

355 nm DPSS LASER MARKING OF HDPE



HDPE, high-density polyethylene is often selected for its strong intermolecular forces and high tensile strength. It is used in products and packaging such as medical and pharmaceutical containers, milk jugs, detergent bottles, garbage containers, food storage and water pipes.

HDPE is widely used in medical and pharmaceutical packaging. The texture of its surface and the need for fast, permanent, tamperproof labeling makes it a challenge to mark. Labels and inks are not permanent and IR laser marking usually results in a low contrast melt of the HDPE.



DPSS 355 nm UV lasers are able to affect a mark on many types of HDPE via a photochemical 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.

Laser Model	Average Power	Rep Rate	Scan Rate
3510-30	1 Watt @ 355 nm	30kHz	3 to 5 meters / sec