

4

3

2

1

D

D

C

C

B

B

A

A

4

3

2

1

② 3X ϕ .375 ∇ .500
 ① ϕ .425 X 90°, NEAR SIDE
 ④ ∇
 ⑤ ϕ .005 | A | B | C

1.000 ϕ ⑥ ∇ .010 | A | B | C

1.250
 2.500
 ⑦ 5.803

⑩ ϕ 1.500 ∇ .750 ⑧ | R.500
 ⑨ ϕ .002 | D
 IQC-02
 ⑱ ϕ 2.250
 ⑲ ϕ .003 | D-E

⑮ 6X ϕ .500 ∇ .750
 ⑬ ϕ .750 THRU
 ⑪ ϕ .000 (M) | A
 ⑫ ϕ .005 | A | B | C
 IQC-01
 ⑭ ϕ .000 (M) | A | D (M) - E (M) | B
 ⑯ ϕ 0.001 | A

⑳ // .002 | A

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL $\pm 1/16$
 ANGULAR: $\pm 1^\circ$
 TWO PLACE DECIMAL $\pm .010$
 THREE PLACE DECIMAL $\pm .005$

INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5-2009

MATERIAL
 ALUMINUM

FINISH
 -

DO NOT SCALE DRAWING

PROPRIETARY AND CONFIDENTIAL

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	NAME	DATE
DRAWN	I.SERVIN	03/08/23

COMMENTS:



Precision Tool
 DISTRIBUTORS

TITLE:
PRECISION TOOL, LAB, NUMEREX

SIZE	DWG. NO.	REV
A	PTD Numerex	A

SCALE: 1:2 SHEET 1 OF 2

4

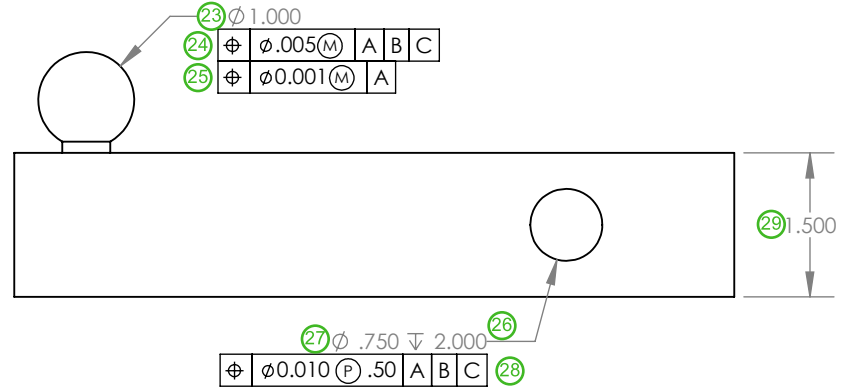
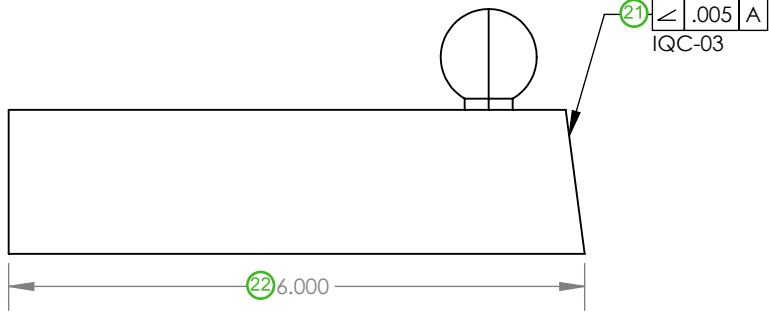
3

2

1

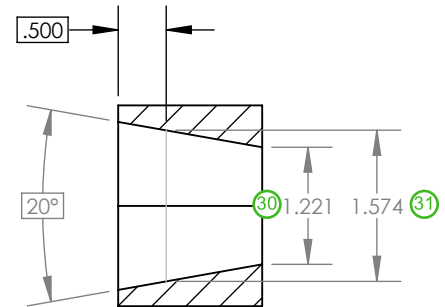
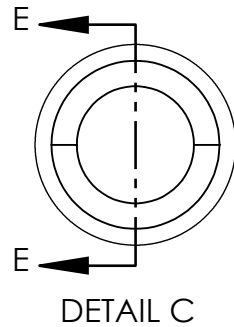
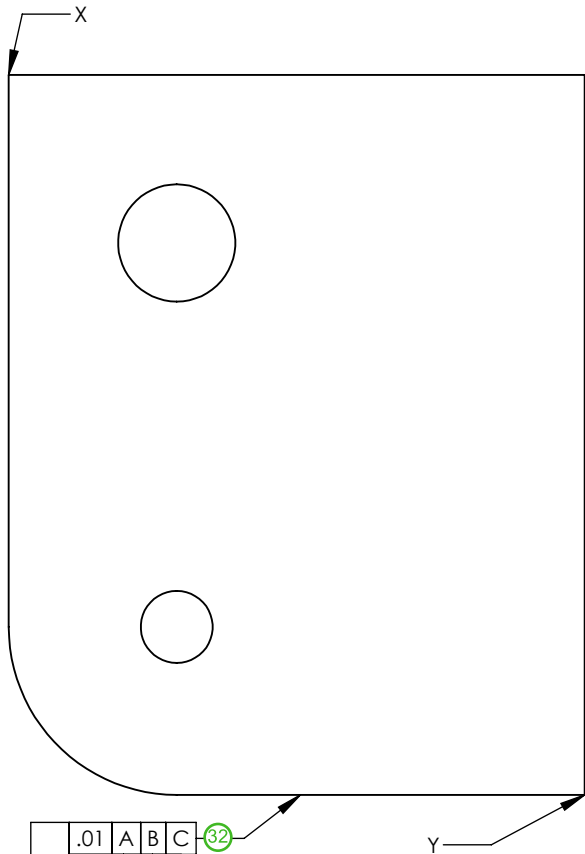
D

D



C

C



B

B

A

A

PRECISION TOOL DISTRIBUTORS		
SIZE A	DWG. NO. PTD Numerex	REV A
SCALE: 1:2		SHEET 2 OF 2

4

3

2

1



ZEISS CALYPSO

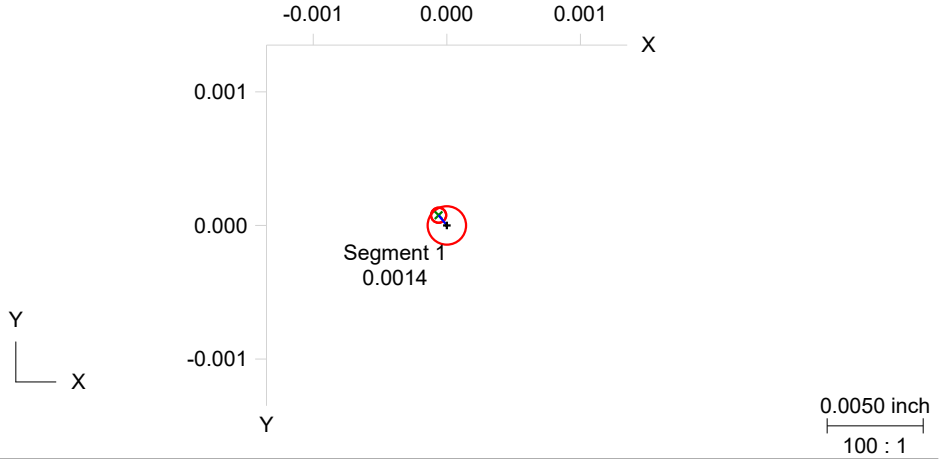
7.4.08

Part name **PTD Numerex Rev A v6**
 Drawing number
 Order number 23-1057
 Variant
 Company
 Department
 CMM Type CON_2014_G2
 CMM No. 000000
 Operator Master
 Text

Last 1 measurements
 ► Approval ≠ Blocked
 Part ident 062323 Run6
 Time/Date 6/26/2023 9:47 AM
 Run IQC
 No. measured values 28
 No. values: red 6
 Measurement Duration 00:00:01.0

Name	Measured value	Nominal value	+Tol	-Tol	Deviation	+/-
Dim 8	0.749848 inch	0.750000	0.005000	-0.005000	-0.000152	
Dim 9	1.499016 inch	1.500000	0.005000	-0.005000	-0.000984	
Dim 10 - IQC-02	0.001368 inch	0.000000	0.002000	0.000000	0.001368	

Best Fit
 X
 Y
 Z
 Angle



Dim 10 - IQC-02.X	-0.000430 inch	0.000000			-0.000430	
Dim 10 - IQC-02.Y	0.000532 inch	0.000000			0.000532	
Dim 11	0.750883 inch	0.750000	0.005000	-0.005000	0.000883	
Dim 12 - IQC-01	0.000436 inch	0.000000	0.005883	0.000000	0.000436	
Dim 12 - IQC-01.(M)	0.000000 inch	0.000000	0.000000	0.000000	0.000000	
Dim 13 - IQC-01	0.006222 inch	0.000000	0.005000	0.000000	0.006222	0.001222
Dim 13 - IQC-01.X	1.751550 inch	1.750000	0.002500	-0.002500	0.001550	
Dim 13 - IQC-01.Y	1.747303 inch	1.750000	0.002500	-0.002500	-0.002697	-0.000197



ZEISS CALYPSO

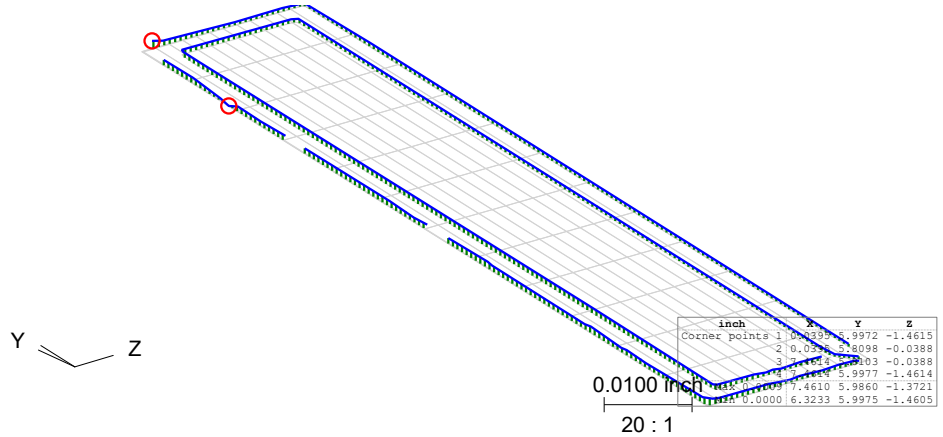
7.4.08

Part name **PTD Numerex Rev A v6**
 Order number 23-1057
 Part ident 062323 Run6
 Operator Master
 Time/Date 6/26/2023 9:47 AM

Name	Measured value	Nominal value	+Tol	-Tol	Deviation	+/-
------	----------------	---------------	------	------	-----------	-----

Dim 21 - IQC-03 0.000896 inch 0.000000 0.005000 0.000000 0.000896

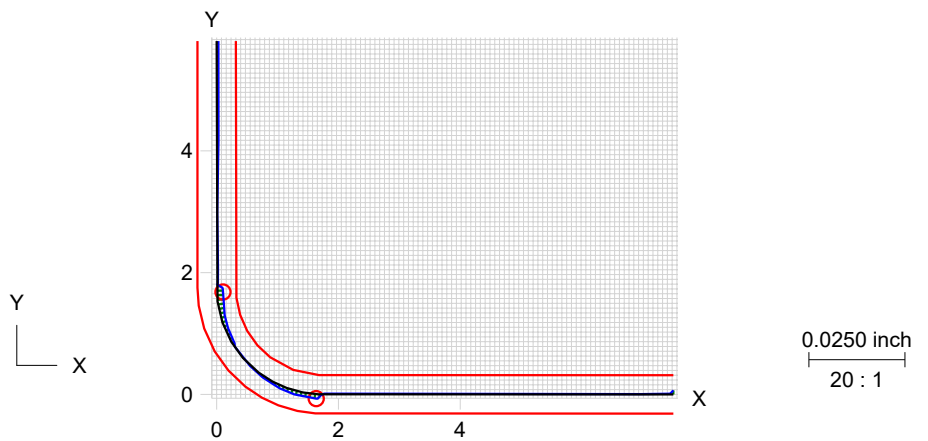
Points 2719
 Filter type Low-pass Spline
 Lc 2.5
 upr
 Vmess[mm/sec] 20.00
 Probe radius 0.059123
 Evaluation method Minimum Feature



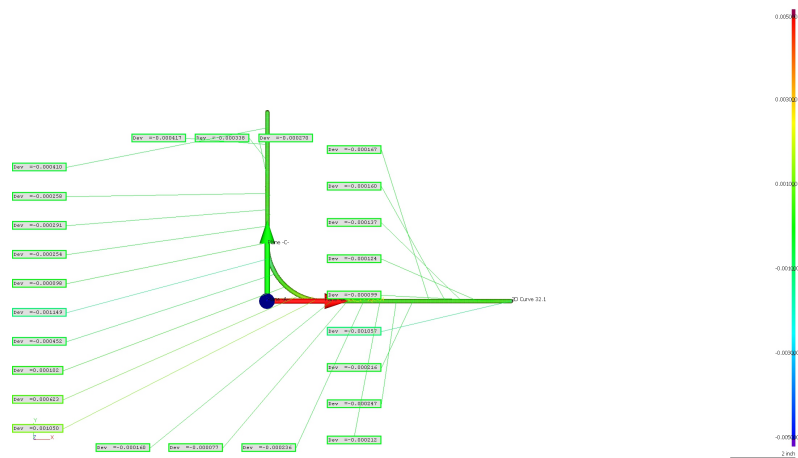
Dim 32-ABC_1 - IQC-04 0.003238 inch 0.000000 0.010000 0.000000 0.003238

Points 500
 Filter type Low-pass Gauss
 Lc 1.91...
 Vmess[mm/sec] 20.00
 Probe radius 0.059074
 Evaluation method Nominal Vector Direction

Best Fit
 Translation Rotation
 X 0.000000 0.000000
 Y 0.000000 0.000000
 Z 0.000000 0.000000



Plot 32-ABC_1 - IQC-04





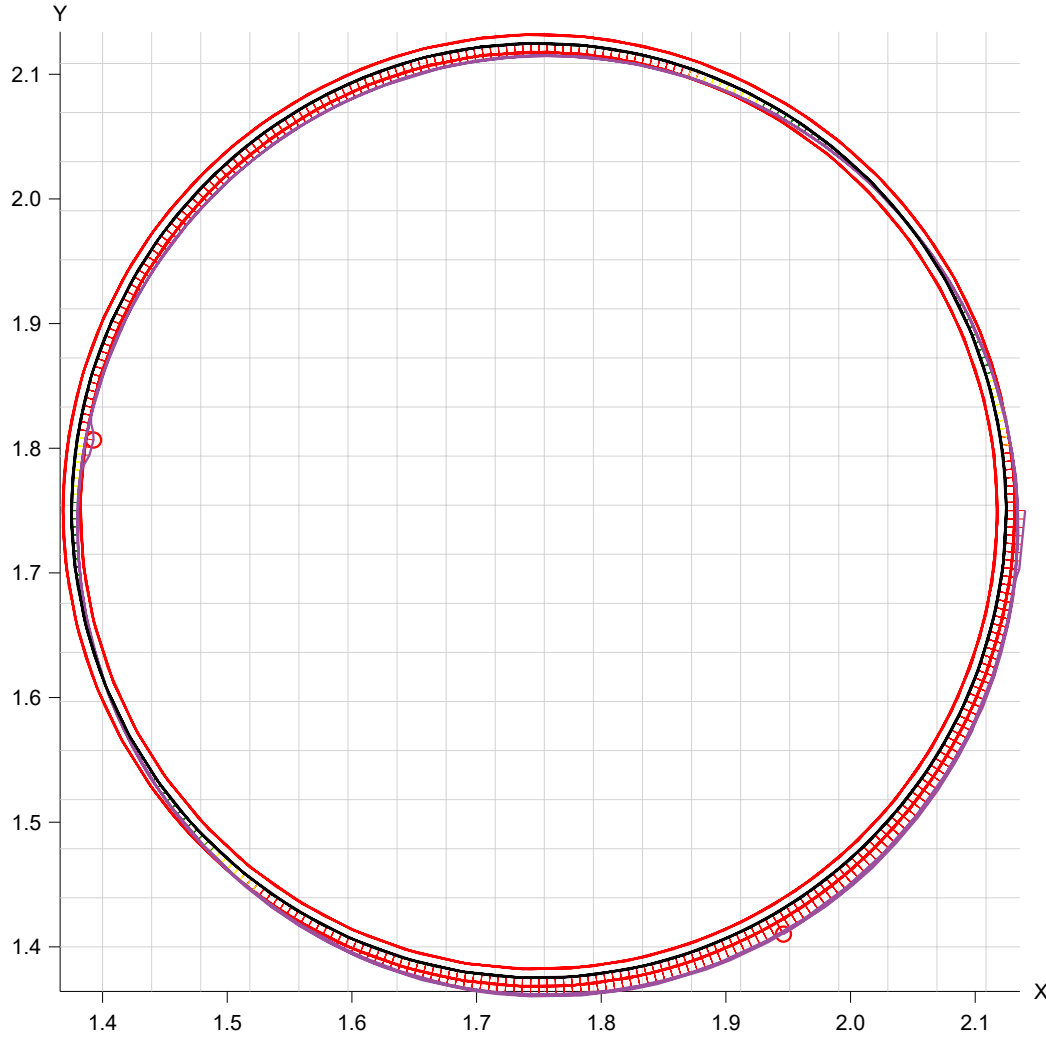
ZEISS CALYPSO

7.4.08

Part name **PTD Numerex Rev A v6**
 Drawing number
 Order number 23-1057
 Company
 Department
 CMM No. 115251

Part ident 062323 Run6
 Time/Date 6/26/2023 9:47 AM
 Operator Master
 Text

- In tolerance
- Out of tolerance
- Out of warning limit
- Nominal value
- Tolerances
- Segment 1
- Extreme point



Best Fit		
	Translation	Rotation
X	0.000000	0.000000
Y	0.000000	0.000000
Z	0.000000	0.000000

Name	Measured value	Upper limit Lower limit	Points	Filter type	Lc	Probe radius	Vmess[mm/sec]	Evaluation method
Profile -Cylinder D-ABC	0.007499	0.003000 0.000000	1501		-	0.059074	3.000	Nominal Vector Direction

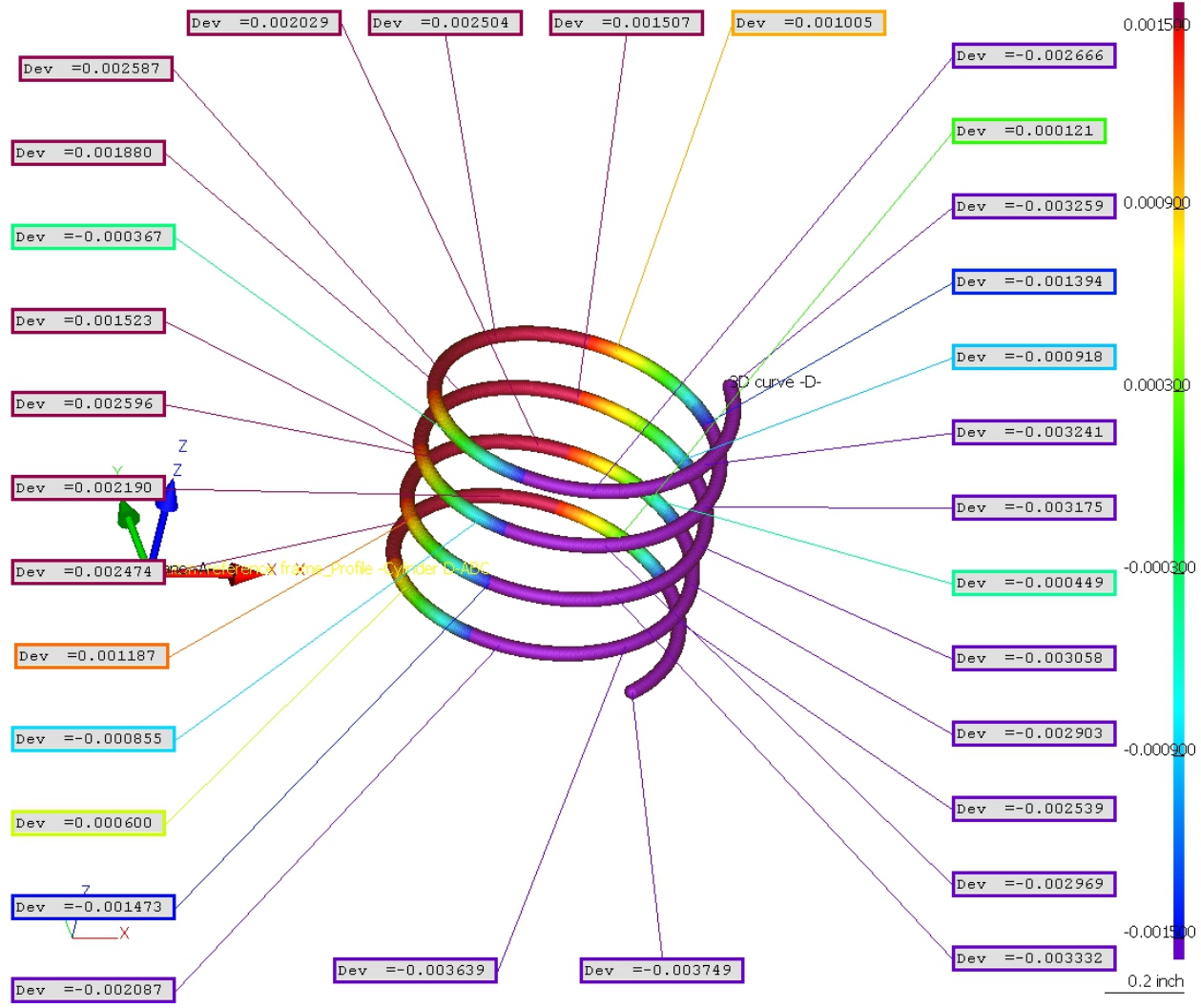


ZEISS CALYPSO

7.4.08

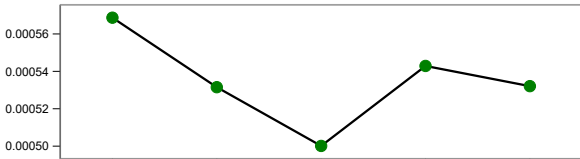
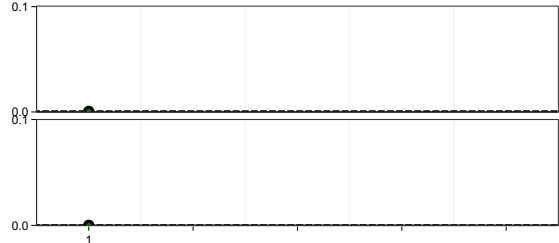
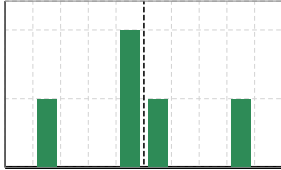
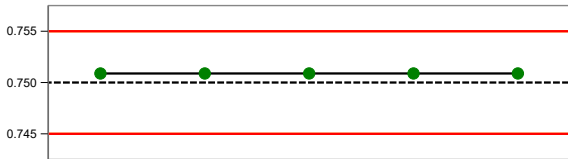
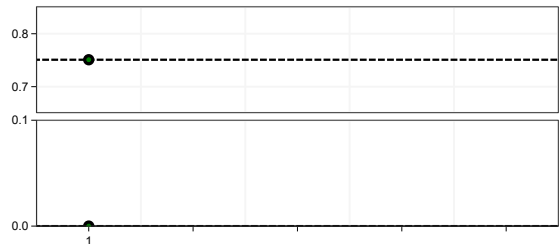
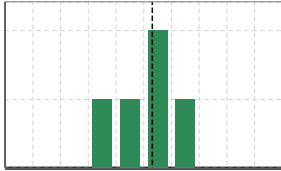
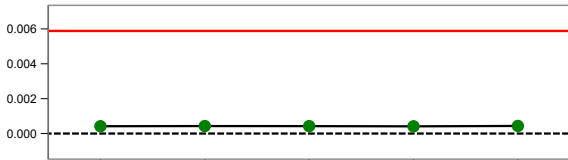
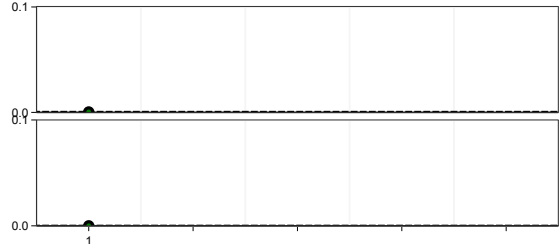
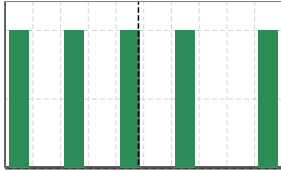
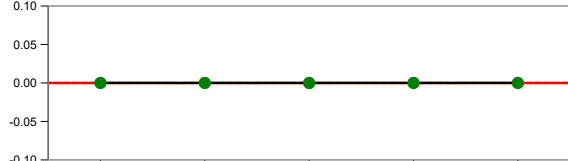
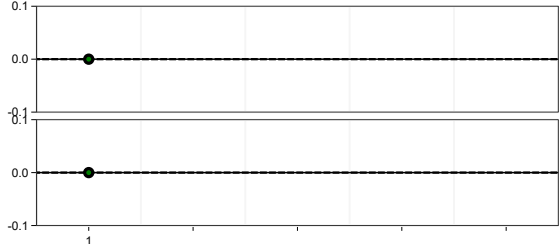
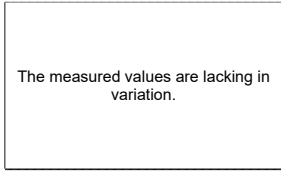
Part name **PTD Numerex Rev A v6**
 Drawing number
 Order number 23-1057
 Company
 Department
 CMM No. 115251

Part idnt 062323 Run6
 Time/Date 6/26/2023 9:47 AM
 Operator Master
 Text



Name

Plot -Cylinder D-ABC

Characteristic	+Tol	-Tol	Value pattern	Control chart	Histogram	Correction value												
Nominal value																		
⊙ Dim 10 - IQC-02.Y																		
0.000000			 <table border="1" data-bbox="645 395 1155 464"> <tr> <td>Minimum</td> <td>0.000500</td> <td>Average value</td> <td>0.000535</td> </tr> <tr> <td>Maximum</td> <td>0.000569</td> <td>Std dev.</td> <td>0.000025</td> </tr> <tr> <td>Range</td> <td>0.000069</td> <td></td> <td></td> </tr> </table>	Minimum	0.000500	Average value	0.000535	Maximum	0.000569	Std dev.	0.000025	Range	0.000069				 <p>Cp Cpk</p> <p>No distribution</p>	
Minimum	0.000500	Average value	0.000535															
Maximum	0.000569	Std dev.	0.000025															
Range	0.000069																	
∅ Dim 11																		
0.750000	0.005000	-0.005000	 <table border="1" data-bbox="645 699 1155 767"> <tr> <td>Minimum</td> <td>0.750881</td> <td>Average value</td> <td>0.750883</td> </tr> <tr> <td>Maximum</td> <td>0.750884</td> <td>Std dev.</td> <td>0.000001</td> </tr> <tr> <td>Range</td> <td>0.000003</td> <td></td> <td></td> </tr> </table>	Minimum	0.750881	Average value	0.750883	Maximum	0.750884	Std dev.	0.000001	Range	0.000003				 <p>Cp Cpk</p> <p>No distribution</p>	-0.001
Minimum	0.750881	Average value	0.750883															
Maximum	0.750884	Std dev.	0.000001															
Range	0.000003																	
┴ Dim 12 - IQC-01																		
0.000000	0.005883	0.000000	 <table border="1" data-bbox="645 1002 1155 1070"> <tr> <td>Minimum</td> <td>0.000414</td> <td>Average value</td> <td>0.000425</td> </tr> <tr> <td>Maximum</td> <td>0.000436</td> <td>Std dev.</td> <td>0.000008</td> </tr> <tr> <td>Range</td> <td>0.000022</td> <td></td> <td></td> </tr> </table>	Minimum	0.000414	Average value	0.000425	Maximum	0.000436	Std dev.	0.000008	Range	0.000022				 <p>Cp Cpk</p> <p>No distribution</p>	0.000
Minimum	0.000414	Average value	0.000425															
Maximum	0.000436	Std dev.	0.000008															
Range	0.000022																	
┴ Dim 12 - IQC-01.(M)																		
0.000000	0.000000	0.000000	 <table border="1" data-bbox="645 1305 1155 1374"> <tr> <td>Minimum</td> <td>0.000000</td> <td>Average value</td> <td>0.000000</td> </tr> <tr> <td>Maximum</td> <td>0.000000</td> <td>Std dev.</td> <td>0.000000</td> </tr> <tr> <td>Range</td> <td>0.000000</td> <td></td> <td></td> </tr> </table>	Minimum	0.000000	Average value	0.000000	Maximum	0.000000	Std dev.	0.000000	Range	0.000000				 <p>The measured values are lacking in variation.</p> <p>Cp Cpk</p> <p>No distribution</p>	0.000
Minimum	0.000000	Average value	0.000000															
Maximum	0.000000	Std dev.	0.000000															
Range	0.000000																	



Metrology Services Repeatability Study

Summary

Part name **PTD Numerex Rev A v6**

CMM Type - CMM No. 000000

Time/Date 6/26/2023 10:17 AM

Number of measurements: 6

Units MM

Comment

Characteristic	Nominal	Upper Tol	Lower Tol	Range	P/T Ratio	Acceptance		
						Tolerance(um)		
						>30	30-15	<15
Dim 8	0.7500	0.0050	-0.0050	.0002	4.00%			
Dim 9	1.5000	0.0050	-0.0050	.0000	.07%			
Dim 10 - IQC-02	0.0000	0.0020	0.0000	.0001	15.11%			
Dim 10 - IQC-02.X	0.0000			.0001				
Dim 10 - IQC-02.Y	0.0000			.0001				
Dim 11	0.7500	0.0050	-0.0050	.0000	.07%			
Dim 12 - IQC-01	0.0000	0.0059	0.0000	.0000	.90%			
Dim 12 - IQC-01.(M)	0.0000	0.0000	0.0000	.0000				
Dim 13 - IQC-01	0.0000	0.0050	0.0000	.0002	7.84%			
Dim 13 - IQC-01.X	1.7500	0.0025	-0.0025	.0002	8.83%			
Dim 13 - IQC-01.Y	1.7500	0.0025	-0.0025	.0000	1.07%			
Dim 21 - IQC-03	0.0000	0.0050	0.0000	.0000	1.57%			
Dim 32-ABC_1 - IQC-04	0.0000	0.0100	0.0000	.0004	8.15%			
Plot 32-ABC_1 - IQC-04				.0000				
Dim 32-ABC_2 - IQC-04	0.0000	0.0100	0.0000	.0002	4.77%			
Plot 32-ABC_2 - IQC-04				.0000				
Dim 32-ABC-FFS - IQC-04	0.0000	0.0100	0.0000	.0001	1.80%			
Plot 32-ABC-FFS - IQC-04				.0000				
Dim 33-AD_1 - IQC-04	0.0000	0.0050	0.0000	.0000	2.02%			
Plot 33-AD_1 - IQC-04				.0000				
Dim 33-AD_2 - IQC-04	0.0000	0.0050	0.0000	.0000	2.20%			
Plot 33-AD_2 - IQC-04				.0000				
Dim 33-AD-FFS - IQC-04	0.0000	0.0050	0.0000	.0001	2.76%			
Plot 33-AD-FFS - IQC-04				.0000				
Dim 34-A - IQC-04	0.0000	0.0010	0.0000	.0004	126.59%			
Plot 34-A - IQC-04				.0000				
Profile -Cylinder D-ABC	0.0000	0.0030	0.0000	.0000	3.12%			
Plot -Cylinder D-ABC				.0000				