



HYREL International, Inc.

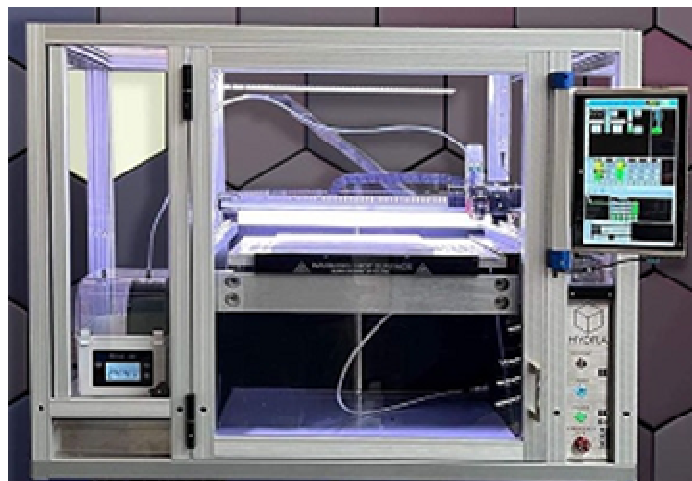
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Hydra 2I Spec Sheet

The Hydra 2I, or H2I, is designed for the widest range of laboratory needs. It can handle all of our accessories, including a 200°C build plate up to 400x600mm, 4th and 5th axis options, a three-phase spindle tool, a pick-and-place head, and more.

The H2I has a 42x24" base. It sits on any flat surface, and is also designed to sit well on standard 44x22" toolboxes.

Details are listed below. Please reach out to us with any questions about Hyrel additive and combined manufacturing equipment.



Motion, X/Y/Z: Head/Head/Bed

Exterior Dimensions, X/Y/Z: 42x24x33 in; 107x61x84 cm

Power Requirements: 8 A / 208-240 VAC Single Phase / 50-60 Hz

Build Volume, X/Y/Z: 16x12x10 in / 400x300x250 mm standard;
20x16x10 in / 500x400x250 mm optional

Max Payload, Bed/Yoke: 20 lbs (9 kg) bed / 5 lbs (2.2 kg) yoke

Bed Temperatures: Ambient to 200°C standard; *Amb to -5°C optional*

Chamber Temperatures: Ambient to 65°C at present

Printing Speeds: Up to 60 mm/sec (3600 mm/min) recommended

Positional Resolution, X/Y/Z: 0.005 mm / 0.005 mm / 0.001 mm

Positional Accuracy, X/Y/Z: 0.05 mm / 0.05 mm / 0.01 mm

Positional Repeatability, X/Y/Z: 0.05 mm / 0.05 mm / 0.01 mm

Output for Bioplots, X/Y/Z: 0.1 mm lines with 0.2 mm spacing

Tool Positions, Std/Max: Five

Filament Heads: All: 1.75 mm filaments at up to 260°C or up to 450°C

Reservoir Heads: All: from 1 cc to 500 cc, ambient, heated (to 360°C) or chilled (to -5°C)

Mixing/Blending Heads: All: active or passive blending, and fixed or programmable ratios

Spindle Tool Heads: 48 VDC three-phase versions

Laser Tool Heads: 6 W, 450 nm diode laser tool

UV Light Pens: All: 5 W in 365, 405, or 450 nm

Extra Axis Options: All: 4th lathe-style or 4th/5th combo trunnion-style

Pick-and-Place Compatible: Yes, both first- and second-generation models

USB Microscope Compatible: Yes



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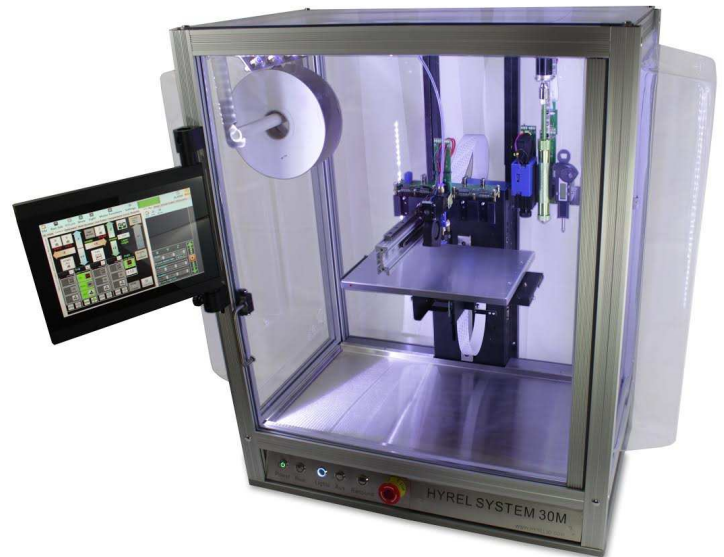
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System 30M Spec Sheet

The System 30M, or just 30M, is designed for a wide range of laboratory needs. Designed for most thermoplastics, it is also able to print liquids, gels, and clays from ambient, cooled, or heated temperatures, with or without UV curing.

The 30M has a 34x16" base, and sits on any flat surface.

Details are listed below. Please reach out to us with any questions about Hyrel additive and combined manufacturing equipment.



Motion, X/Y/Z: Bed/Head/Bed

Exterior Dimensions, X/Y/Z: 34x16x32 in, 87x41x82 cm

Power Requirements: 15 A / 110-120 VAC / 60 Hz **or**
8 A / 208-240 VAC (single phase) / 50-60 Hz

Build Volume, X/Y/Z: 200x200x200 mm standard;

Max Payload, Bed/Yoke: 5 lbs (2.2 kg) bed / 5 lbs (2.2 kg) yoke

Bed Temperatures: Ambient to 90°C

Chamber Temperatures: Ambient to 50°C

Printing Speeds: Up to 30 mm/sec (1800 mm/min) recommended

Positional Resolution, X/Y/Z: 0.005 mm / 0.005 mm / 0.001 mm

Positional Accuracy, X/Y/Z: 0.05 mm / 0.05 mm / 0.01 mm

Positional Repeatability, X/Y/Z: 0.05 mm / 0.05 mm / 0.01 mm

Output for Bioplots, X/Y/Z: 0.1 mm lines with 0.2 mm spacing

Tool Positions, Std/Max: Four

Filament Heads: All: 1.75 mm filaments at up to 260°C or up to 450°C

Reservoir Heads: All: from 1 cc to 500 cc, ambient, heated (to 360°C) or chilled (to -5°C)

Mixing/Blending Heads: All: active or passive blending, and fixed or programmable ratios

Spindle Tool Heads: No

Laser Tool Heads: 6 W, 450 nm diode laser tool

UV Light Pens: All: 5 W in 365, 405, or 450 nm

Extra Axis Options: None

Pick-and-Place Compatible: No

USB Microscope Compatible: Yes



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Engine SR Spec Sheet

The Engine, Standard Resolution, or ESR, is an unenclosed version of our 3DM. Designed for liquids, gels, and clays from ambient, cooled, or heated temperatures, with or without UV curing, the ESR can also print filaments with low-temperature requirements.

The ESR has a 13x21" base, and sits on any flat surface as well as fitting inside many fume hoods or glove boxes.

Details are listed below. Please reach out to us with any questions about Hyrel additive and combined manufacturing equipment.



Motion, X/Y/Z: Bed/Head/Bed

Exterior Dimensions, X/Y/Z: 13x21x22 in, 33x54x56 cm

Power Requirements: 15 A / 110-120 VAC / 60 Hz **or**
8 A / 208-240 VAC (single phase) / 50-60 Hz

Build Volume, X/Y/Z: 200x200x200 mm

Max Payload, Bed/Yoke: 5 lbs (2.2 kg) bed / 5 lbs (2.2 kg) yoke

Bed Temperatures: Ambient to 90°C

Chamber Temperatures: No enclosure

Printing Speeds: Up to 30 mm/sec (1800 mm/min) recommended

Positional Resolution, X/Y/Z: 0.005 mm / 0.005 mm / 0.001 mm

Positional Accuracy, X/Y/Z: 0.05 mm / 0.05 mm / 0.01 mm

Positional Repeatability, X/Y/Z: 0.05 mm / 0.05 mm / 0.01 mm

Output for Bioplots, X/Y/Z: 0.1 mm lines with 0.2 mm spacing

Tool Positions, Std/Max: Four

Filament Heads: All: 1.75 mm filaments at up to 260°C or up to 450°C

Reservoir Heads: All: from 1 cc to 500 cc, ambient, heated (to 360°C) or chilled (to -5°C)

Mixing/Blending Heads: All: active or passive blending, and fixed or programmable ratios

Spindle Tool Heads: No

Laser Tool Heads: 6 W, 450 nm diode laser tool

UV Light Pens: All: 5 W in 365, 405, or 450 nm

Extra Axis Options: None

Pick-and-Place Compatible: No

USB Microscope Compatible: Yes



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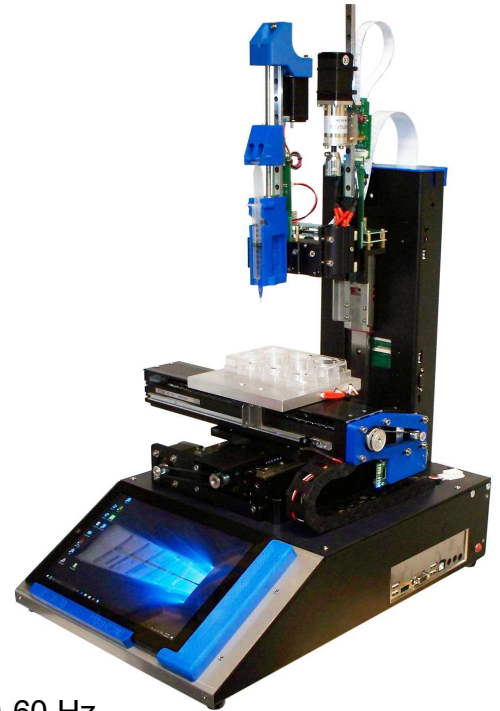
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Engine HR Spec Sheet

The Engine, High resolution, or EHR, is designed for precision applications with biological materials or fine conductive, magnetic, and metallic traces. With precision ball screws in every axis, its positioning accuracy, resolution, and repeatability are unmatched.

The EHR has a 13x20" base. It sits on any flat surface as well as fitting inside many fume hoods or glove boxes.

Details are listed below. Please reach out to us with any questions about Hyrel additive and combined manufacturing equipment.



Motion, X/Y/Z: Bed/Bed/Head

Exterior Dimensions, X/Y/Z: 13x20x19 in, 33x51x49 cm

Power Requirements: 15 A / 110-120 VAC / 60 Hz *or*
8 A / 208-240 VAC (single phase) / 50-60 Hz

Build Volume, X/Y/Z: 100x100x100 mm standard; *inquire about extended build volumes*

Max Payload, Bed/Yoke: 5 lbs (2.2 kg) bed / 5 lbs (2.2 kg) yoke

Bed Temperatures: Ambient to 120°C standard; *Amb to 200°C or Amb to -5°C optional*

Chamber Temperatures: No enclosure

Printing Speeds: Up to 60 mm/sec (3600 mm/min) recommended

Positional Resolution, X/Y/Z: 0.001 mm / 0.001 mm / 0.001 mm

Positional Accuracy, X/Y/Z: 0.01 mm / 0.01 mm / 0.01 mm

Positional Repeatability, X/Y/Z: 0.01 mm / 0.016 mm / 0.01 mm

Output for Bioplots, X/Y/Z: 0.1 mm lines with 0.2 mm spacing

Tool Positions, Std/Max: Five

Filament Heads: All: 1.75 mm filaments at up to 260°C or up to 450°C

Reservoir Heads: All: from 1 cc to 500 cc, ambient, heated (to 360°C) or chilled (to -5°C)

Mixing/Blending Heads: All: active or passive blending, and fixed or programmable ratios

Spindle Tool Heads: 48 VDC three-phase versions

Laser Tool Heads: 6 W, 450 nm diode laser tool

UV Light Pens: All: 5 W in 365, 405, or 450 nm

Extra Axis Options: None

Pick-and-Place Compatible: No

USB Microscope Compatible: Yes