

Bambu Lab R1 Spec sheet

Parameter	Specification
Processing	
Laser type	55W CO2 laser
Supported materials	Cut & engrave: wood, acrylic (incl. clear acrylic), leather, fabric, paper, EVA foam, shell Engrave only: coated metal (bare metal cannot be engraved), glass, ceramic
Max cutting capacity	Short-focus: 15mm black walnut / 20mm acrylic Medium-focus: 18mm black walnut / 20mm acrylic Long-focus: 18mm black walnut / 20mm acrylic (faster than medium at the same thickness)
Working area	Standalone: 600×300mm With Conveyor: 600×3000mm
Max speed	1000mm/s
Max acceleration	20000mm/s²
Spot size	Short-focus: Ø0.11mm Medium-focus: Ø0.17mm Long-focus: Ø0.19mm
Absolute motion accuracy (with Vision Encoder)	< 0.1mm @600mm
Air assist pump	30L/min @30kPa
Measurement & Positioning	
Positioning system	Dual-camera + dual-laser + dual-encoder system
Positioning accuracy	< 0.2mm
Panoramic capture	Supported
Detail capture	Supported
Focusing	Fully automatic laser ranging
Toolhead positioning measure	Supported
Curved surface processing	Supported
Cylinder processing	Supported
Revolve shape processing	Supported
Automation	
Laser alignment	Fully automatic
One-tap setup	Supported
Autofocus	Supported
Automatic material recognition	Supported
System health management	Supported

Safety	
Safety certification	Class 1 laser safety
Safety interlocks	Lid-open protection Flame detection Auto fire extinguishing
Safety key	Standard
Emergency stop	Standard
Physical & Power	
Dimensions	940×560×200mm
Space required	Standalone: W940 × D660 × H650mm (lid open). Allowing 100mm of clearance on the left, right, rear, and top: 1140 × 860 × 750mm. With Riser Base: W940 × D660 × H850mm (lid open). Allowing 100mm of clearance on the left, right, rear, and top: 1140 × 860 × 950mm. With Riser Base and Conveyor: Starts from the Riser Base footprint, plus room in front and behind for long stock to extend beyond the machine: In front: stock length – 400mm; Behind: stock length – 550mm Example: for 1500mm stock, allow ~1100mm in front and ~950mm behind, in addition to the base footprint.
Package dimensions	1095×725×310mm
Weight	33.5kg
Max input power	780W
Input voltage	100–240 VAC, 50/60Hz
Recommended operating temp	10°C – 30°C
Software	
Software	Bambu Suite
OS	Windows, macOS
Connectivity	
Wireless	Dual-band Wi-Fi
USB	Supported
Wi-Fi frequency	2412–2472MHz, 5150–5850MHz (FCC/CE) · 2400–2483.5MHz, 5150–5850MHz (SRRC)
Wi-Fi TX power (EIRP)	2.4GHz: <23dBm (FCC), <20dBm (CE/SRRC/MIC) · 5GHz Band1/2: <23dBm · Band3: <30dBm (CE) / <24dBm (FCC) · Band4: <23dBm (FCC/SRRC) / <14dBm (CE)
Wi-Fi protocol	IEEE 802.11 a/b/g/n/ac/ax