MeasureOD<sup>®</sup> User Guide

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## I. Introduction

Welcome to the MeasureOD<sup>®</sup> User Guide. This manual will provide you basic instructions on how to implement and use the MeasureOD<sup>®</sup> software. Use of this software is subject to the End Users License Agreement (EULA) which is located on our website at www.measureod.com.

## II. Reference Documents

- MeasureOD<sup>®</sup> End User License Agreement (EULA), Roth Technologies, LLC
- mSPECIFY<sup>®</sup> User Guide, Roth Technologies, LLC
- mDATA® User Guide, Roth Technologies, LLC
- MeasureOD® Install Guide, Roth Technologies, LLC

## III. Necessary Components

The following components are necessary in order to run the MeasureOD<sup>®</sup> system:

1. The software which is included on the Installation CD that was provided with your order. The latest released software may also be downloaded from our website at www.measureod.com.

2. The MySQL ODBC driver must be loaded on your test computer.

3. Your computer that is used to run the software MUST be connected to the Internet and Port 3306 must be open on your Test Computer and Network. There is an interchange of material data between the computer and the MySQL Server. If the interchange of data is slow and/or interrupted, the program may not run correctly or timeout.

## 4. Your Laser Micrometer Measurement System:

- Test Computer: The test computer performs the following functions:
  - (a) runs the MeasureOD® software,
  - (b) communicates with your Laser Micrometer, and
  - (c) communicates with the MySQL database which contains the configuration data and stores the test results
- Laser Micrometer (not provided)
- Applicable connection between the Test Computer and the Laser Micrometer System. Depending on the Laser Micrometer, your connection may be via (a) Shared memory, (b) Serial Port (RS-232), and/or (c) Data Acquisition System (A/D Support)

Note: The MeasureOD® System provided does NOT include the Laser Micrometer System.

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## IV. Running the Program

Execute the MeasureOD<sup>®</sup> program by double clicking program icon to execute it.



## V. Using the MeasureOD® System

In a production environment, the following steps may be taken for obtaining data using the MeasureOD<sup>®</sup> system once it has been configured using the mSPECIFY<sup>®</sup> software utility program.

Step 1: Log into the system. Your company has been provided a twelve to sixteen character length password for logging into the MeasureOD® system. You may submit a request to <u>sales@cathcad.com</u> to change your password character string. This character string identifies your company within the MeasureOD® system.

	MeasureOD <sup>®</sup> Version 3.5.0
	Convright: 2015-2018 Roth Technologies LLC
	O/S SYSTEM: Windows 7/Server 2008 R2
	SUPPORTED: MySQL 5.1 ODBC Driver Installed (V5.1.13)
	By Logging into this system, you agree to our EULA terms
	and conditions (obtain at www.measureOD.com)
	Please enter your User Code:
Check to store	
User Access Code	

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After logging into the system, the Main Form will appear on the screen as shown. The software at this point is waiting for the LM Interface and Product Number to be selected from the drop down menus.

- Configuration of a test part number is done via the utility program, mSPECIFY®.
- Optionally, the test parameters may be entered at the time of running the software by selecting MANUAL from the Product Number drop down menu.

TATUS BAR			LM INTERFACE	PRODUCT	NUMBER	DESCRIPTION	
VAITING: Please select the LM INTERFA	CE from the Drop Down E	Sox		•		-	
ONFIGURATION	STATISTICS	GLOBAL	LOCAL	N/A	X-AXIS	Y-AXIS	START
Jpper Spec Limit	Mean						PAU SE
ower Spec Limit	Standard						RESET
Jominal	Maximum						DDUIT
Ine Speed (fpm)	Minimum						PRINT
Jpper Graphical	СРК						EXIT
ower Graphical	STATE						
iraph Time AutoScale 👻	Sample Count						
Хізріау Сон Фрй	Footage (feet)						
Jumber of Averages 10	CPK (0 1.0 (	1.33 (* 2.0					
(-Y Axes AVG @ OTT C ON				STATUS LEDS			ZUMBACH
1 1.8- 0.6- 0.4 0.2-			1				

The LM Interface may be selected from the drop down menu

MeasureOD® V3.5.0					_ 8 %
STATUS BAR		LM INTERFACE	PRODUCT NUMBER	DESCRIPTION	
WAITING: Please select the LM INTERFA	ICE from the Drop Down Box		<u> </u>	-	
CONFIGURATION	STATISTICS GLOBAL	LaserLinc Total Vu	X-AXIS	Y-AXIS	START
Upper Spec Limit	Mean	Zumbach ODAC Laser	ng D_Q Ai_ometer		PAUSE
Lower Spec Limit	Standard	Keye	Axis		RESET
Nominal	Maximum				PRINT
Line Speed (fpm)	Minimum				EVIT
Upper Graphical	СРК				EXII
Lower Graphical	STATE				
Graph Time AutoScale -	Sample Count				
Display Corr Con	Footage (feet)				
Number of Averages 10	CPK @ 1.0 C 1.33 C 2.0			_	
X-Y Axes AVG (@ OFF (C ON		ST.	ATUS LEDS		
1 		1 0.6			

Upon selecting a valid Product Number, the START button becomes active. When you are ready to begin taking data, select the START button

STATUS BAR		PRODUCT NUMBER DI	ESCRIPTION	
PAUSED: Select the START button when re	ady to take data	P100000 - 0.	.0250" X 0.0270" PI on CU Mandre	
CONFIGURATION	GLOBAL STATISTICS	LOCAL STATISTICS	REAL TIME MEASUREMENTS	INTERFACE
Upper Spec Limit 0.02800	Mean	Mean	0.023970	THE COMPANY
Lower Spec Limit 0.02200	Standard Deviation	Standard Deviation	0.024870	START
Nominal 0.02500	Minimum	Minimum	0.025453	PAUSE
MFG Line Speed (fpm) 6.0	Maximum	Maximum	0.025068	RESET
Upper Graphical Limit 0.03000	СРК	СРК	0.026114	
Lower Graphical Limit 0.02000	Number of Samples	Number of Samples	0.026397	PRINT
Global Graph Time One Hour 🔻	STATE	STATE	0.026446	VIEW EXCE
Number of Averages 1	CPK CRITERIA @ 1.0 C 1.33 C 2.0	Spool Footage (feet)	0.024153	EXIT
Braid Mode @ OFF C ON			DEMO CMDS>	UP+ DOV
measureOD™	Global Graph	mea	asureOD™ Local Graph	
0.028 (1) (1) (1) (1) (1) (1) (1) (1)	2160 2880 3600	0.028 (***) 0.026 ************************************	48 72	- 96 1

#### MANUAL CONFIGURATION

In order to configure a MANUAL configuration the following items must be entered in order to a product measurement to be made by the MeasureOD<sup>®</sup> software:

- Upper Spec Limit (in inches)
- Lower Spec Limit (in inches)
- Mfg Line Speed (in feet per minute)
- Upper Graphical Limit (in inches)
- Lower Graphical Limit (in inches)
- Number of Averages (range from 1 to 25 with the default at 2)
- XY Axis Averaging (if OFF, then the X-Y measurements are treated independently and if ON then the X-Y measurements are averaged). This option only applies to dual or trio based laser micrometer systems.
- CPK level (1.0, 1.33, or 2.0)

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#### **RUN MODE**

STATUS BAR		PRODUCT NUMBER	DESCRIPTION		
ACTIVE: System is taking and recording m	easurements	P100000	- 0.0250" X 0.0	0270" PI on CU Mandrel	
CONFIGURATION	GLOBAL STATISTICS	LOCAL STATISTICS		REAL TIME MEASUREMENTS	INTERFACE
Upper Spec Limit 0.02800	Mean 0.02	2500 Mean	0.02500	0.024472	IIII I MINI TUM
Lower Spec Limit 0.02200	Standard Deviation 0.00	0089 Standard Deviation	0.00089	0.026310	START
Nominal 0.02500	Minimum 0.02	Minimum	0.02351	0.024021	PAUSE
MFG Line Speed (fpm) 0 6.0	Maximum 0.02	2650 Maximum	0.02650	0.025780	RESET
Upper Graphical Limit 2 0.03000	СРК	.127 CPK	1.127	0.024716	DOWNT
Lower Graphical Limit 3 0.02000	Number of Samples	293 Number of Samples	293	0.025834	PRINT
Global Graph Time Thirty Minutes 💌	STATE	STATE		0.025561	VIEW EXCEI
Number of Averages Five Minutes Ten Minutes	CPK CRITERIA (@ 1.0 ( 1.33 (	2.0 Spool Footage (feet)	14.65	0.025389	EXIT
Braid Mode Thirty Minutes One Hour				DEMO CMDS>	UP+ DOW
Four Hours Eight Hours	' Global Graph		measureOD™ Local Graph		
		0.028 0.026 0.026 0.024 0.022 0.022 0.022	MANNA MA	NIMMANN	hild What

The following options are available when the system is in RUN mode:

MFG Line Speed: The approximate manufacturing line speed may be entered here. This will result in a more accurate estimate of the tubing OD as a function of footage

Upper Graphical Limit: The graphical upper limit may be adjusted during the manufacturing run.

Lower Graphical Limit: The graphical lower limit may be adjusted during the manufacturing run.

Global Graph Time: The Global Graph (the left side graph) time scale may be adjusted per the drop down menu.

PAUSE: The laser micrometer readings may be paused at any time.

RESET: The reset allows the real time SPC results to be reset. The software will ask for a confirmation from the User.

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PRINT: The PRINT button exports the current results to Microsoft Excel and allows the graphical results and the SPC summary to be printed by the User. The User may also save the spreadsheet that the data was exported.

The following figure illustrates the typical output.



EXIT: Upon confirmation, the program is exited. The software will ask for a confirmation from the User.

# **VII.** Reporting Errors

Please report errors via email to sales@cathcad.com. Please provide as much information as possible with regards to the setup of the program when the error occurred.