Marking

Smooth Marking of White Plastic

Many consumer electronic goods are manufactured from white plastic, and some have a clear hard coating applied. Achieving a smooth mark on this type of plastic can be difficult to achieve with a standard ns pulsed Laser, since it is easy to melt the hard-coat layer.

Trials have shown that a good mark can be achieved using a short Pulse Laser operating at a relatively low frequency. The sample shown was produced using a 3ns pulse with a scan speed of 500mm/s at a frequency of 150kHz, and the result is a smooth mark which has a uniform appearance.

It is important to optimise the line to line hatch spacing and scanner synchronisation delays in order to achieve this type of mark.

The workstation used a 75mm BEC which produced an 8.1mm ($1/e^2$) diameter beam at the scanner entrance, allowing a 10mm aperture scanner to be used. The scanner was fitted with a 163mm focal length objective lens which gave a 110x110mm field size.

Application Parameters

Type	G4 20W EP-L
Power	20W
M^2	<2
Beam Ø	6.1mm
Scanner/Lens	10mm aperture / 163mm F-theta
Energy	WF31 3ns @150kHz