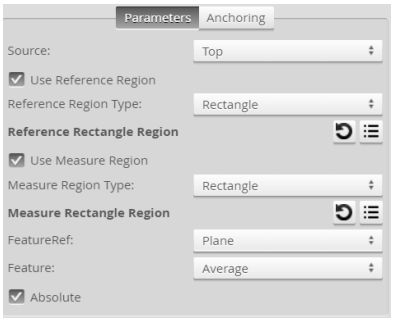
LMI TECHNOLOGIES

Surface Dimension Advanced Tool User Manual

1. General introduction

The Surface Dimension Advanced tool provides a variety of measurements related to the surface dimension, including specific dimensions and statistics.

2. Parameters

Use Reference Region	If unchecked, all valid points will be used to compute the specific feature for reference. Otherwise, only valid points in the region are involved	
Reference Region Type	Type of the reference region, select from the following, • Rectangle • Polygon • Circle • Ellipse • Surface • Surface Intensity	
Use Measure Region	If unchecked, all valid points will be used to compute the specific feature for measure. Otherwise, only valid points in the region are involved	
Measure Region Type	Type of the measure region, select from the following, • Rectangle • Polygon • Circle • Ellipse • Surface • Surface Intensity	
FeatureRef	Specifies the feature of the reference region used to calculate dimensions, including: • Average • Median • Centroid • Max X • Min X • Max Y • Min Y • Max Z • Min Z	

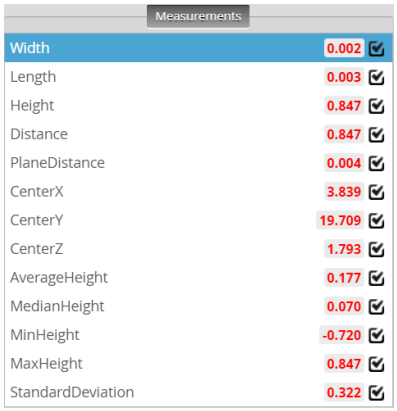
+1 604 636 1011
+1 604 516 8368
info@lmi3D.com
www.lmi3D.com
HEADQUARTERS
9200 Glenlyon Parkway
Burnaby, BC V5J 5J8
Canada

	• Plane • Percentile	
Feature	Specifies the feature of the measure region used to calculate dimensions, including: • Average • Median • Centroid • Max X • Min X • Max Y • Min Y • Max Z • Min Z • Percentile	
Absolute	If not checked, the measurements are signed.	

3. Anchor

X, Y, Z	Let you choose the X, Yor Z measurement of another tool to use as a positional anchor for this tool.	

4. Measurements and Features

Width	Difference along the X axis between two feature points. The difference can be calculated as an absolute or signed result. The difference is calculated by: *Width = Feature* $_{X\ position}$ *– FeatureRef* $_{X\ position}$	
Length	Difference along the Y axis between two feature points. The difference can be calculated as an absolute or signed result. The difference is calculated by: *Width = Feature* $_{y\ position}$ *– FeatureRef* $_{y\ position}$	
Height	Difference along the Z axis between two feature points. The difference can be expressed as an absolute or signed result. The difference is calculated by:	

	Height = Feature $_{Z\ position}$ *–FeatureRef* $_{Z\ position}$	
Distance	Euclidean distance between two feature points.	
PlaneDistance	Euclidean distance between two feature points on the x-y plane.	
CenterX	X coordinate of the average location of two features.	
CenterY	Y coordinate of the average location of two features.	
CenterZ	Z coordinate of the average location of two features.	
AverageHeight	Average distance of the points in measure region to the reference plane.	These measurements are valid only when FeatureRef is set to Plane and are usually used to calculate step height.
MedianHeight	Median distance of the points in measure region to the reference plane.	
MinHeight	Min distance of the points in measure region to the reference plane.	
MaxHeight	Max distance of the points in measure region to the reference plane.	
StandardDeviation	The standard deviation of distances from all points of measure region to the reference plane.	

5. Application Example

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+1 604 516 8368
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Canada