CASE STUDY

DIAM CONCEPT

DIAM CONCEPT, France

Diacase-10 Date: 14.01.2021

SYNOVA S.A.
Route de Genolier 13
1266 Duillier
Switzerland
www.synova.ch

PRODUCT

Lab Grown Diamonds for Jewellery Industry

Diam Concept – The French lab-grown diamonds factory

Diam Concept uses state-of-the-art plasma CVD reactors to grow diamonds. The process of plasma miming simulates what happens in the Universe.

Diam Concept conceives plasma reactors and controls diamond growth. .

LMJ used for:

- Coring for graphite removal around the CVD crystal
- Slicing seeds out of a CVD crystal

CHALLENGE

Perfect thin and parallel cuts

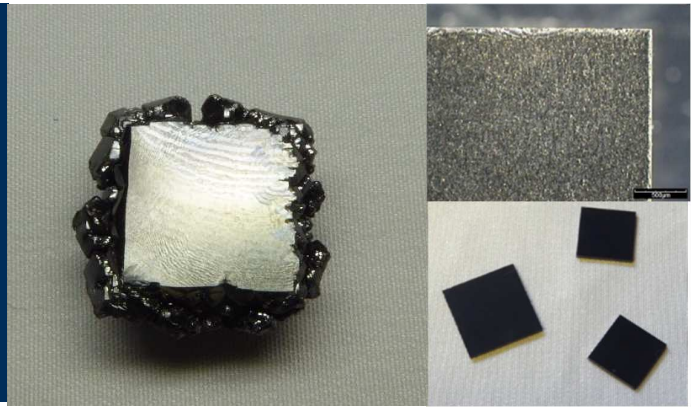
High Quality coring and slicing process

Main processing criteria:

- Variable size range (5x5 up to 8x8 mm)
- Coring process with minimal loss of the clean crystal material
- Cut thin slices with thickness of 250 µm
- Smooth surfaces / low roughness what requires minimal post treatments
- getting max. number of slices out the CVD crystal

Machining technologies able to reach these criteria:

- Dry laser
- Laser MicroJet (LMJ) - water jet guided laser technology



SOLUTION

Perfect parallel Slices, production-proven process, higher yield

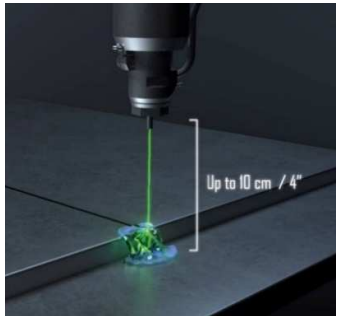
LMJ advantages versus dry laser:

- 2 – 3 x faster process
- perfect thin and parallel slices
- no V-profile in the slice
- low roughness of Ra 0.3 µm
- higher yield number of slices out of the CVD crystal due to minimal and constant parallel kerf

Installed machine type:

- 1 x DCS 50-5
- 100 W green laser

DCS 50-5



Sources: ALTR, Synova