

## Allowable Scan Path Parameters for the OASIS Challenge

Last updated August 14, 2020



The following parameters may be used to generate scan path files compliant with the America Makes Project 3024 XML Schema. Refer to the documentation on the XML Schema and on the baseline scan path generator for additional details on these parameters.

Rows that are highlighted in **blue** are frozen for the purposes of the OASIS Challenge. Rows that are highlighted in **green** are freely selectable within the given range. Note that the ranges are intended to reflect reasonable bounds for the purpose of the OASIS Challenge and are not reflective of the capabilities of the machine or of the XML schema itself.

In addition, a newly created scan path generator may require more parameters than these, in which case these parameters should be captured on the submitted configuration file. In all cases, the output scan files must conform to the conventions of the published XML schema.



Parameter	Units	Nominal	Min	Max	Notes
Laser power	Watts	340			Frozen for OASIS Challenge
Spot size	microns	80			Frozen for OASIS Challenge
Scan speed	mm/second	1250			Frozen for OASIS Challenge
Slicing (layer) thickness	mm	0.06			Frozen for OASIS Challenge
Number of contours	Count		0	5	Specifiable for a particular region.
Contour offset	mm		0	0.5	Positive offset "shrinks" the part inward from the boundary
Hatch offset (from inner-most contour)	mm		0	0.5	Positive offset "shrinks" the hatched area inward from contour. Negative offset not permitted
Hatch center-to-center spacing	mm	0.14	0.02	0.5	Nominal value is a suggested starting point, but may vary depending on the scan strategy
Number of lasers	Count	1			Frozen for OASIS Challenge
Laser on delays	microseconds	100			Frozen for OASIS Challenge
Laser off delay	microseconds	100			Frozen for OASIS Challenge
Jump delay	microseconds	100			Frozen for OASIS Challenge
Mark delay	microseconds	50			Frozen for OASIS Challenge
Polygon delay	microseconds	30			Frozen for OASIS Challenge
Dosing factor	multiplier	1.5			Frozen for OASIS Challenge
Skywriting mode	Integer	0			Frozen for OASIS Challenge
Wobble	True/False	Off			Frozen for OASIS Challenge
Wobble frequency	Hertz	0			Frozen for OASIS Challenge
Wobble amplitude	mm	0			Frozen for OASIS Challenge
"Follow-me" mode	True/False	FALSE			Frozen for OASIS Challenge
"Follow-me" master laser	Identifier	0			Frozen for OASIS Challenge
"Follow-me" sync delay	microseconds	0			Frozen for OASIS Challenge