

# Drilling

## Drilling Ceramic - Alumina

Our range of redENERGY Pulsed Lasers can be used to drill 5 holes per second in 0.38mm alumina. The photo above shows the output side that is 75-80 microns in diameter. The input side is less than 100 microns in diameter.

These holes have been made using a beam wobbling technique to control hole diameter and quality. Our redENERGY Single Mode S-type Laser is an excellent tool for such drilling because it can perform this task with a range of spot sizes from 15 to 20 microns. The high beam quality gives exceptional depth of field for processing allowing the use of larger marking fields or smaller scan heads to complete the task.

A wobble of 1000Hz at a 40 micron radius was applied to a circular path 0.08mm in diameter. This was repeated 40 times in under 200ms. The 30W S-Type laser produces 0.65mJ at 45kHz.

Excessive heating was reduced by offsetting the holes by 0.5mm and then returning to fill in the holes at 0.25 mm spacing shown.

Smaller holes, with a 20 micron output can be created in this material considerably faster.

Related Product



Visit our website to view the full product datasheet  
**redENERGY G4**



## Application Parameters

| Type           | G4 30W HS-S        |
|----------------|--------------------|
| Power          | 30W                |
| M <sup>2</sup> | 1.2                |
| Beam Ø         | 11mm               |
| Scanner/Lens   | 14mm/100mm F-theta |
| Energy         | WF0 0.65mJ @ 45kHz |

Postcard Archive



To browse though SPI's entire library of application postcards, visit the postcard archive:

[spilasers.com/appscards](http://spilasers.com/appscards)

