Raydiance™ Laser

Raydiance™ Laser is housed in a matching container bolted to the 49XX Automated Programming System

Precise Marking Quality

The Radiance™ combines the advantages of Fiber and YAG laser technologies with our latest 4900 Automated Programming System. As programmable component volume accelerates and quality processes demand traceability, the industry needs a laser marking solution that is easy to use and delivers quality results, every time. Shrinking package sizes and range of materials require a safe, reliable system that produces human and machine readable marks. Micro-marking information in a limited space requires ultra-fine marking capability, beyond that of conventional laser marking systems. The Raydiance™ utilizes fine control for shallow marking, producing vivid contrast with a low thermal impact, preventing semiconductor damage.

Raydiance™ Hybrid Laser Delivers Precise Marking Quality

- High-Contrast Micro Marking of Dynamic Alphanumeric text and 2D Codes
- Combine Advanced Serialization and Cyber-Security for Traceability and Protection
- Thermopile Power Monitor Controls Laser Power Output
- Lase Plastic, Metal or Custom Materials
- Mark Machine Readable Barcodes, DataMatrix codes, Logos and Custom Symbols
- Extensive Library of common Dynamic
- Text Specifiers for Date Codes, Lot Codes and Serial Numbers
- Ablation of standard factory marks

Actual laser-marked device including alphanumeric, QR Code, and logo, marked with the Raydiance™ Laser Marking System

Intelligent Thermopile Power Monitor—Produce Consistent Quality Marks

The Raydiance™ utilizes a Thermopile Power Monitor for precise monitoring and calibration of laser energy output. The intelligent system automatically corrects laser output using auto-calibration settings. Even over long-term operation, laser marks are consistent as the system corrects for natural laser tube power loss. The Thermopile Power Monitor eliminates the need to use external equipment to monitor laser output. Output management is performed easily, accurately and quickly with the internal application. And most importantly, the laser produces consistent quality, every time.

Ensures Precise Device Marking with High Peak Power & Short Pulse Width

Precision and legibility, while protecting the device, are key requirements for modern laser marking. The Raydiance™ achieves peak power of 100 kW with short pulse width of 4 nanoseconds. That's 10 times the peak power of conventional systems. By combining high peak power with incredibly short pulse width, heat transfer and package penetration are minimized, preventing damage to the device. The system's performance ensures device quality, reliability and ultimately the process profitability. The Raydiance™ is the optimal solution for device marking applications where it is necessary to eliminate the effect of heat transfer and control the maximum penetration depth while achieving high-contrast micro marking.

3-Axis Variable Beam Spot Produces Incredible Machine-Readable Marks

Conventional laser marking systems attempt to correct X/Y/Z axis offset by intentionally de-focusing the laser, resulting in incorrect marking placement and distortion. The physically shifted mounting surface causes the irradiation position and character size to be misaligned in relation to their settings. The Raydiance's 3-Axis system makes these adjustments with simple software settings, eliminating the need for physical adjustments. By easily correcting X/Y/Z offset, the system eliminates mismarking and distortion, producing an incredible range of simple and complex marks that are both human and machine readable.

The Ideal Solution for Fine Pitch High-Contrast Laser Marking

Semiconductor trends towards smaller package sizes and the demand for device traceability require a modern laser marking solution. Smaller and thinner devices with a variety of package material need fine laser power calibration for consistent, high resolution marks. Intelligent setup, monitoring and control simplifies the process. And today's production control techniques require dynamic data management, which provides complete process traceability back to the system, job, lot or other user-defined reference. Whether marking simple alphanumeric text, serial number, date code, barcode or custom symbol, the BPM Microsystems' Raydiance™ is the ideal solution, meeting all of the industry requirements for marking the latest programmable semiconductor devices.

PRODUCT SPECIFICATIONS

Marking Method:	XYZ 3-Axis simultaneous scanning method
Marking Laser:	YVO4 laser, Class 4 Laser Product (IEC60825-1, FDA [CDRH] part 1040.10) [1]
Wavelength:	1064 nm
Output:	13 W
Q-Switch Frequency:	Continuous Wave and Pulse Wave
Character Type:	KEYENCE original font, Trutype and other standard fonts and full library of fonts available
Barcode/DataBars:	Industry standard bar codes and GS1 DataBars
2D Codes:	QR code, micro QR code, DataMatrix[2]
Logo Image:	Standard image formats (CAD) data
Character Size:	(height/width) 0.1 to 125 mm 0.01" to 4.92"

Cooling Method:	Forced air cooling
Voltage/Power Consumption:	100 to 120 VAC/200 to 240 VAC ±10%, 50/60 Hz, 650 VA max
Overvoltage:	Category II
Ambient Temperature - Usage:	0°C to 40°C 32°F to 104°F
Ambient temperature - Storage:	10°C to 60°C 14°F to 140°F
Humidity:	30% to 85% (no condensation)
Shipping Weight:	354 kg
Shipping Dimensions:	(LxWxH): 158x158x97cm
Laser Weight:	152 kg
Laser Dimensions	Laser Dimensions: (LxWxH): 126x115x31.75cm

[1] The laser classification (marking head only) for FDA (CDRH) is implemented based on IEC60825-1 in accordance with the requirements of Laser Notice No.50
[2] 2D code reader add-in (sold separately)

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BPM MICROSYSTEMS
Setting the Standard in Device Programming

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