

ActionLasers Industrial Laser Marking Solutions

Comprehensive Material Selection Guide & Real Sample Catalog (Fiber / UV / CO2)

ActionLasers provides cutting-edge industrial marking systems for global manufacturers. This technical catalog outlines laser wavelength suitability, power recommendations, and real laboratory sample benchmarks across metals, plastics, and organic non-metals.

1. Laser Marking Technology Selection Matrix

Technology	Wavelength	Target Materials	Key Advantages	Power Tiers
Fiber Laser	1064 nm (NIR)	Stainless steel, brass, aluminum, carbon steel, hard plastics	High speed, deep engraving, 100k+ hrs maintenance-free	20W / 30W / 50W / 100W
UV Cold Laser	355 nm (Ultraviolet)	Glass, heat-sensitive plastics (ABS, PC), silicon, medical tubes	Zero thermal damage, ultra-fine focal spot (<15µm)	3W / 5W / 10W / 15W
CO2 Laser	10.6 µm (Far IR)	Wood, paper, acrylic, leather, rubber, ceramic, glass bottles	High absorption on organics, cost-effective fast coding	30W / 40W / 60W / 100W

2. Real Marking Application Samples & Parameter Benchmarks

	Application: Solid Wood & Bamboo Box Recommended: ActionLasers 30W CO2 Parameters: 1,500 mm/s 45% 20 kHz Result: Clear dark charcoal engraving without scorching.		Application: Cardboard Packaging Date Coding Recommended: ActionLasers 30W/60W Flying CO2 Parameters: 4,000 mm/s 35% 25 kHz Result: High-speed permanent batch coding for food lines.
	Application: PET Bottle Laser Coding Recommended: ActionLasers UV / CO2 Flying Parameters: 3,500 mm/s 30% 30 kHz Result: Vector date coding without puncturing thin walls.		Application: Industrial Ceramic & Glazed Tile Recommended: ActionLasers 5W UV / 50W Fiber Parameters: 800 mm/s 70% 25 kHz Result: Permanent identification resistant to heat & acid.

3. Global Technical Support & Free Sample Testing

ActionLasers offers **free customized sample testing**. Send your raw material samples to our testing center, and our optical engineers will provide complete parameter reports and video recordings.

Official Website: <https://www.actionlasers.com/> | **Email:** info@actionlasers.com | **HQ:** ActionLasers Industrial Park