

ENDURANCE LASER TEST RESULTS SUMMARY

Test Date: Mar-19

Tests done By: Graham Ham

LASER TYPE: 8Watt

MACHINE: CNC Router

Router Control: MACH3

<u>MATERIAL</u>	<u>LASER</u>	<u>PROCESS</u>	<u>LASER</u>	<u>PASS</u>	<u>FEED RATE</u>	<u>PASSES</u>	<u>RESULTS</u>	RECOMMENDED	NOTE
Description	Power %	Intention	Diameter	%	mm/min	Number	Description		
CUTTING									
Acrylic Black 2.0mm	100	Cut Through	0.1mm	100	100	1	Perfect full cut through	YES	
Acrylic Black 3.0mm	100	Cut Through	0.1mm	100	100	2	Perfect full cut through	YES	
Acrylic Black 4.5mm	100	Cut Through	0.1mm	100	100	3	Perfect full cut through	YES	
Acrylic Black 6.0mm	100	Cut Through	0.1mm	100	100	6	Struggled to full cut through but did, edges a bit rough	NO	
Acrylic RED 3.0mm	100	Cut Through	0.1mm	100	100	3	Perfect full cut through	YES	
Acrylic YELLOW 3.0mm	100	Cut Through	0.1mm	100	100	3	Perfect full cut through	YES	
Acrylic GREEN 3.0mm	100	Cut Through	0.1mm	100	100	5	Good full cut through but struggled	YES/NO	
Acrylic Light BROWN 3.0mm	100	Cut Through	0.1mm	100	100	4	Good full cut through	YES/NO	
Vinyl Folder Cover 0.75mm	100	Cut Through	0.1mm	100	500	1	Perfect full cut through	YES	Use Breathing Mask
Cardboard BLACK 0.4mm	100	Cut Through	0.1mm	100	800	1	Perfect full cut through	YES	
Balsa Wood 3mm	100	Cut Through	0.1mm	100	500	1	Perfect full cut through		
Balsa Wood 10mm	100	Cut Through	0.1mm	100	200	3	Almost full cut through. Additional passes no difference	YES/NO	Up to 6mm should be OK
3 Ply Soft wood 5mm	100	Cut Through	0.1mm	100	100	8	Good full cut through but struggled	YES/NO	Up to 6mm should be OK
Rubber 1.5mm	100	Cut Through	0.1mm	100	200	3	No success only shallow cutting	NO	No further tests
Engraving and Marking									
3 Ply Soft wood 5mm	15	Engraving	0.1	100	1600	1	Perfect Light marking and good detail.	YES	
3 Ply Soft wood 5mm	25	Engraving	0.1	100	1600	1	Perfect Very Darker marking and good detail.	YES	
Bamboo	15	Engraving	0.1	100	1600	1	Perfect Dark marking and good detail.	YES	Bamboo can provide inconsistent results
Australian Hard Wood	15	Engraving	0.1	100	1600	1	Perfect Dark marking and good detail.	YES	30% Power caused excessive burning.
Wood Myrtle, Mid darkish	18	Engraving	0.1	100	1600	1	Perfect Dark marking and good detail.	YES	
Ceramic Floor Tile, Dark Grey	100	Engraving	0.1	100	500	1	Nice result	YES	Results vary widely depending on Colour
Aluminium BLACK Anodized	100	Engraving	0.1	50-75	200-1000	1	Perfect results (Very little difference with speed changes)	YES	Results may vary depending on anodising thickness
Stainless Steel - Mark Solid	100	Marking	0.1	100	1600	1	Perfect Dark marking and good detail.	YES	Google "Mark Solid" for suppliers and details
Stainless Steel - Molly Dry	100	Marking	0.1	100	500	1	Good Dark marking and good detail.	YES	Loctite Moly Dry Film Lubricant LB807