TruMicro Mark 1020

Permanent, high-contrast and corrosion-free black marking of medical parts

Focused on the requirements of the medical device industry
- Permanent and corrosion-resistant marking of UDIs. No fading after autoclaving
- High-contrast black marking, legible under all viewing angles
- Full traceability and quality control with VisionLine cameras and image processing solution
- IQ/OQ certification support

Complete solution for 3D marking and material processing
- Unmatched versatility for marking, engraving, structuring, drilling
- TruMark workstation with many workpiece-handling and interface options
- 3D CAD software for marking complex geometries and components
- World-class application and parameter optimization support by our global laboratories

Highest parameter stability and long-term reliability
- Industry-proven and ultrafast laser technology
- Suitable for 24/7 operation
- Perfect for high-volume production or for small lot sizes
- Stable, reproducible results at ambient temperatures of up to 104°F
- 24/7 service support

We support you with Installation and Operation Qualification (IQ/OQ) services to comply with the certification requirements of the medical device industry.
TruMicro Mark 1020: Unlimited black marking for UDI-compliant markings

Mark, engrave and process your medical parts in full 3D with the new ultrafast laser TruMicro Mark 1020.

Common marking applications
- Unique device identifier (UDI) marking
- Banding to mark depth scales on cannulas, catheters and tubes
- Logos and company branding for identification

Polymer marking
- High-contrast marking of polymers used in the medical industry, including ultra-high-molecular-weight polyethylene (UHMWPE)

3D microprocessing of medical parts
- Drilling, cutting, welding, structuring of surfaces

Significant advantages over the thermal marking process of nanosecond lasers
- High-contrast, dark black marking
- Legible independent of viewing angle, even under difficult lighting conditions
- Markings are permanent and corrosion-resistant, with minimal surface relief, preventing bacteria accumulation
- Marking of extremely small, machine-readable Dot Matrix Codes
- Broad process window, stable and reproducible marking process, with constant, machine-independent parameters
- No creation of cracks, no fading after passivation and autoclaving
- Marking quality is independent of part geometry
- No passivation is required after marking

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. average power</td>
<td>W</td>
<td>10</td>
</tr>
<tr>
<td>Marking field</td>
<td>mm</td>
<td>125 x 125 x ±25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>300 x 300 x ±15</td>
</tr>
<tr>
<td>Pulse duration range</td>
<td>fs</td>
<td>900</td>
</tr>
<tr>
<td>Max. pulse energy</td>
<td>µJ</td>
<td>100</td>
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<tr>
<td>Frequency range</td>
<td>kHz</td>
<td>Up to 2000</td>
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<tr>
<td>Max. peak power</td>
<td>kW</td>
<td>111000</td>
</tr>
<tr>
<td>Min. spot size</td>
<td>µm</td>
<td>46</td>
</tr>
</tbody>
</table>

Subject to change without notice. Only specifications in our offer and order confirmation are binding.

3D black marking on catheter (Alpine Laser)

Turnkey solution: TruMicro Mark 1020 integrated in the marking system TruMark Station 7000

3D black marking with TruMicro Mark 1020 on an additively manufactured titanium hearing instrument

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Everything else you want to know about TruMicro Mark 1020:
www.trumpf.com/s/9dln2w