RETICLE RED TUTORIAL

Crystal Fabricator

Turn a picture into a 3D point cloud for sub-surface crystal engraving. Free.

Recorded on the live site · a photo in a 50 × 50 × 20 mm block

reticle-red.com/crystal-fabricator

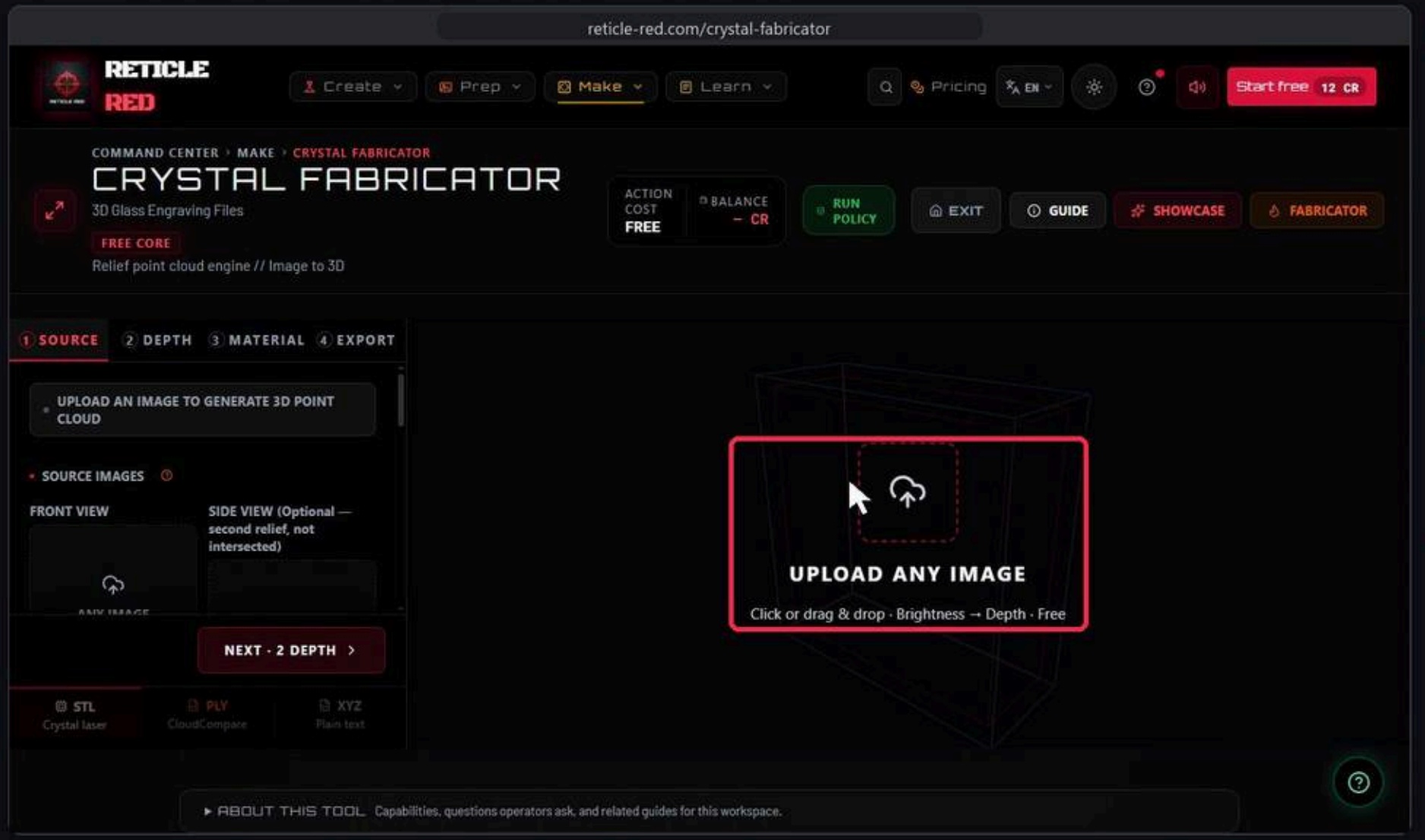
PART 1 OF 1

A photo in a crystal block

Upload, depth, block size and the three exports

RETICLE RED · CRYSTAL FABRICATOR TUTORIAL

A photo in a crystal block — Upload, depth, block size and the three exports



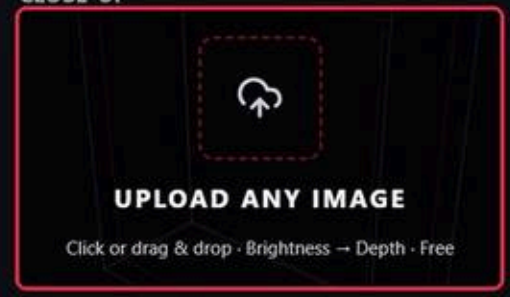
STEP 1 OF 10

Upload a picture

1 SOURCE: click the drop zone and choose an image.

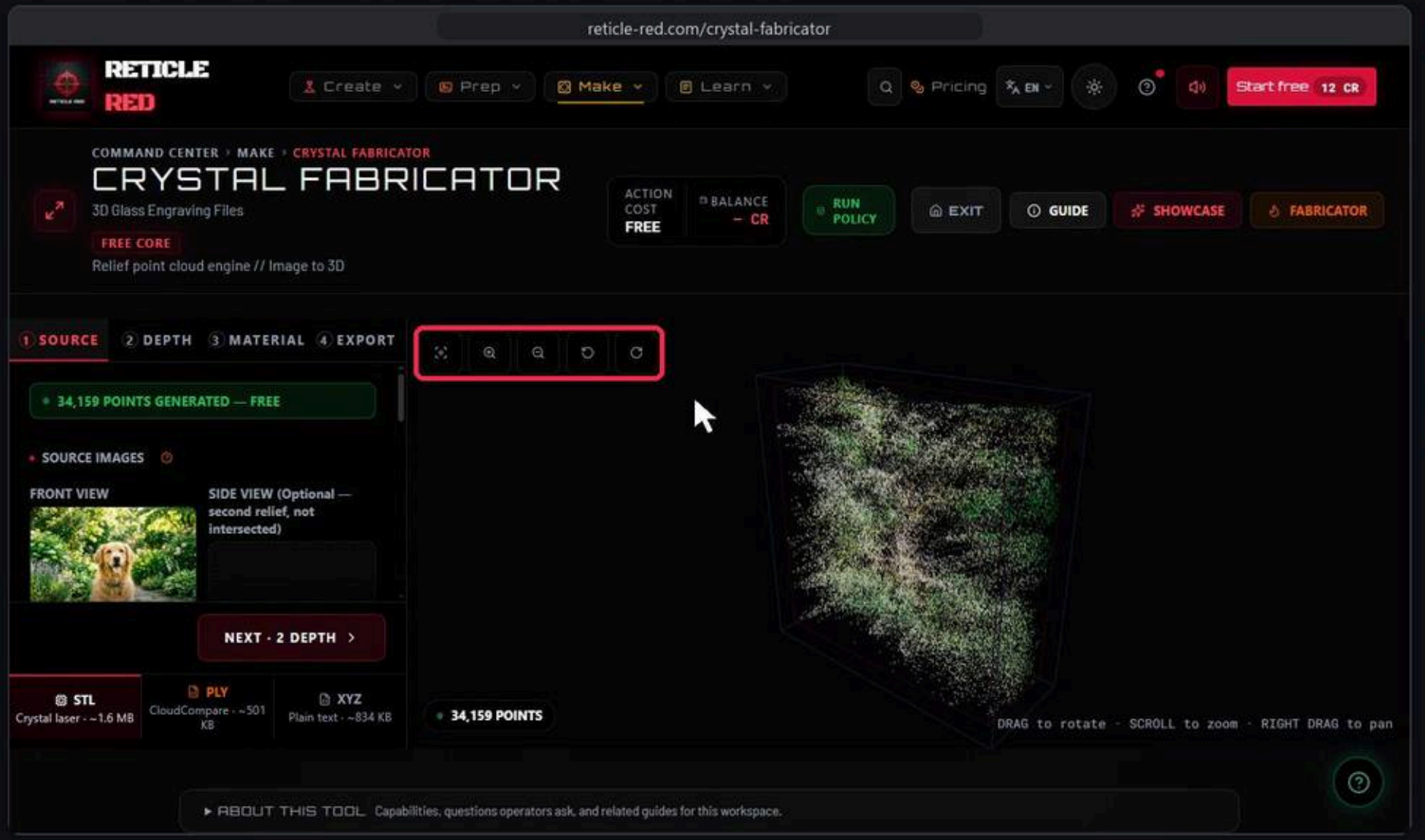
Brightness → depth, built on this device. Free.

CLOSE-UP



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A photo in a crystal block — Upload, depth, block size and the three exports



STEP 2 OF 10

One point per pixel

Brightness sets each point's depth.

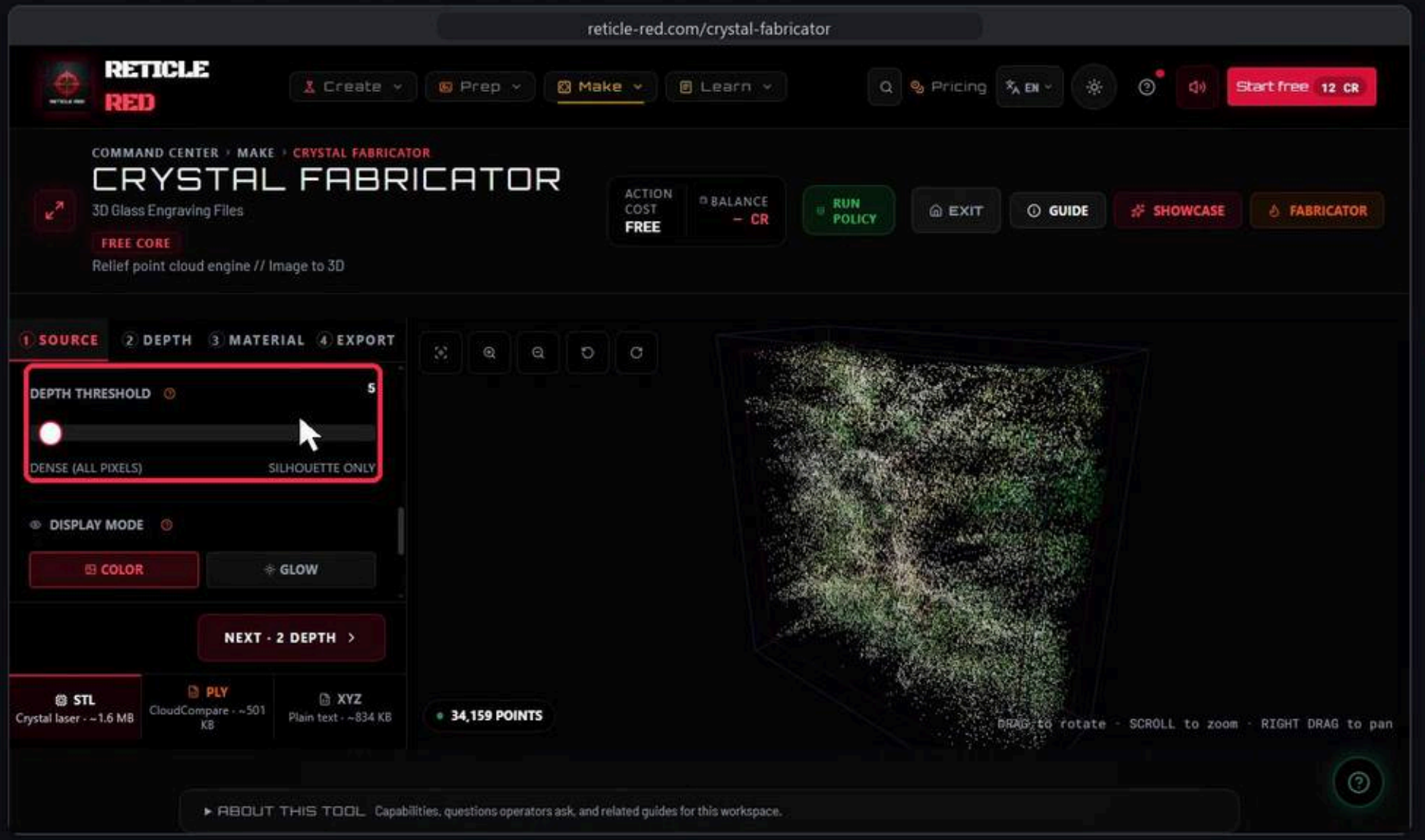
Turn and zoom with the buttons, or drag.

CLOSE-UP



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A photo in a crystal block — Upload, depth, block size and the three exports



STEP 3 OF 10

Depth Threshold

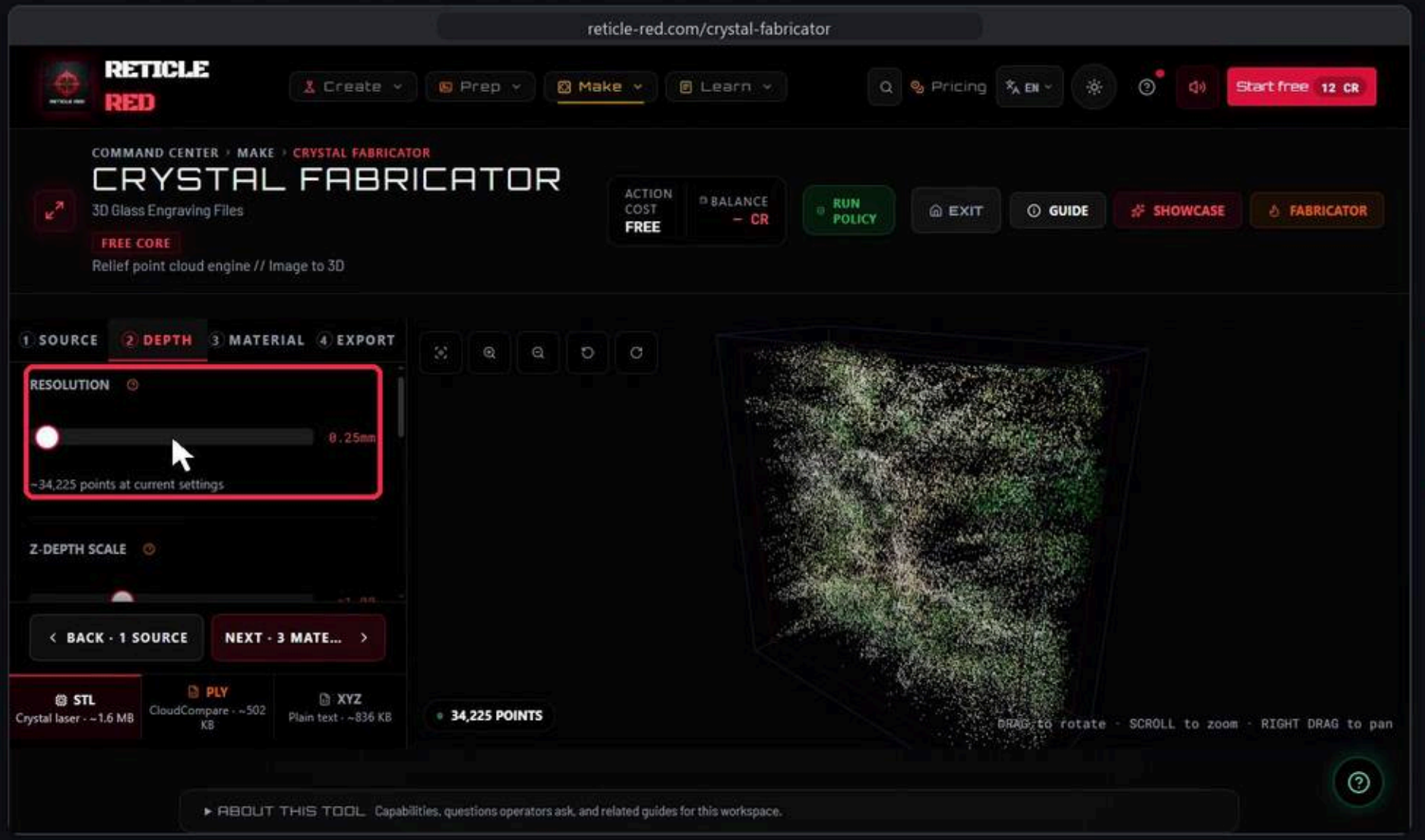
Pixels darker than the threshold are skipped.

A busy background becomes depth too.

CLOSE-UP



A photo in a crystal block — Upload, depth, block size and the three exports



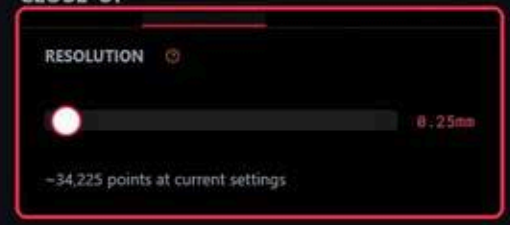
STEP 4 OF 10

Resolution

The spacing between points, in mm.

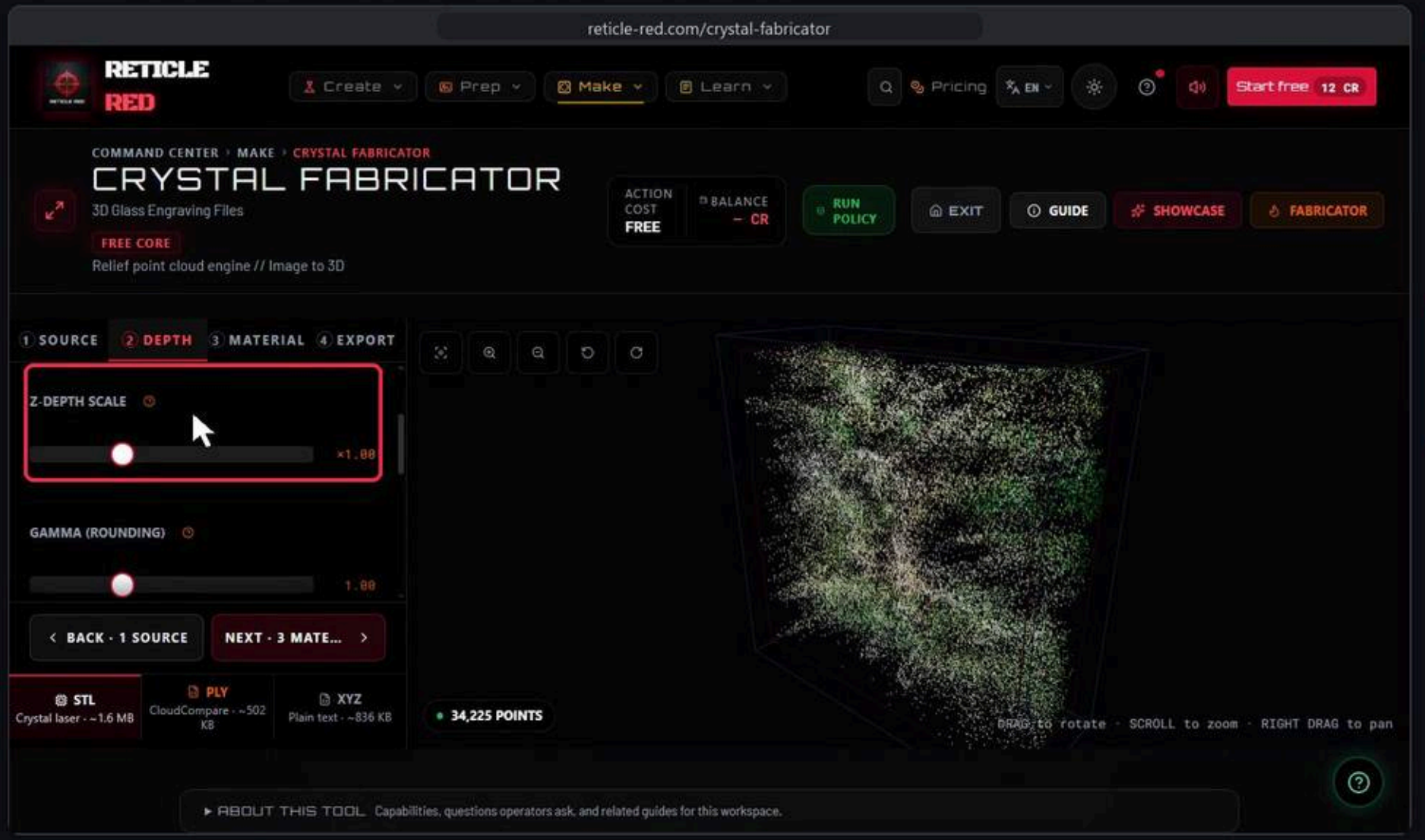
Lower = more points, more detail. Default 0.25 mm.

CLOSE-UP



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A photo in a crystal block — Upload, depth, block size and the three exports



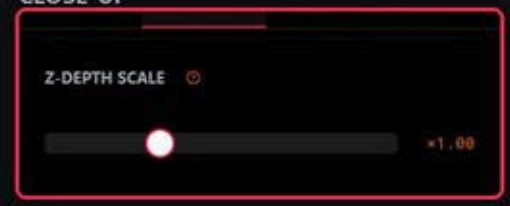
STEP 5 OF 10

Shape the relief

Z-DEPTH SCALE · GAMMA · CONTRAST · Z-OFFSET

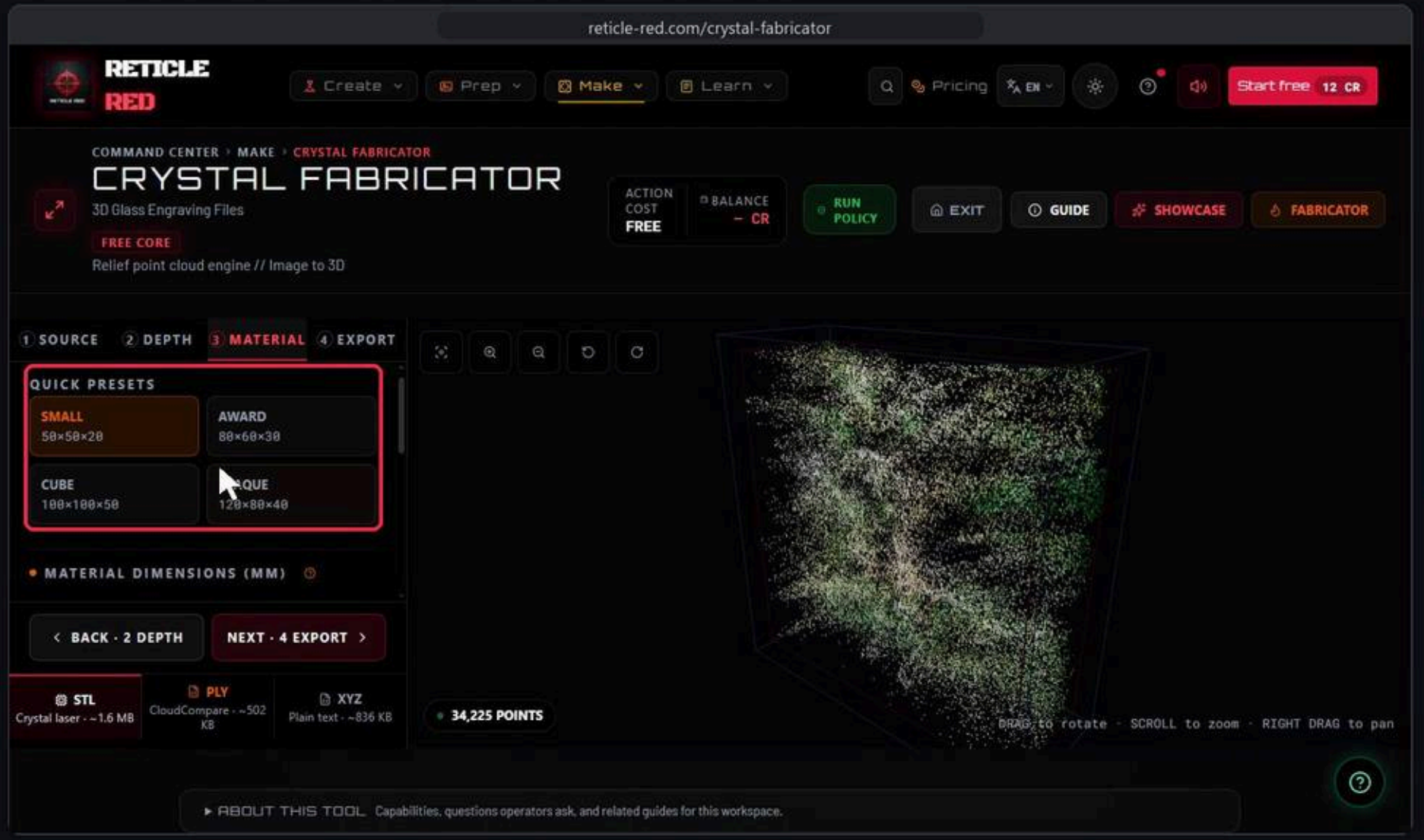
INVERT DEPTH flips near and far.

CLOSE-UP



RETICLE RED · CRYSTAL FABRICATOR TUTORIAL

A photo in a crystal block — Upload, depth, block size and the three exports



STEP 6 OF 10

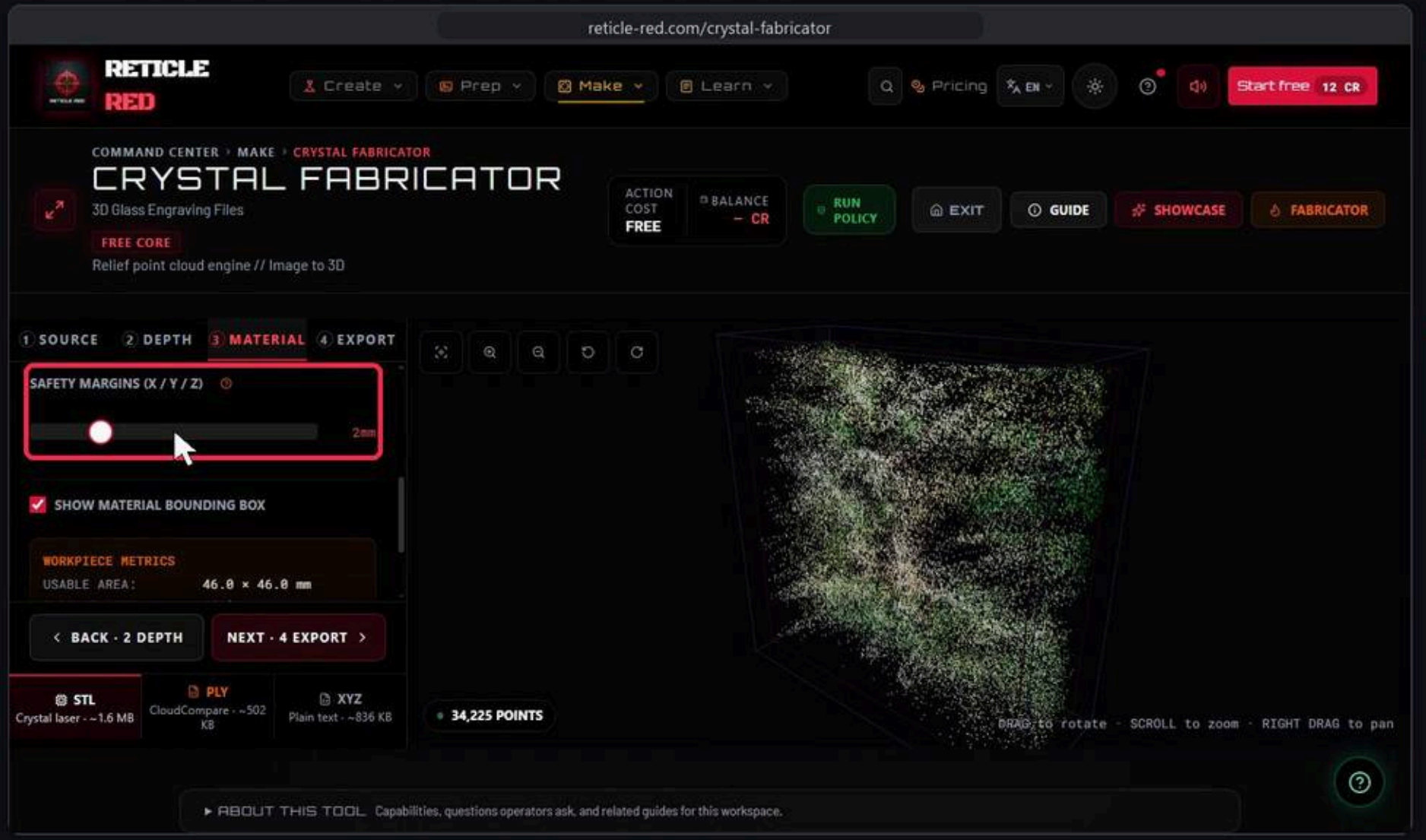
Your block

QUICK PRESETS, or type WIDTH · HEIGHT · DEPTH in mm.

SMALL = 50 × 50 × 20 mm.

CLOSE-UP





STEP 7 OF 10

Safety margin

SAFETY MARGINS keep every point this far inside

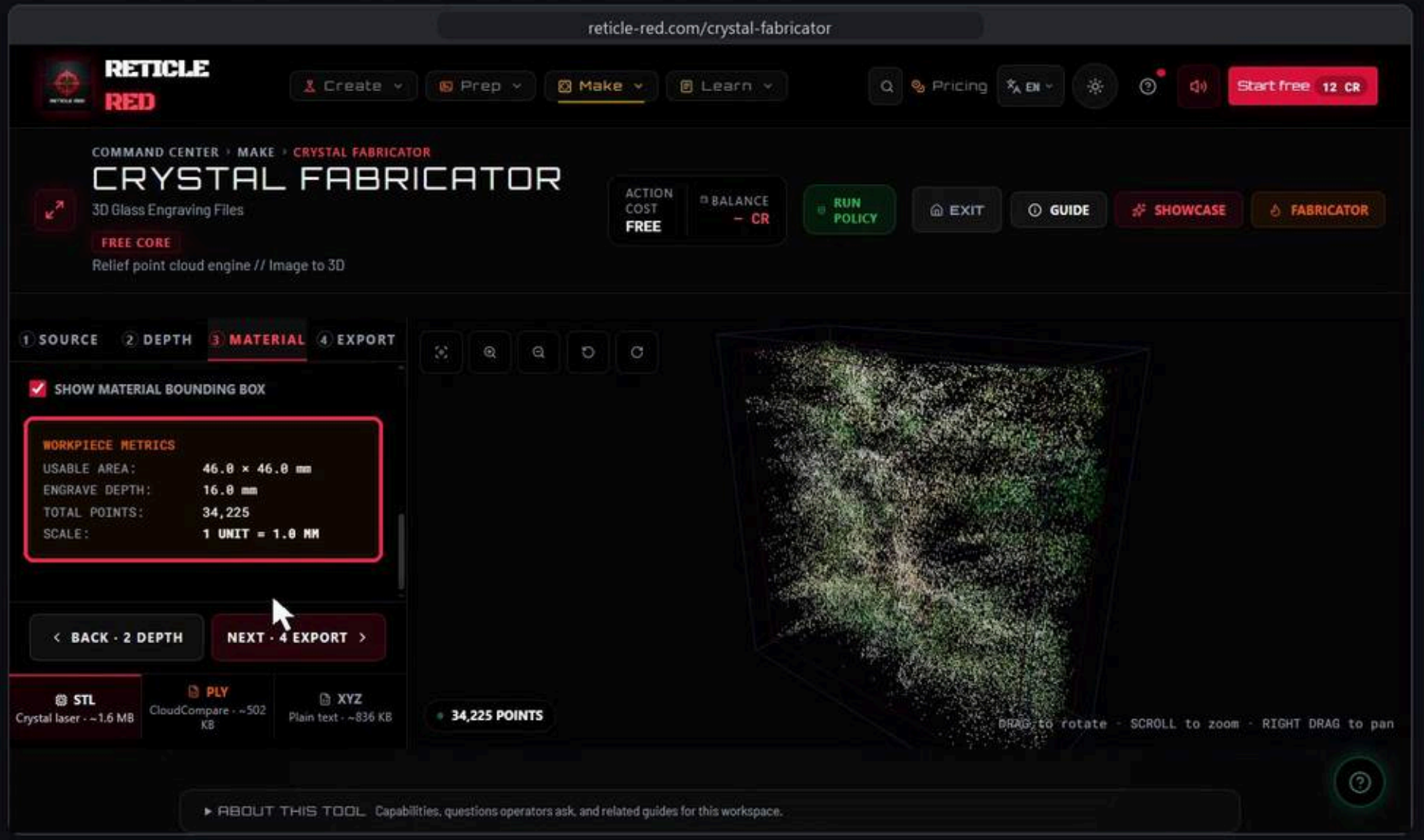
each face, front and back too. 2 mm or more.

CLOSE-UP



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A photo in a crystal block — Upload, depth, block size and the three exports

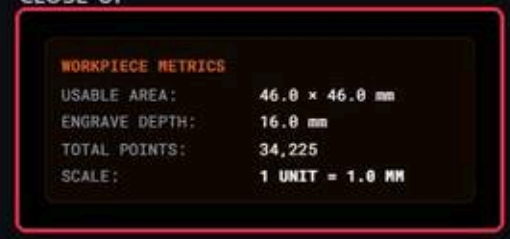


STEP 8 OF 10

Workpiece metrics

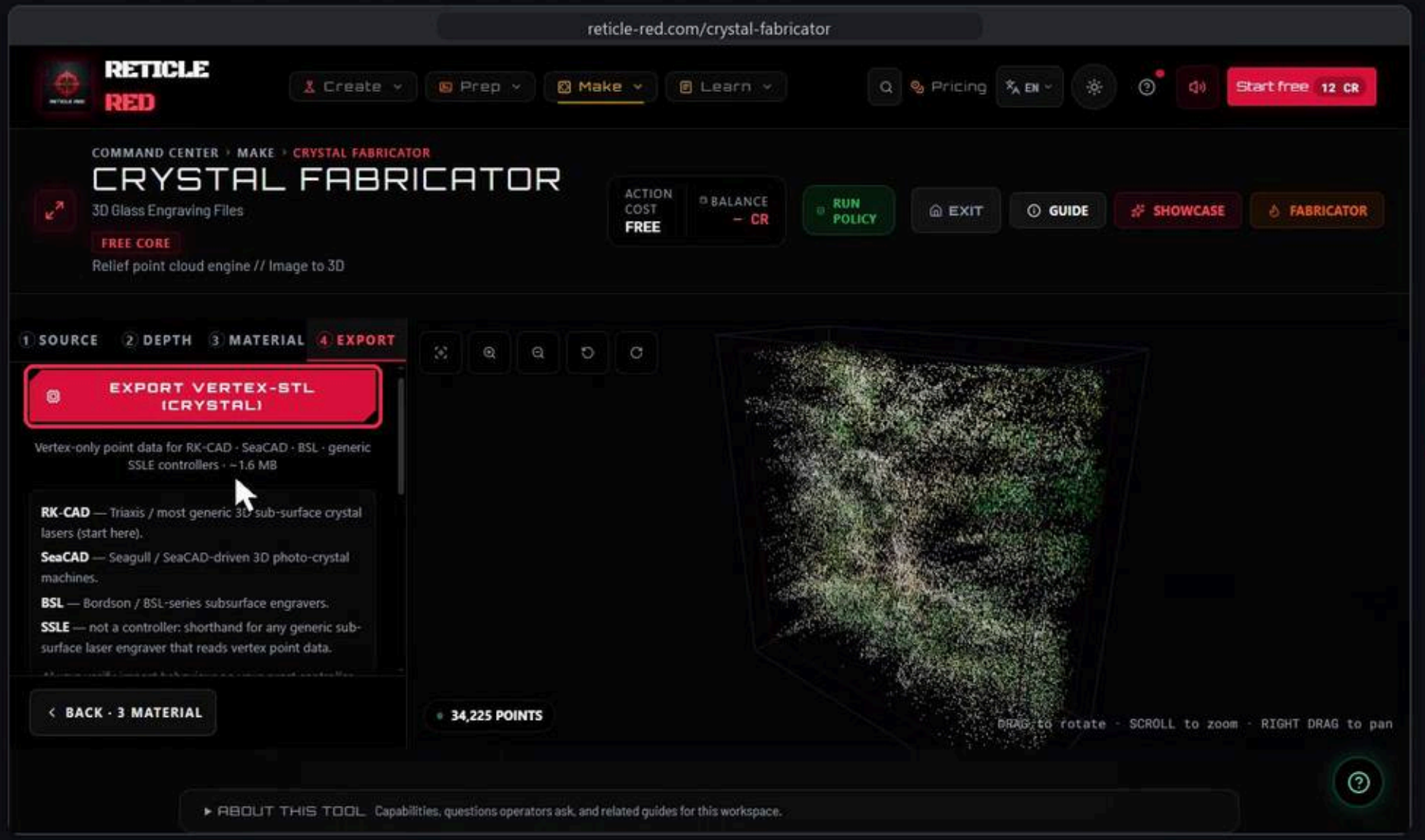
USABLE AREA and ENGRAVE DEPTH inside the margin.

CLOSE-UP



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A photo in a crystal block — Upload, depth, block size and the three exports



STEP 9 OF 10

Three exports

VERTEX-STL: crystal laser software (RK-CAD · SeaCAD · BSL).

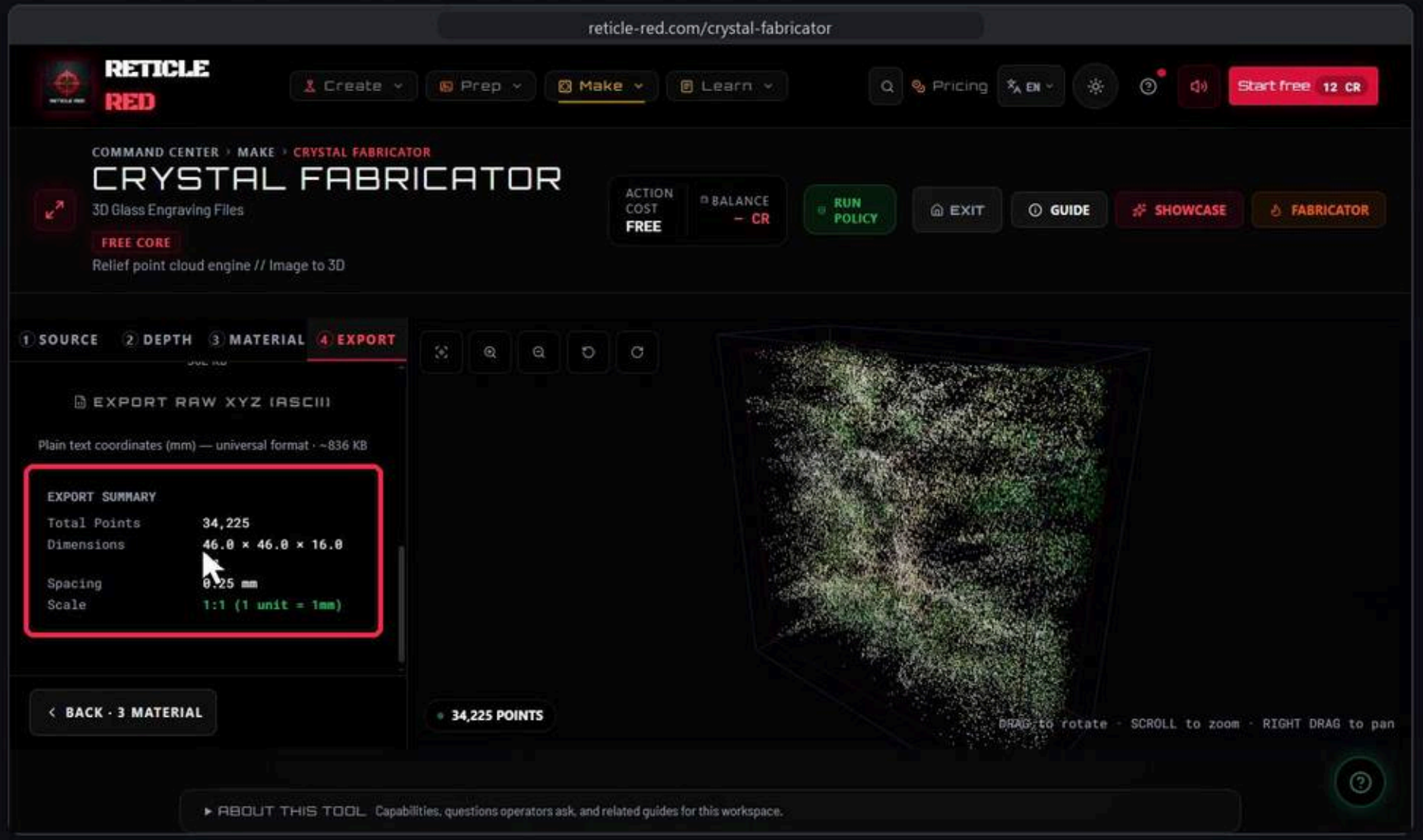
PLY: CloudCompare / MeshLab. RAW XYZ: plain text, mm.

CLOSE-UP



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A photo in a crystal block — Upload, depth, block size and the three exports



STEP 10 OF 10

Export Summary

Points, usable size and spacing, 1 unit = 1 mm.

Test the import on your own controller first.

CLOSE-UP



Your point cloud, ready to engrave

Make → Crystal Fabricator

Free in your browser, no account needed.

More tutorials: reticle-red.com/tutorials

Narration: AI voice (ElevenLabs). Screens: the real reticle-red.com.