
Cutting Thin Film Copper and Gold with 355 nm DPSS Laser



Figure A

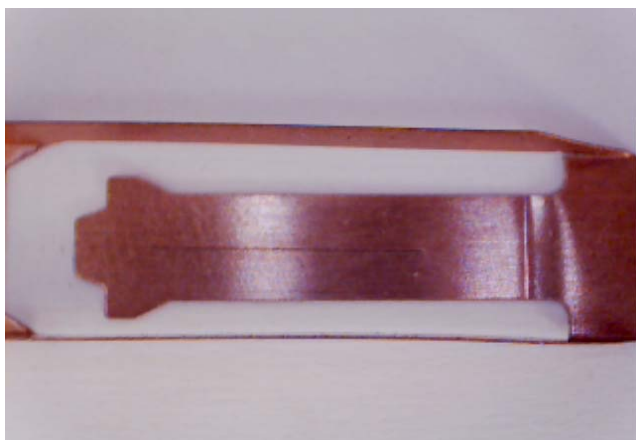


Figure B

Many IR lasers interact well with metals such as stainless and cold rolled steel, high nickel alloys and some aluminum. However, the IR wavelengths are inconsistent with red metals such as copper alloys and gold alloys. On the other hand, 355 nm DPSS lasers are extremely effective with these highly reflective and thermally conductive metals.

The 3510-30, 1 Watt, 355 nm DPSS laser was used to cut both of the thin copper sheets shown in figures A and B.

In Figure A, a 1-Watt DPSS 355 nm laser, scanned at 30 mm per second, cut the 10 x10 mm squares in 1.3 seconds.

By comparison, a 10-Watt DPSS IR laser operating at 7 kHz and scanned at 15 mm per second was also used on the lower left corner of Figure A. After 8 seconds, the 10-Watt IR laser had only slightly discolored the film.

The 3500 series DPSS Laser is an excellent choice for cutting many highly reflective and thermally conductive metals such as copper and gold.

Laser Model	Average Power	Rep Rate	Scan Rate
3510-30	1 Watt @ 355 nm	30 Hz	30 to 300 mm/sec