



# Microkerf

Laser Cutting, Drilling and Welding

## Minimum Hole sizes

Table 1 below refers to the recommended minimum hole size as laid out in our flatbed laser cutter's specifications. The sizes given are those for a round hole using the material, thickness and process gas specified. It is also possible to convert these sizes from a round hole to a hole of another shape, such as a triangle or square, by comparing the area.

For example, for 4mm thick mild steel cut with oxygen, the table recommends the smallest round hole size to be 2mm in diameter.

$$\begin{aligned} \text{Area of Circle} &= \pi r^2 = \frac{\pi d^2}{4} \\ &= \frac{\pi \times 2^2}{4} \\ &= \pi = 3.14 \text{mm}^2 \end{aligned}$$

Therefore, the size of the smallest square hole possible in this situation would have an area of  $3.14 \text{mm}^2$  and would measure 1.78mm x 1.78mm (1.772mm needs to be rounded up to 1.78mm).

However, even if the areas are the same, a more complex or unusual hole such as a very thin slot, may not be possible to cut. If you are unsure if a hole would be possible to cut, feel free to contact us and check.

Flat Bed Cutters Sheet Thickness (mm)	Minimum Hole Diameter (mm)			
	Mild Steel		Stainless Steel	Aluminium
	Oxygen	Nitrogen	Nitrogen	Nitrogen
0.5	0.49	1.5	0.8	1.0
0.7	0.49	1.5	0.8	1.0
0.9	0.49	1.5	0.8	1.0
1.2	0.75	1.7	0.8	1.25
1.5	0.75	1.7	0.8	1.25
2.0	1.0	2.0	1.0	1.5
2.5	1.25	2.2	1.25	1.75
3.0	1.25	2.5	1.5	2.0
4.0	2.0	3.0	2.0	2.5
5.0	2.4	3.5	2.5	3.5
6.0	2.4	4.0	3.0 (1.0*)	4.0
8.0	3.2	N/A	4.0 (1.0*)	5.0
10.0	4.0 (3.5*)	N/A	5.0 (1.0*)	7.0
12.0	4.8 (4.0*)	N/A	7.5 (1.0*)	8.0
15.0	8.0 (5.0*)	N/A	9.0 (2.0*)	10.0 (6.0*)
20.0	20.0 (10.0*)	N/A	18.0 (2.0*)	13.0 (8.0*)
25.0	25.0 (12.0*)	N/A	20.0 (2.0*)	20.0*

Table 1

(\*) sizes can be achieved using BrightLine cutting feature on our Fibre Laser.

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