WHITE PAPER

Managing 3D Printer Fleets

As businesses, universities, and healthcare providers have adopted and scaled their use of additive manufacturing, multi-printer facilities have become more common. Creating an additive manufacturing center increases supply chain resilience and flexibility, improves overall efficiency, and reduces costs.

Managing multiple SLA and SLS printers doesn't have to be complicated — with the right organizational system and a few helpful pieces of equipment, any business can get a fleet of SLA and SLS printers up and running in just a day or two. By reviewing four different successful multi-printer scenarios, this guide will help you set up an efficient workflow for any volume or part type.

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formlabs

Contents

Introduction

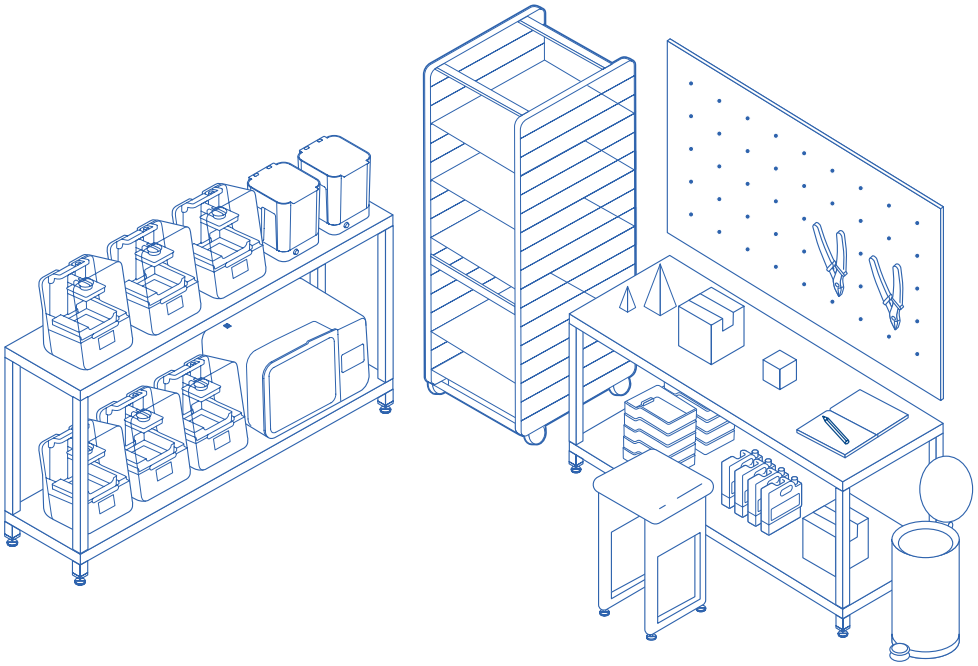
As advances in 3D printing technology continue to enable new workflows and expand the range of possible applications, businesses are scaling up their 3D printing operations. From dentistry, to aerospace manufacturing, to luxury jewelry, 3D printing at production levels can reduce costs, improve the agility and efficiency of your enterprise, and enable new products and market reach.

Bringing higher volume 3D printing in-house was traditionally expensive and required extensive infrastructure to support the large, industrial machines. Now, with affordable desktop and benchtop resin 3D printers and compact yet powerful SLS options, managing a fleet of 3D printers is simplified and efficient.

To illustrate the optimal methods of managing 3D printer fleets of varying sizes and technologies, we will outline four common scenarios from which anyone can build a workflow.

Managing 3D Printer Fleets of Varying Sizes and Technologies

MID-SIZE SLA PRINTER FLEET



EQUIPMENT:

- 6 Form 3/B/+ desktop SLA printers
- 2 Form Wash
- 1 Form Cure L
- 1 Finishing Tools
- Baker's rack
- Finishing table
- Pegboard
- Disposal solution
- Gloves, IPA

Total cost: ~$22,000

FACILITY REQUIREMENTS:

- Dimensions (W × D × H)
  - Form 3+
    - 40.5 × 37.5 × 53 cm
    - 15.9 × 14.8 × 20.9 in
  - Wash/Cure
    - 26.2 x 29.3 x 34.0 cm
    - 10.3 x 11.5 x 13.4 in
- Separate room with adequate ventilation (standard HVAC office systems are appropriate)
- 2 dedicated AC electrical circuits
- Environment: 18 – 28 °C/64 – 82 °F

Scaling up your production volume is simple and cost-effective with the Form 3+ or Form 3B+ desktop SLA units and post-processing machines. A six-printer set-up like the one pictured above can produce hundreds of parts a week and costs less than $25,000. Running multiple desktop units has many advantages, such as:

- Simplicity of producing parts in multiple materials
- Streamlined consumable management
- Ease of printer maintenance
- Efficient use of space and resources

Having multiple desktop units makes it easy to take full advantage of the versatility of the Formlabs materials library. Each printer can be assigned to a specific material, reducing the instances in which users have to change out resin tanks or cartridges. By keeping materials

assigned to certain printer units, users can remotely start prints without worrying that a printer might not be primed with the correct material.

Consumables management is simplified by the set-up pictured above. All resin tanks and cartridges are stored under the workbench, close to the printers they're intended for, yet out of direct sunlight and neatly organized away from the primary work surface. Tanks and cartridges are clearly labeled with their open date and type, so that the user can easily grab the right product and avoid the risk of cross-contamination between resins.

Build Platform 2 is another helpful addition to the multi-printer workflow. Its Quick Release Technology enables parts to be popped off the surface before the build platform is inserted back into the printer. Because the next print will be in the same material, that part removal step is the only task required in between print jobs. Users can move down the row of printers, quickly removing parts before inserting the build platforms, and post-process many parts together as a batch.

Formlabs desktop SLA units are easily stacked into shelving units and can fit into typical office spaces, like the one seen here. Adjacent tables are perfect for post-processing and finishing work.

Even with six desktop units, it's easy to fit them directly next to the post-processing machines like the Form Wash and Form Cure L. In this workflow, there are two Form Washes and one Form Cure L. For users printing in multiple materials, it helps to be able to separate washes. For users printing only in one material, washing in a single Wash L can be an effective way to batch tasks together.

Certain materials can be washed together, while others should be separately washed to avoid any particles dissolved in the isopropyl alcohol from affecting the color, finish, or performance of others.

For full compliance and biocompatibility, biocompatible resins require dedicated Resin Tanks, Build Platform, and Finish Kits or Form Washes, which should only be used with other Formlabs biocompatible resins.

This chart details which resins can be washed together. Properly labeling Form Wash machines as ‘Light’ or ‘Dark’ can be helpful.

LIGHT	**DARK**	**BIOCOMPATIBLE**	**OTHER** (WASH SEPARATELY BY THEMSELVES)
Clear Resin, White Resin, Rigid 4000 Resin, Rigid 10k Resin, Durable Resin, Elastic 50A Resin, Flexible 80A Resin, High Temp Resin	Black Resin, Grey Resin, Grey Pro Resin, Draft Resin, Model Resin, Tough 2000 Resin, Tough 1500 Resin, Flame Retardant Resin	Biomed White Resin, Biomed Black Resin, Biomed Clear Resin, Biomed Amber Resin, Surgical Guide Resin, Dental LT Clear Resin, Custom Tray Resin, IBT Resin, Temporary CB Resin, Permanent Crown Resin, Denture Teeth Resin, Denture Base Resin	ESD Resin, Color Kit, Castable Wax Resin, Castable Wax 40 Resin

Post-curing can be done to many parts at once, regardless of the material type, unlike the washing step. For this reason, having only one Form Cure L is the most efficient use of space and power.

Accessories and Tools

Certain accessories and tools can make the multi-printer workflow even easier. Baker’s racks, pictured in the corner, are perfect for drying parts after washing in isopropyl alcohol and before post-curing. Our team recommends the ULINE model with both full and half trays for easy organization of parts from different builds. Racks can be wheeled around the space to bring them closer for quality control (QC) checks or for easy storage while removing supports, sanding finishes, or adding finishes like paint and coating, or while packing parts to be sent elsewhere.

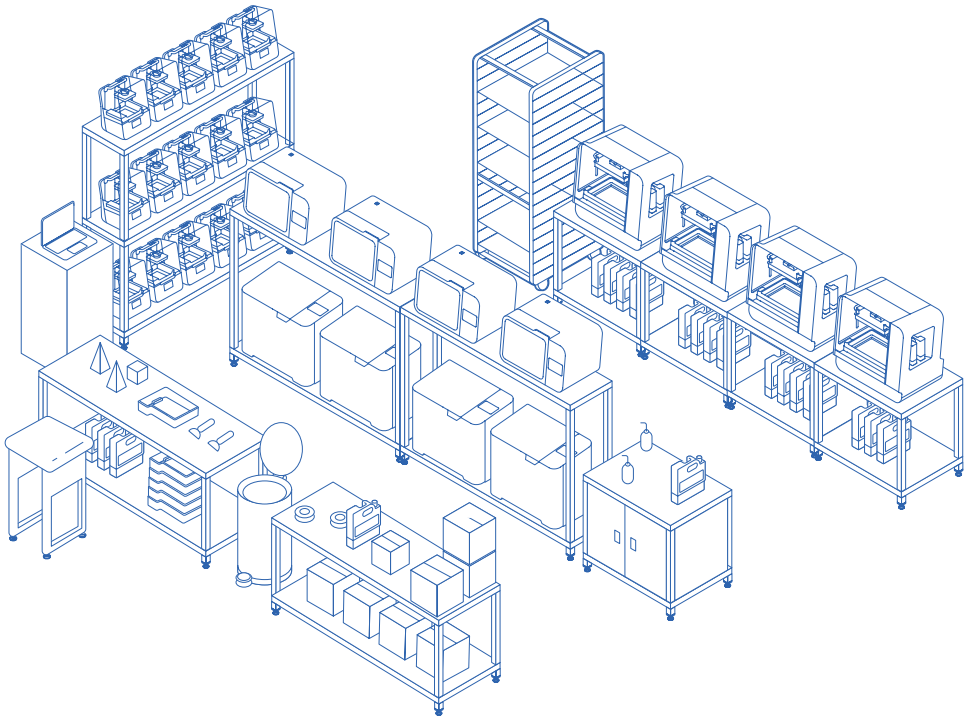
Curated by experienced engineers and validated by customers, the Formlabs Finishing Tools set was designed to enhance surface finish, smooth planes and edges, and elevate overall appearance while driving down labor time and cost per part.

Another accessory to streamline your workflow is a set of Formlabs Finishing Tools. The curated set includes polishing and buffing tools, flush cutters, spray bottles, and microfiber cloths that print farm managers at Formlabs headquarters have relied upon for over a decade.

Not included in Finishing Tools, but similarly helpful are items such as:

- Butcher-paper dispenser on the side of finishing table
- Peg board with various tools/implements
- Readily available nitrile gloves, paper towels, Novus cleaner, IPA, etc

PRODUCTION VOLUME SLA PRINTER FLEET



EQUIPMENT:

- 15 Form 3+/3B+ desktop printers
- 4 Form 3L/3BL benchtop printers
- 4 Form Cure L
- 4 Form Wash L
- 1 Finishing Tools
- 1 Baker's rack
- 2 Finishing table
- 1 Pegboard
- 1 IPA storage cabinet
- Gloves, IPA
- Disposal solution

Total cost: ~$105,000

FACILITY REQUIREMENTS:

- Dimensions (W × D × H)
  - Form 3+
    - 40.5 × 37.5 × 53 cm
    - 15.9 × 14.8 × 20.9 in
  - Form 3L
    - 77 × 52 × 74 cm
    - 30.3 × 20.5 × 29.1 in
  - Wash L
    - 78.0 x 46.0 x 67.0 cm
    - 30.7 x 18.1 x 26.4 in
  - Cure L
    - 69.0 x 54.0 x 44.5 cm
    - 27.2 x 21.3 x 17.5 in
- Separate room with adequate ventilation (standard HVAC office systems are appropriate)
- 3 dedicated AC electrical circuits
- Environment: 18 – 28 °C/64 – 82 °F

Production volumes are not only possible with Formlabs SLA 3D printers, they can be a profitable and efficient manufacturing method for many situations, including mass customization, stopgap production or supply chain solutions, and repair and aftermarket parts.

There are several considerations when scaling up from a mid-size SLA fleet to a production-level capacity. Though things like enlarged footprint and power consumption may be obvious, other considerations, such as safe IPA handling and storage, may be less so.

IPA Handling, Storage, and Disposal

Printing at production volumes requires close monitoring of the saturation level of your IPA containers — washing large volumes of parts consistently will necessitate changing out the IPA in Form Wash and Form Wash L often. For the Form Wash L, used in the above illustration, there is a 'Replace Solvent' mode that provides instructions on pumping out used IPA and replacing it with fresh IPA. Full, detailed instructions are listed on our website. IPA should be stored in a flammable-safe container or cabinet, like the one pictured directly to the right of the Form Wash L machines for ease of use. Disposal of used IPA is dependent on local regulations, but in most cases, should be handled by a hazardous waste company.

IPA Recycling

For many 3D printer fleet managers, solvent recycling becomes a concern, and there are different solvent recycling systems available depending on the need of your facility. Solvent recycling systems use distillation and fractionation processes to remove solutes from waste solvents, making it possible to reuse a high percentage of the original IPA to wash parts. Recycling IPA reduces waste disposal costs, emissions that are required to produce solvents, and the cost of purchasing IPA, while also giving the end user greater control of their IPA supply and making them less susceptible to supply chain interruptions

Spectra Photopolymers (owned by Formlabs) has been using the CBG Biotech SolvTrue™ S1500 Solvent Recycler for the past six months to recycle IPA used to clean parts for over 100 Form 3 3D printers.

Fleet Management, Dashboard, and Organization

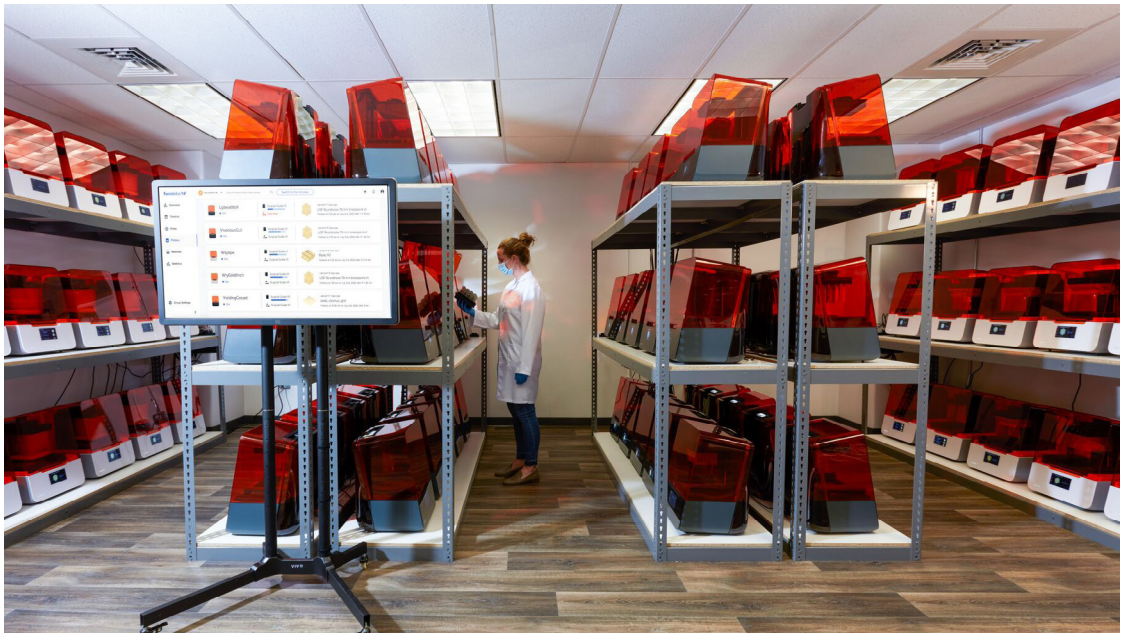
When overseeing this many printers, including two different formats (desktop and benchtop), you need a strategy for management and organization. Formlabs has developed tools to help oversee the machines and stay on top of consumables management as well as maintenance schedules, warranty status, and service plans.

Dashboard: Consumables Overview, Maintenance, Warranty, and Service

Dashboard has a host of features that can make overseeing multiple units easier. The Dashboard view will update users on the status of each cartridge in the printers — this is especially helpful if printers are used with one material only — so it's easy to tell when a cartridge or tank needs to be replaced. Printer serial names have warranty and service plan statuses tied to them in Dashboard, making it part of an annual routine to update warranty or service plans as needed.

Fleet Control: Simplify Multi-Printer Management

Fleet Control is a suite of features in PreForm and Dashboard that help automate certain parts of the production process. Fleet Control allows users to create Printer Groups — these can be based on material type, the origination of the print job, the destination of the finished part, or any designation that makes the most sense for your workflow. From there, Fleet Control will determine which printer makes the most sense to start the next job and will empty the print queue in the most efficient way possible. Users managing a print queue only have to ensure that prints are uploaded and that printers are set up to start the next print when the first one finishes; they don't have to spend time evaluating print jobs for an optimal place in the queue or search through PreForm to find a printer with the right material already preloaded.



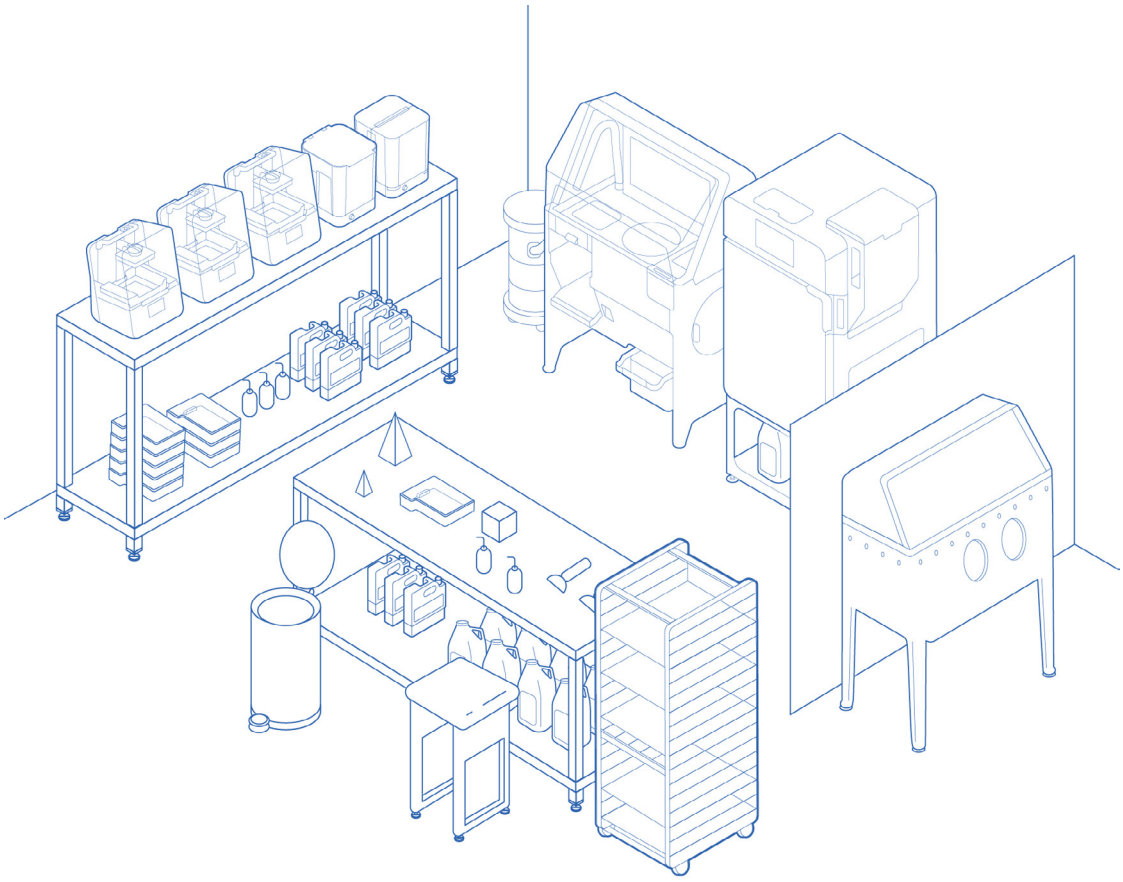
Batching Tasks Together for Streamlined Workflow

One successful technique employed by Formlabs production-level customers as well as at Formlabs' own print farms is the grouping and batching of tasks in order to streamline workflow. Though one person can efficiently manage a group of 20+ printers, if your print volume is in the hundreds of parts per day or more range, it makes more sense to have each employee perform a specific task, rather than shepherd a single print job through every step of the workflow. At Formlabs' Ohio location, where hundreds of sample parts are manufactured each day, the tasks are divided as follows:

- Load print jobs into queue
- Prime printer for print jobs (insert/changeover cartridges, platforms, and tanks, as needed)
- Remove parts from build platforms after a print is done
- Wash parts and post-cure parts
- Perform quality control checks and package parts

Siloing tasks in this way ensures that fewer people are handling the printer and consumables, and each task is performed with fresh eyes and experienced hands. This workflow is especially helpful in mass customization cases such as consumer product personalization or dental appliance manufacturing, where parts are similar, if not identical, to one another, and minimal post-processing or print preparation is needed.

HYBRID FLEET MANAGEMENT: SLA AND SLS PRINTER FLEET



EQUIPMENT:

- 3 Form 3+/3B+ desktop printers
- 1 Form Wash
- 1 Form Cure
- 1 Fuse 1+ 30W SLS printer
- 1 Fuse Sift post-processing machine
- 1 industrial vacuum
- 1 media blaster
- 1 Finishing Tools
- 1 baker's rack
- Disposal solution

Total cost: ~$40,000

FACILITY REQUIREMENTS:

- Dimensions (W × D × H)
  - Form 3+
    - 40.5 × 37.5 × 53 cm
    - 15.9 × 14.8 × 20.9 in
  - Form 3L
    - 77 × 52 × 74 cm
    - 30.3 × 20.5 × 29.1 in
  - Wash L
    - 78.0 x 46.0 x 67.0 cm
    - 30.7 x 18.1 x 26.4 in
  - Cure L
    - 69.0 x 54.0 x 44.5 cm
    - 27.2 x 21.3 x 17.5 in
  - Fuse
    - 64.5 × 68.5 × 107 cm (165.5 cm with stand)
    - 25.4 × 27 × 42 in (65.0 in with stand)
  - Fuse Sift
    - 101.5 × 61.0 × 154.5 cm
    - 39.9 × 24.0 × 60.8 in
- Separate room with adequate ventilation (standard HVAC office systems are appropriate)
- 3 dedicated AC electrical circuits
- Environment: 18 – 28 °C/64 – 82 °F

Having a hybrid workflow like the one pictured above can expand the range of applications possible for your business. The iterative prototyping process can move from looks-like and works-like prototypes in SLA resins to functional end-use products printed on the Fuse Series SLS printers. Or, production level volume can be achieved for one product on the Fuse 1+ 30W printer, utilizing the proven nylon and TPU materials, and the nesting and stacking ability of the powder bed technology, while the Formlabs SLA printers continue to prototype new products or produce high precision jigs, fixtures, and watertight end-use parts. The combination of the two technologies enables the in-house production of multi-purpose assemblies made from a variety of materials.

A hybrid workflow like this can be managed by the same tools as single-technology workflows. PreForm displays all Formlabs SLA and SLS printers on the same network as available to the user. Managing consumables and overseeing print progress can likewise still be accomplished in Dashboard, as well as maintenance reminders for SLS machines.

Considerations: Powder, Resin, and Air Safety

The main thing to consider when overseeing a workflow that includes both SLA and SLS technologies is to keep powder and resin separate. Though both technologies can be used in the same area, consumables like resin tanks and powder jugs should be kept as separate as possible. The negative pressure created by the Fuse Sift keeps powder from entering the air outside the machine, but it is still good practice to keep SLA printer orange hoods down, and all consumables covered. Post-processing of SLS and SLA parts should also be performed at different times.

The media blasting equipment, an important part of most SLS workflows, should be kept in a separate room from the Fuse Sift and Fuse Series printers. The media particles cannot be allowed to mix with the powder that could potentially be recycled into the printer.

Air Safety Testing Determines Negligible Risk

In order to provide further health and safety information related to the handling of SLS powder, Formlabs requested an air quality assessment from U.S. Compliance as well as a combustible and dust hazard analysis from Stonehouse Process Safety. Both studies took place at the Formlabs SLS research and development (R&D) facility in Somerville, MA, which has about 60 SLS printers and 15 post-processing machines.

The air quality study at Formlabs R&D SLS facilities indicates the following:

- Even with a large number of printers, the airborne powder concentrations are seven to 100 times below OSHA requirements.
- The likelihood of powder ignition is considered to be very low given the safeguards that have been incorporated inside the printing equipment.
- The overall risk from an employee safety perspective is considered to be negligible.

Air Quality Assessment Takeaways

Airborne powder concentrations associated with the normal use of the Fuse ecosystem, even with more than a dozen printers in one room, are seven to 100 times below OSHA recommended and permissible exposure limits. The normal use of the Fuse ecosystem does not represent a risk of respiratory adverse health effects and complies with OSHA dust exposure regulations.

DHA Takeaways

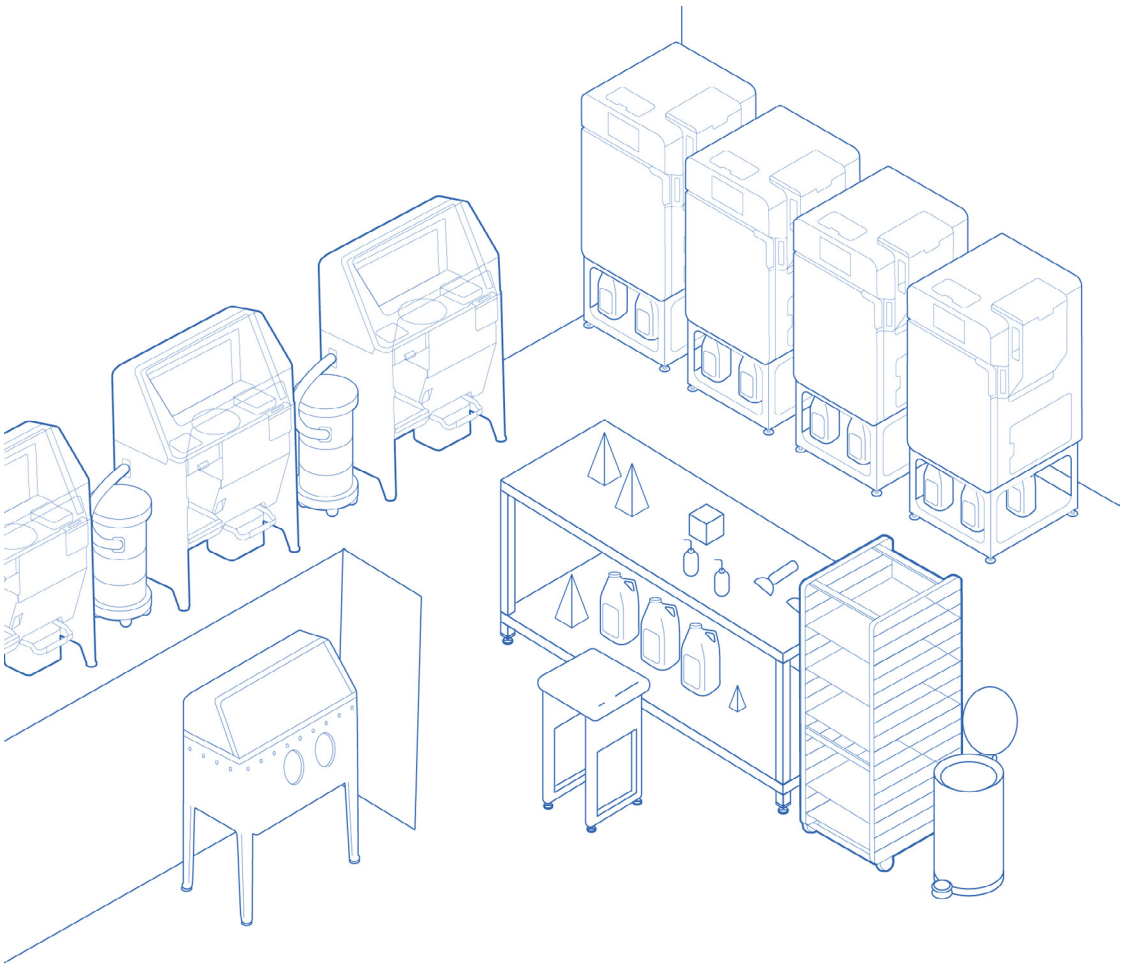
SLS powders are combustible. However, Stonehouse DHA shows that given the nature of the Formlabs powders, the safety features incorporated in the hardware, and regular housekeeping to avoid dust accumulation, the risks of powder fire and explosion are negligible.

Accessories and Tools

Baker's racks, pictured to the right of the workbench are useful for keeping resin and powder parts separate in the post-print stages. Proper labeling of the baker's rack trays will further ensure that the right parts go to their intended location and streamline the workflow. Baker's racks come with options for either full-size trays or half-size. Half-size trays are helpful for keeping batches together through different stages. For example, a tray of parts being dried will be kept on one side of the rack, then moved to the other side of the rack once cured, making space for a new tray of drying parts.

Finishing Tools, the industrial vacuum, and readily available disposal solutions will be integral in keeping the space well-organized and clean, which becomes especially important for hybrid workflows combining powders and resins.

PRODUCTION VOLUME SLS PRINTER FLEETS



EQUIPMENT:

- 4 Fuse 1+ 30W SLS printers
- 3 Fuse Sift post-processing machines
- 2 industrial vacuums
- 1 media blaster
- 1 work table
- 1 baker's rack
- Disposal solution

Total cost: ~$135,000

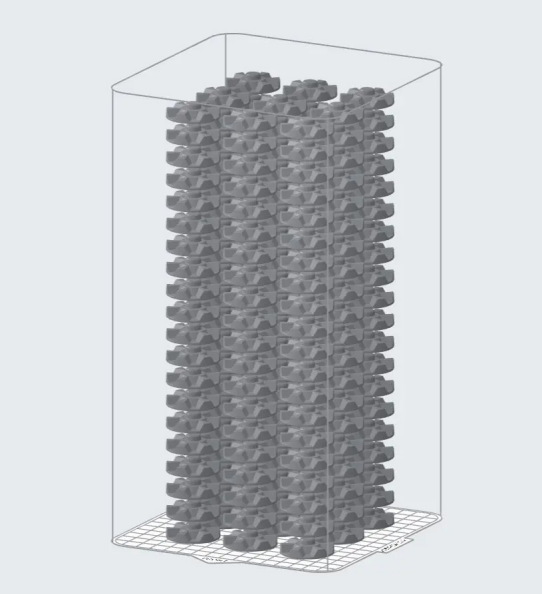
FACILITY REQUIREMENTS:

- Dimensions (W × D × H)
  - Fuse
    - 64.5 × 68.5 × 107 cm (165.5 cm with stand)
    - 25.4 × 27 × 42 in (65.0 in with stand)
  - Fuse Sift
    - 101.5 × 61.0 × 154.5 cm
    - 39.9 × 24.0 × 60.8 in
- Separate room with adequate ventilation (standard HVAC office systems are appropriate)
- 9 dedicated AC electrical circuits
- Environment: 18 – 28 °C/64 – 82 °F

3D printing hundreds or even thousands of parts a week can be accomplished easily with the Fuse Series SLS printers' packing algorithm and self-supporting print bed. For service bureaus, contract manufacturers, or OEMs with customized or intricate parts, 3D printing for end-use production makes sense and can be done efficiently and cost-effectively with the Fuse Series workflow.

Increasing Productivity Through Packing Efficiency

One of the main advantages of printing with the Fuse Series is that the self-supporting powder bed technology allows you to stack parts vertically and nest parts within cavities. The Formlabs packing algorithm determines how to most efficiently pack parts within the build chamber, resulting in faster print times and significant material savings.

FORM CURE TURNTABLE COUPLING	SPOTLIGHT CONTROL ASSEMBLIES
108 arrayed Form Cure turntable couplings, which highlights the value of packing for a production scenario. Print time before: **32h 14m** Density before: **13%** Print time after: **26h 35m** Density after: **24%** Materials saving: 5.07kg - 2.73kg = **2.34kg (46%)**	Assembly for an internal project, which showcases a use case where packing can quickly get an optimal layout to save time without any effort needed. Print time before: **33h 34m** Density before: **17%** Print time after: **24h 12m** Density after: **29%** Materials saving: 5.30kg - 3.05kg = **2.25kg (42%)**
	
	

There are third-party software systems that can take this packing algorithm further, such as Materialise Magics software, which can arrange 3D models, generate protective cases for delicate parts, send parts to multiple machines, and optimize printing schedules. For users managing large fleets of SLS printers, incorporating a software management system can lead to further material savings and improved cycle time with shorter prints.

Electrical Power Solutions

Formlabs SLS Fuse Series does not require industrial power and complex HVAC systems, as many of the traditional large format powder bed printers do. While each printer does require its own circuit, the power usage is well below that of many typical office or workshop environments.

Fuse Series printers and the Fuse Sift each require a dedicated AC circuit, providing at least 7.5 A at 230 VAC (EU) or 15 A at 120 VAC (US), as well as reliable grounding. These circuits must be separate from other devices, including fans, vacuums, power tools, space heaters, or any large appliances or power tools.

Regional Power Requirements:

- NA: 120 V and at least 15 A, Type NEMA 5-20R socket
- EU: 230 V and at least 7.5 A, Type CEE 7/3 "Schuko" socket
    - If your vacuum draws more than 6 A, your Fuse Sift needs an independent circuit supplying 230 V and 10 A to a Type CEE 7/3 "Schuko" socket.
- UK: 230 V and 13 A, Type G BS 1363 socket

Managing Multiple SLS Materials

The Fuse Series offers multiple different materials like nylon, nylon composites, TPU, and more that are already well known to the manufacturing community. A distinguishing feature of the Formlabs SLS technology is that it is possible to switch between materials — many industrial SLS solutions have a prohibitively difficult cleaning process, while the Fuse Series SLS printers can be cleaned and switched over in four to six hours. While not recommended to do often, this switchover process allows for a Fuse Series user to adapt to new demands or react to a new material release, without rendering their machine obsolete.

The compact size and affordability of the Fuse Series also make it easier to build out a fleet for running multiple different materials at once, for example, for service bureaus or product design and engineering firms. Previously, the $200,000+ cost of traditional SLS or MJF systems made it hard to justify running niche materials, such as carbon fiber or glass-filled nylon. Now, with the Fuse Series, the barrier to entry is drastically lower, and scaling up with the demand is easier.

PreForm and Dashboard perform the same function as with other fleets; the two platforms enable users to oversee their material usage, current print status, availability of printers and Fuse Sifts, as well as warranty status, service plans, and maintenance schedules.

Fleets of Fuse Series SLS printers don't require the same industrial infrastructure that many traditional SLS or MJF machines do. The accessibility and ease of use of Fuse Series printers enable agile, low-cost manufacturing for businesses of any size.

Fuse Series Maintenance

Unlike the Formlabs SLA printer fleets, there are a few scheduled tasks that users should regularly complete to keep their Fuse Series printers running optimally. After each print, users should check to make sure the optical cassette and IR sensor are clear and clean. At about 15 seconds of labor, even when multiplied for a fleet of Fuse Series printers, this task only requires a couple of minutes. After five to 10 prints, cleaning the optical cassette is recommended. If users are printing regularly, there are tasks such as cleaning or replacing the Fuse Sift intake filter, all of which will be prompted by Dashboard or on the printer's UI screen. The full list of scheduled maintenance tasks can be found on our website. Managing multiple Fuse printers requires much less maintenance than managing even one traditional SLS or MJF system.

Formlabs Service Plans: Scale Your Fleet With Confidence

Tailored to professionals, our premier SLA, SLS, and combination service plans are designed to meet the needs of your business through rapid response to critical issues, proactive check-ins, extensive on-demand resources, and optional on-site visits. Users can choose between Pro Service Plan (PSP) tied to individual printers, or Enterprise Service Plan (ESP), which makes it easy to maintain your fleet by partnering with a dedicated contact for top-tier service.

For users who are scaling production with a fleet of SLA or SLS printers, ESP can optimize production, reduce costs, and avoid downtime. The benefits of ESP are:

- Priority access to Enterprise Service Experts
- Customized training
- Expedited troubleshooting
- Hot swaps for hardware replacements
- Proactive check-ins
- Proactive management of printer health
- Spare parts kit
- Extended warranty for the duration of the plan

BASIC WARRANTY (PER PRINTER)	**PSP/MSP/DSP** (PER PRINTER)	**ESP** (FOR FLEETS)
Warranty 1 Year	**Warranty** Up to 3 Years	**Warranty** Lifetime of your printers
Printer/Component Replacement ●	**Printer/Component Replacement** ●	**Printer/Component Replacement** ●
Priority Email Support ○	**Priority Email Support** ● Yes, dedicated team	**Priority Email Support** ● Yes, dedicated representative
Phone Support ○	**Phone Support** ●	**Phone Support** ●
Printer Hot Swap ○	**Printer Hot Swap** ●	**Printer Hot Swap** ●
Expedited Troubleshooting ○	**Expedited Troubleshooting** ● DSP and MSP only	**Expedited Troubleshooting** ●
Customized Training Session (Live) ○	**Customized Training Session (Live)** ● 60 minutes (PSP), 90 minutes (DSP, MSP)	**Customized Training Session (Live)** ● 120 minutes
Proactive Check-Ins ○	**Proactive Check-Ins** ● Every six months (DSP, MSP)	**Proactive Check-Ins** ● Quarterly
Remote Printer Health Monitoring ○	**Remote Printer Health Monitoring** ○	**Remote Printer Health Monitoring** ●
Repair Cost Coverage/EW ○	**Repair Cost Coverage/EW** ○	**Repair Cost Coverage/EW** ●
Spare Parts Kit	**Spare Parts Kit** ○	**Spare Parts Kit** ●

Scaling Up 3D Printing Volume

Creating a lean, agile manufacturing process is possible with fleets of 3D printers. Relying on 3D printing for production can help businesses avoid the high costs of machining or tooling while bringing control over the means of production in-house. Reducing reliance on external contract manufacturers or third-party suppliers can help businesses become more resilient and improve their ability to pivot in the face of supply chain disruptions or changes in market demand.

High-resolution 3D printers like Formlabs Form 3 Series and Fuse Series can achieve superior surface finish and mimic a range of injection-molded plastic material properties, helping companies break into mass customization or test the market with shorter initial runs of production. Getting started with these printers doesn't have to be complicated or expensive — as illustrated above, purchasing a fleet of Form 3+/3B+, Form 3L/3BL or Fuse Series printers can cost less than many large-format traditional printers available today, and setting them up doesn't require months of construction and complex HVAC systems either. Companies all over the world are relying on fleets of Formlabs printers to help them develop new products, get their products to market quickly, and become more responsive to market changes.

With Formlabs printers and tools, you can effectively manage a fleet with our streamlined software platforms and a support network of experts and technicians who can help optimize your 3D printing workflow for your business needs. To build your own fleet and calculate your production ROI, contact our sales team.

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