



Datalyzer

Datalyzer Qualis 4.0 MSA Gage Management Software



Datalyzer International

At Datalyzer International, we are committed to helping our customers achieve manufacturing excellence through continuous improvement. What sets us apart is our integrated approach to quality management. We offer a unique solution that combines FMEA, MSA, SPC and APQP into one streamlined system, providing you with a holistic view of your operations and enabling you to make data-driven decisions that will drive success.

Partner with us and take the first step towards achieving excellence in manufacturing.

Datalyzer Qualis 4.0 MSA Gage Management

The accuracy of quality analysis can be significantly impacted by measurement system errors. A measuring system consists of gaging instruments, inspection techniques, and fixturing, and any of these components can introduce variation. This variation can cause out-of-control situations and affect key quality statistics such as Cpk and Ppk in the SPC analysis or even worse cause incorrect decisions about good or bad products.

To address this challenge, controlling measurement system variation is an essential first step in all major quality approaches. Datalyzer Qualis Gage Management quantifies the measurement system variation and provides the required information for reducing it. Our Gage Management system operates according to requirements like IATF 16949 and RM13003, ensuring compliance with industry standards.

The Datalyzer Qualis Gage Management system runs in a browser and can be used as a standalone solution or linked to the Datalyzer Qualis SPC module. When linked, the Gage Management module shares the Qualis database, providing access to common setup information like characteristic specifications and process variation. With this integration, reports can be generated that compare gage variation and process variation and print them instantly in a single report. Additionally, control charts of the calibrations can be displayed. There are 4 main components to this system:

- Gage registration
- Gage Calibration and Bias Studies
- Gage Repeatability and Reproducibility studies and attribute MSA Studies
- Supplier Records for sourcing supplies, replacements, and repairs.

By having gage registration, calibration and MSA studies in one system integrated with SPC you take control of your measurement system variation to improve the accuracy and consistency of your quality analysis while minimizing cost of gage management.

Gage Registration

The system supports full registration of gages with all relevant information.

Gage Number	Measurement Unit
Gage Name	Status
Gage Description	Data Group
Gage Type	Characteristic type
Model	Cost
Serial Number	PO
Precision	Purchase Date
Resolution	Company
Range	Master
Battery Type	

All data is stored in a centralized database. 12 user defined fields can be added.

Calibration	0	Days	Last calibration	Next Calibration
MSA Schedules				
R&R	0	Days	Last R&R	Next R&R
Bias	0	Days	Last Bias	Next Bias
Linearity	0	Days	Last Linearity	Next Linearity
Gage Department			Storage Location	
Gage Owner			Current Location	
Notes			Sub Location	



In addition all calibration and MSA statuses are recorded as well as location information. Accurate information saved a company a lot of time searching for the right gage or information and also prevents quality cost like inaccurate calibration or loss of gages.

Gage Calibration and Bias studies

Calibration is often the largest ongoing cost of a quality assurance.

Calibration Study-DL1536

Calibration Study

Calibration ID: [Field] Calibration Date & Time: 8/30/2023 08:40:36

Performed By: Tim Right Model: 536-212

Gage: DL1536 Serial No: 023472-01

Gage Name: Vernier Swevel Jaw Company: [Field]

Gage Type: First GT Status: Pass

Gage Description: [Field] Certificate Scan: [Field]

Calibration Company: [Field] Advanced:

Datalyzer’s Gage Management system allows you to manage those costs, as well as the gages themselves. Determines whether bias exists, and whether it exceeds acceptable limits.

Datalyzer® Gage Management software further maintains history of these calibration studies so that trends can be observed.

Calibration:

User selectable number of calibration points within the measuring range along with the flexibility to substitute an available standard nearest each calibration point. There is the option to include measurement or master uncertainty in the study.

Calibration Study-GN: 0021

Inner diameter Outer diameter

Master: DL201 Tolerance+: 0.25

SN: [Field] Tolerance-: 0.25

#	Nominal	Meas 1	Meas 2	Average	Bias	Status
1	10.000	10.001	10.003	10.002	0.002	PASS
2	20.000	20.004	19.997	20.001	0.001	PASS
3	30.000	29.996	29.998	29.997	-0.003	PASS

Simple, colour coded pass/fail status indication on the study when complete. User definable criteria for pass fail includes passing % limit of Tolerance, or process variation. Control Charts can be added and out of control status can be shown instead of pass information.

Reports clearly indicate the gage details for example pass fail status and the date of study. User definable customer name titles and graphical logo can be included in each report header.

Calibration Study history is maintained for each gage. View historical studies or print them for distribution.

Calibrations and MSA Due Reports are also available designating which group of gages need to be re-calibrated or re-studied during any given week or month. The Calibration procedure can be user-defined and applied to all desired gages.

Information about external calibrations can be stored and calibration results can be attached to the gage record, so the reports are quickly accessible and calibration stickers can be printed.

Company History

Datalyzer International, Inc. was organized in the late 1970’s to develop quality software for industry. Since that time we have established a solid reputation for innovation and customer responsiveness. Datalyzer International has contributed many firsts to its industry.

Datalyzer International was the first companies to provide a commercial (real-time) SPC software package for industry in the early 1980’s. Soon after, we developed the first commercial Gage Repeatability and Reproducibility software package.

More recently, Datalyzer International was the first to offer multilingual SPC software products on multiple database platforms and FMEA and real-time OEE are integrated.

Datalyzer has offices in USA, Portugal, Netherlands, India and Malaysia and experienced distributors in other locations being able to provide local support in almost every language and time zone

Our Mission

Datalyzer International is in business to develop software for continuous improvement of quality and productivity. Our progress depends on successfully pursuing the following principles:

- Listen and respond to customers with strong, maintenance-free products and features.
- Offer maximum value in personal service with each customer contact, whether it be sales, support, documentation, consultancy or customer training.
- Offer worldwide local training and support to maximize effectivity of support and reduce environmental impact to the customer by eliminating flight cost of trainers.
- Be alert for opportunities to improve.
- Support customers for the long run.



Gage Repeatability and Reproducibility studies

Even if a measurement system calibrates without bias, how consistently does it measure production parts...

- When used by one individual at different times (repeatability).
- When used by more than one individual over time (reproducibility).

The Gage R&R functionality of the Datalyzer Gage Management system provides the possibility to perform and manage gage R&R studies. The use of gage types and characteristic groups allows you to perform studies for representative gages and characteristics which can be used in reports.

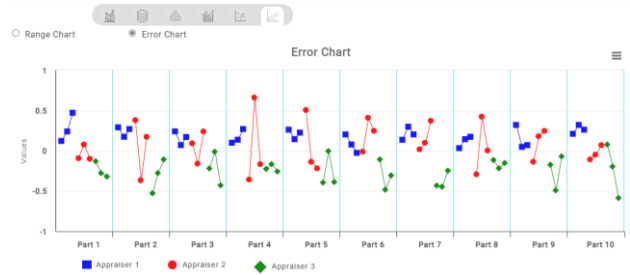
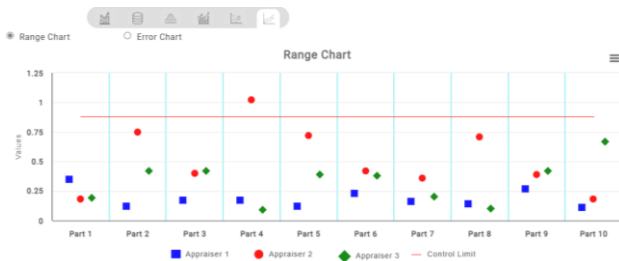
Features: The system supports Bias studies, Linearity studies, Type 1,2 and 3 Gage R&R studies and attribute studies.

Multiple clear analyses and Reports: ANOVA, Long and short, variable and attribute studies, complimented by performance curves, Range charts, Average & Run charts, Error charts, Normalized Individuals Charts, Whisker charts, X-Y plots and Scatter plots of the data. R&R percentage can be based on process variation, Study variation or specific characteristic tolerance.

Attribute study: Full analysis for attribute MSA (Kappa study)

The system allows fast and convenient study creation with a format which makes the studies easy to perform. Study results can be reviewed from a historical list.

Complete report options include numerous preformatted forms with your company title and graphical logo.



New GR&R Type 2

General Study Data Results Average & Range ANOVA

GR&R average and range report

Part No & Name: [] Gage Name: Digital Height Single Study Date: 12/20/2023 13:12:31

Characteristic: [] Gage Type: [] Performed By: []

Specifications: -5 -5 Gage Number: [] R: 0.3417

Rp: 3.5111 Xbar: 0.4447

Measurement Unit Analysis	Trials	K1	% Total Variation(TV)
Repeatability - Equipment Variation (EV)	2	4.56	%EV = 100(EV/TV)
EV = R * K + 1	3	3.05	= 100(1.03959/5.90191)
= 0.3417 * 3.0427	4	2.5	= 17.61%
+ 1.03959			
Reproducibility - Appraiser Variation(AV)	Appraiser	K2	%AV = 100(AV/TV)
AV = $\sqrt{\frac{\sum_{i=1}^g (E_i - \bar{E})^2}{g-1}}$	2	3.65	= 100(1.182891/5.90191)
= $\sqrt{(0.4447^2 + 2.6940^2 - (1.03959^2/(10*3)))}$	3	2.7	= 20.04%
1.182891	4	2.3	
Repeatability - Reproducibility (R&R)	Parts	K3	%R&R = 100(R&R/TV)
R&R = $\sqrt{EV^2 + AV^2}$	2	3.6416	= 100(1.57479/5.90191)
= $\sqrt{1.03959^2 + 1.182891^2}$	3	2.6941	= 26.68%
= 1.57479	4	2.3002	
Part Variation(PV)	5	2.0755	%PV = 100(PV/TV)
PV = $\sqrt{s^2 - \sigma^2}$	6	1.9270	= 100(5.68793/5.90191)
= $\sqrt{3.5111^2 - 1.619980812}$	7	1.8199	96.37%
= 5.68793	8	1.7381	
Total variation(TV)	9	1.6731	
TV = $\sqrt{EV^2 + PV^2}$	10	1.6199	
= $\sqrt{1.03959^2 + 5.68793^2}$	35	1.2223	ndc = $1.41(PV/\sigma)$
= 5.90191			= 1.41(5.68793/1.57479)
			5.0930 - 5

All calculations are based upon predicting 5.15 sigma (99.93% of the area under the normal distribution curve). K1 is 5.1542, where K2 is dependent on the number of trials (n) and the number of parts times the number of appraisers (g) which is assumed to be greater than 15. AV is a negative value is calculated under the square root sign, the appraiser variation (AV) defaults to zero (0). K2 is 5.1542 where K3 is dependent on the number of appraisers (g) and (g) is 1, since there is only one gage calculation. K3 is 5.1542 where K3 is dependent on the number of parts (n) and (g) is 1, since there is only one range calculation. K3 is obtained from Table D3, Quality Control and Industrial Statistics, A.J. Duncan.

Save Print Close

New GR&R Type 2

General Study Data Results Average & Range ANOVA

Anova supporting calculations

Source	DF	SS	MS	F	Total variation
Appraiser	2	3.16726	1.58363		5.610
Part	9	88.36193	9.81799		5.15 Std. Dev.
Appr*Part	18	0.35898	0.01994	0.43372	
Error	60	2.75893	0.04598		
Total	89	94.64711			

Results

Influence Quantity	SD	Var	%Var	SV	%SV	%T
Appraiser	0.22684	0.05146	4.36848	1.36103	20.90091	17.01281
Part	1.04233	1.08645	92.23784	6.25396	96.04053	78.17456
Appraiser by Part	0	0	0	0	0	0
Equipment	0.19993	0.03997	3.39368	1.1996	18.42193	14.99499
GRR	0.30237	0.09143	7.76216	1.81423	27.86065	22.67786
Total	1.0853	1.17788	100	6.5118	100	81.39747

Save Close



Gage Supplier Information

Each gage must be entered as a record in the system. Thereafter, it can be referenced by either the Calibration or Gage R & R studies.

Each gage is defined in the Datalyzer® Gage Management system with a significant amount of descriptive information related to the gage and the gage supplier. For each gage you can define in which location the gage can be found.

Contact information, product costs, service and suppliers availability etc. can be entered. These records are maintained to allow quick reference for instrument service, supplies or replacement.

Converting from other systems

The Qualis Gage management system offers a bulk import module for gages. Based on an Excel sheet all gage information can be copied and automatically imported facilitating conversion from Excel or client server systems to our webbased solution. Contact Datalyzer to see if a full automatic conversion from your system is available.

Multiple Sites

Qualis Gage management offers a feature that you can separate multiple locations (sites) in one database. This means with 1 database or SaaS solution multiple sites can manage all the gages. Each user would only see the data of their location. This offers an extreme cost effective solution with no IT cost for companies with multiple sites.



Customer Support

Technical support for the Datalyzer Gage Management Software is available by phone, e-mail or by our automated support desk.

- USA: Monday through Friday, 8:30 to 17:30 ET
- Europe: Monday through Friday, 8:30 to 18:30 GMT -1
- Asia: Monday through Friday IST 6:30 to 18:30

Software purchases include no-charge updates for six months. Support agreements are renewable annually. Services include new versions upon request and personal telephone, fax or e-mail support.

Licensing

Datalyzer Qualis MSA Gage Management software can be offered as a node license on premise (installed per PC) or as a concurrent license on premise (PC, Web or Citrix) or as a Saas subscription solution.

Database Compatibility

Datalyzer Qualis MSA Gage Management software versions are available for use with Microsoft SQL Server databases (SQL Server Native Client, ODBC Driver/OLE).

Operating System Compatibility

Datalyzer Qualis modules work with the following Microsoft Windows operating systems: Windows 8, 10,

11 and browsers Edge, Chrome and Firefox. Citrix® and Microsoft Terminal Services thin client/server configurations can also be used.

Qualis Gage Management runs in a browser or as an installed application or as Saas (public and private cloud).

Associated Modules

- Datalyzer Qualis 4.0 Analytics
- Datalyzer Certificate of Analysis
- Datalyzer Dashboard Module
- Datalyzer Qualis 4.0 SPC
- Datalyzer Qualis 4.0 APQP
- Datalyzer Qualis 4.0 Failure Mode and Effect Analysis

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Datalyzer has offices in USA, Netherlands, Portugal, United Kingdom, India and Malaysia.

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