DPSS Lasers

Bringing Light to Applications

Application Note

355 nm DIRECT DPSS LASER MARKING OF PLASTIC TUBING

Many applications call for specialty plastic tubing to resist chemicals, acids, hot solvents and heat. Often it is difficult to print directly on these materials and labels are an ineffective solution. Many of these plastics can be marked directly with a 355 nm DPSS Laser. 355 nm lasers offer several advantages over typical IR and CO_2 lasers for marking these devices.

DPSS 355 nm UV lasers are able to affect a mark on many plastics via a photo-chemical or photo-bleaching process. This “Cold Marking” process eliminates the thermal damage typically encountered with longer wavelength lasers. The resulting mark becomes a permanent part of the product and requires no inks or solvents. Because many plastics are extremely sensitive to UV wavelengths, marking speeds of 3 to 5 meters per second are achievable with UV powers as low as a few hundred mW.

The two examples shown are Black Polyurethane and Abrasion Resistant White ETFE. Other popular tubing that responds well to direct marking with a 355 nm DPSS laser are Black PTFE, Black Polyethylene, PVC, Nylon, White PVDF, Polycarbonate, Black ETFE, many Rubbers, PETG and many more.

Laser Model	Average Power	Rep Rate	Scan Rate
3510-30	1 Watt @ 355 nm	30 kHz	0.5 to 5 meters per/sec

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