

Qingdao Achieving Honeycomb Panel Co., Ltd.

青 岛 智 新 成 复 合 板 材 有 限 公 司

www.cnhoneycomb.com

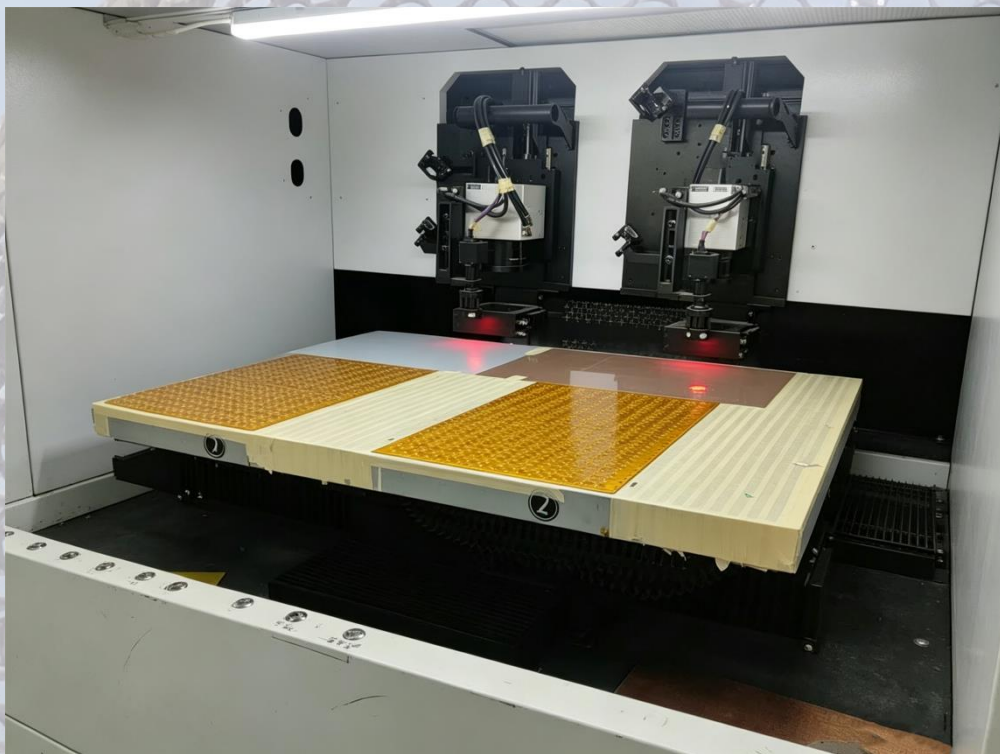
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Premium Non-Reflective PC Honeycomb Bed for High-Precision Laser Engraving

- **Introduction**

In the formulation of high-speed CO2 and diode laser processing, minimizing scrap rates and achieving perfect edges depends entirely on the stability and surface physics of your support bed.

Engineered with premium industrial-grade **PC (Polycarbonate)** honeycomb technology, our laser engraving bed is built not merely as a grid, but as a critical component for optical and structural optimization. Designed for demanding factory environments, it features a low-reflection, non-conductive surface that eliminates back-flash damage and withstands high-frequency laser head movements without microscopic chattering. Offering a perfect technical balance of durability, thermal stability (-40°C to 110°C), and cost-efficiency, it is the ultimate upgrade for B2B manufacturers seeking to **lower scrap rates, eliminate post-processing touch-ups, and reduce consumable costs.**



Technical solution engineered by R&D Department
at Qingdao Achieving Honeycomb Co., Ltd. 2026.

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- **Ultimate Dynamic Stability: Eliminate Jagged Edges & Chatter Marks**

High-frequency, rapid reciprocating movements of the laser head generate micro-vibrations—the primary culprit behind jagged, uneven edges and distorted engraving graphics. Utilizing a biomimetic honeycomb structure with an exceptionally high specific strength, this bed effectively absorbs and dissipates dynamic kinetic stress during high-speed displacement.

Factory Benefit: This ensures the laser focal point remains perfectly synchronized with your digital design, significantly enhancing edge sharpness and fine-line detailing for intricate vector engravings.

- **Process Optimization: Eradicate Back-flash & Material Warping**

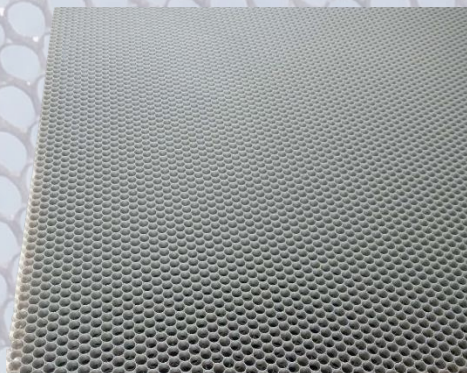
Unlike traditional aluminum or steel honeycomb grids, our specialized Polycarbonate polymer exhibits extremely low laser reflectivity. This inherently solves the industry-wide headache of "back-flash"—where reflected laser energy scorches or sputters the underside of the workpiece. Furthermore, featuring an open-cell design with up to **97% airflow permeability**, it integrates seamlessly with exhaust and vacuum systems.

Factory Benefit: Smoke, toxic fumes, and residual heat are evacuated instantly, keeping the material surface dry and completely preventing thermal deformation or localized warping of thin substrates.

- **Non-Conductive Surface Protection: Zero Scratches on Delicate Materials**

Polycarbonate laser processing surfaces offer a smooth, non-conductive contact matrix, making them uniquely compatible with sensitive diode and fiber laser systems. It delivers pristine results on highly sensitive, easily defaced materials—such as coated metallic sheets, thin films, delicate optics, flexible plastics, genuine leather, and premium decorative laminates.

Factory Benefit: The smooth honeycomb nodes prevent physical pressure marks, friction scratches, and static accumulation on high-aesthetic surfaces during rapid shifting.



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High ROI & Full Dimensional Customization: Optimizing Lifespan and Scrap Rates

Engineered with 100% virgin premium Polycarbonate, our honeycomb bed delivers outstanding chemical and thermal resilience, maintaining dimensional integrity from -40° C to 110° C.

The Pragmatic Upgrade Over Metal and Acrylic Grids: Traditional aluminum honeycomb beds are durable but suffer from high laser reflectivity, leading to costly "back-flash" burn marks on premium substrates. Conversely, makeshift acrylic (PMMA) sacrificial grids warp and melt rapidly under heavy use. Our industrial PC honeycomb bed offers the ultimate pragmatic sweet spot: **it completely eliminates back-reflection while delivering a far longer operational lifespan than consumable plastic/acrylic alternatives**, dramatically lowering long-term operational costs.

Full-Scale Tailoring: We understand that every factory utilizes different machinery footprints. We offer full dimensional customization (thickness, cell size, and outer dimensions) to perfectly fit any major Chinese or imported laser engraving machine enclosure, resolving any sourcing difficulties for unique setups.

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Technical Specifications

Parameter	Specification	Application Note
Material	100% Virgin PC (Polycarbonate)	Ensures zero toxic off-gassing and high industrial impact strength.
Compatible Power	30W – 200W CO2 / Fiber / UV	Optimized for non-metal fabrication and precision marking.
Cell Size (Aperture)	3.5mm / 6.0mm	Small cells for micro-parts; large cells for thick plates.
Standard Thickness	10mm / 20mm / 30mm / 50mm	20–30mm is the industry standard for CNC/Laser bed configurations.
Thermal Range	-40°C to 110°C	Resists continuous laser heat accumulation without deformation.
Sustainability & Compliance	100% Recyclable / RoHS Certified	Supports Circular Economy, green factory mandates, and ESG compliance.

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Polycarbonate Honeycomb “PC3.5”

SPECIFICATION		
Dimensions	standard: 1220 x 2440 mm	export: 1150 x 2300 mm
Thickness	2.2-1000mm or customized	
Cell size	3.5mm	
color	transparent/black/grey	
Style	Material	Density
PC3.5	Polycarbonate	90kg/m²
Possible process	RTM, closed moulds	
CHARACTERISTICS		
Properties		data
Typical Bare Compressive	Strength Mpa	2.2
	Mudulus Mpa	115
Typical Plate Shear	Strength Mpa	1.3
	Mudulus Mpa	22
CAUTION		
Behaviour with fire	Flame retardant level 2, i.e. B2 level. The ignition point of the PC board itself is 580 °C, and it will self extinguish after leaving the fire. It does not produce toxic gases during combustion and will not promote the spread of the fire.	
Chemical Properties	Excellent resistance to water and most acids, bases, and salt solutions, good heat and cold resistance.	
Weather ability	The heat resistant temperature range of PC material is -45℃-135℃. At -30℃ does not occur cold brittle, at 120℃ does not soften, in the harsh environment of its mechanics, mechanical properties have no significant change.	
Light transmittance	Transparent honeycomb panel transmittance of up to 90%.	

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