patented LSPc™ Technology you can print up to 6.5x faster for ultrafast production of accurate, repeatable parts.

Large, versatile build volume

10.8 x 6.1 x 7.8 inch (275x x 155 x 200 mm)

Robust, high-performance materials portfolio

The NXE 200 is open source and compatible with various resin materials, including xPeek, xABS, and xFlex.

Edge-to-edge uniformity and accuracy with 4K resolution

Count on part-to-part consistency across the full build volume without light diffusion near part edges.

Photopolymer Dental Printer

NXD 200

With an unprecedented 8.5L build volume measuring 275 x 155 x 200mm (10.8 x 6.1 x 7.8 inch), intelligent optimization, and Nexa3D's revolutionary patented LSPc technology, the NXD 200 is the perfect printer for any dental application.

Accurate and Repeatable 3D Printing

Patient-specific 3D printed dental models, surgical guides, splints, trays, and nightguards can be produced in-house with speed, reliability, and accuracy.

Validated Dental Workflows

Designed specifically for the dental industry, the NXD 200 offers world-class dental model manufacturing capabilities at ultrafast speeds with validated Keystone performance dental resins. The NXD 200 offers high throughput to keep dental operations productive, with a large build plate to create up to 20 flat models in less than 30 minutes.

Our Speed + Our Reliability = Your Productivity

Ultrafast 3D printing with validated materials and workflows bring dental manufacturing solutions you can trust — right to your lab.

Desktop Resin 3D Printer

XiP

XiP is powered by Nexa3D's proprietary Lubricant Sublayer Photo-curing (LSPc) Technology, which allows users to print at speeds of up to 18cm per hour, breaking the speed barrier in the 3D printing industry today. A replaceable, modular 4K LCD screen and advanced UV Light Engine combine to provide equal and strong exposure ensuring your parts are uniform and consistent, and have the best possible surface finish, every time you print.

Open Material Platform

The XiP desktop 3D printer is a fully open material platform that gives you ultimate flexibility and access to the materials you need, when you need them.

Smart Resin System

Our resin cartridges allow users the ability to load and unload material on the fly – even during a live print job. Once inserted, the printer automatically begins resin authentication and compatibility checks with the current build requirements using NFC technology.

Industrial Design Meets Consumer Experience

Sleek yet tough, the XiP's modular structure is designed for frequent use. Industrial-grade components and carefully designed, intuitive workflows provide optimized usability, serviceability, and upgradability.

Need help choosing the right material for your application?

Our experts are here to support you.

Get in Touch

Ready to order a free material sample?

Let us know where to send it.

Request a Sample

www.nexa3D.com