Mastersizer – Malvern Panalytical

2000 & 3000 & 3000E

INTRODUCTION

The Lumetics LINK™ software platform scans network locations for new measurement data files, copies data directly to a centralized database, and provides a powerful user interface for rapid multi-measurement multi-technique data aggregation, visualization, analysis, and reporting. LINK employs a client/server-based architecture where the LINK server hardware is provided by the end user and resides on the end user's network. The LINK client is a portable web-based application that may be placed on any computer with network connectivity to the LINK server. For successful import, the LINK webserver requires read access to the folders where user data resides.

The Mastersizer laser diffraction particle size analyzer delivers accurate particle size distributions for both wet and dry dispersions.

DETAILS

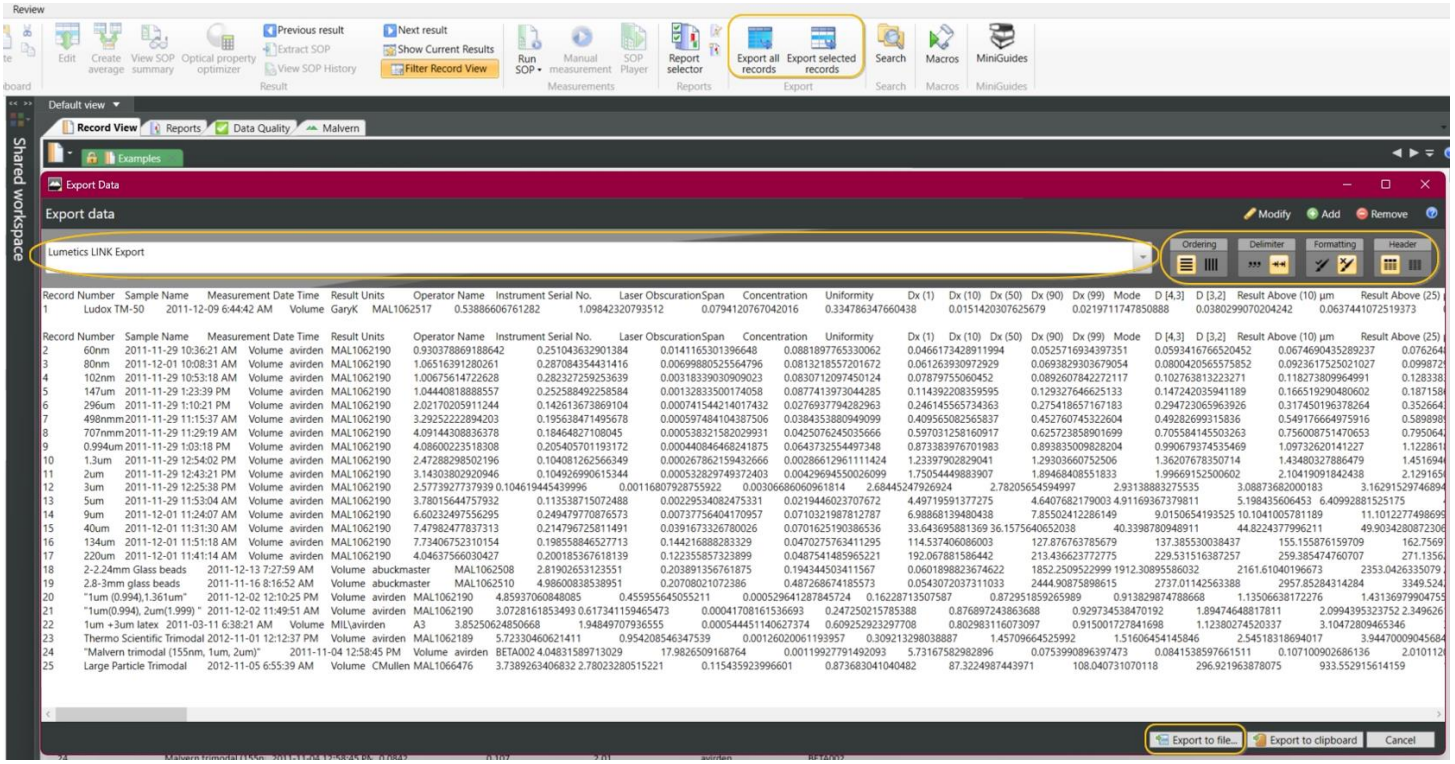
LINK requires the TXT data field for importing Mastersizer results. Volume.txt, number.txt files will be imported as separate measurements. Export data from the Mastersizer software as shown in the **Export Data** dialog box figure below:

- The exported measurements should be in a tab-delimited format and include a header row.
- LINK cannot support appended measurements, do not select this option.
- Measurement Date, Sample Name, and Results Units must be present in the TXT file, as LINK will search the Results Units column to determine what type of data it is.
- The last columns in the export file must include either Volume (%) vs. Particle Diameter, or Number (%) vs. Particle Diameter, or Mass (%) vs. Particle Diameter
- If data is not imported into LINK as expected, use the Mastersizer 3K template (located for download in the customer portal of the Lumetics website – or contact Lumetics for a copy). Place the template file here on your Mastersizer PC: C:\ProgramData\Malvern Instruments\Mastersizer 3000\Workspace\Data Template. When exporting data, instead of selecting the Default template, the option for 'Lumetics LINK Export' template will be available. In choosing this, a file should be produced that can be imported into LINK.
- The template may be modified to add more metadata fields within the Mastersizer software. LINK will automatically detect and import any new data added.

Mastersizer TXT data file example is as follows:

Record Number	Sample Name	Measurement Date Time	Result Units	Laser Obscuration	Concentration	Uniformity	Span	Dx (1)	Dx (10)	Dx (50)
103	Sample A	9/24/2019 6:49:43 PM	Number	0.252619260778075	0.00337865898826394	0.0631279567563193	0.2043081607214 34	352.190674279864		
104	Sample B	9/24/2019 8:25:33 PM	Number	0.427080297124838	0.00282225628044122	0.375976685802787	1.05990657032572	2.43092018843663		
105	Sample B	9/24/2019 8:25:36 PM	Number	0.647412983404949	0.0038865721934684	0.386197749820501	1.09967829275479	2.43139329391762		
106	Sample B	9/24/2019 8:25:38 PM	Number	0.663522650076331	0.00407067240041787	0.389792412127946	1.10661743945087	2.43152957105862		
107	Sample B	9/24/2019 8:25:41 PM	Number	0.713997245649711	0.00459880453826948	0.423984021515853	1.21646503268302	2.4327602375834	2.4	
108	Sample B	9/24/2019 8:25:44 PM	Number	0.708228824774892	0.00409484971862617	0.363370285693439	1.03160588937311	2.4302479957489	2.5	
109	Sample B	9/24/2019 8:25:46 PM	Number	0.620923506564275	0.00385370622191878	0.395148119593319	1.12763160251138	2.4313186333024	2.5	
110	Sample B	9/24/2019 8:25:49 PM	Number	0.672316500532877	0.00388692081919408	0.361373916079838	1.02521802927197	2.42994638268666		
111	Sample B	9/24/2019 8:25:51 PM	Number	0.700659792180525	0.0039813828803063	0.359396416770503	1.01718863286312	2.42986436932501		
112	Sample B	9/24/2019 8:25:54 PM	Number	0.699818740618274	0.0039872759081922	0.359589402223499	1.00918005622039	2.43014865892648		
113	Sample B	9/24/2019 8:25:56 PM	Number	0.687039071505025	0.00403431401866523	0.363851406775546	1.02703427565167	2.43023169360485		

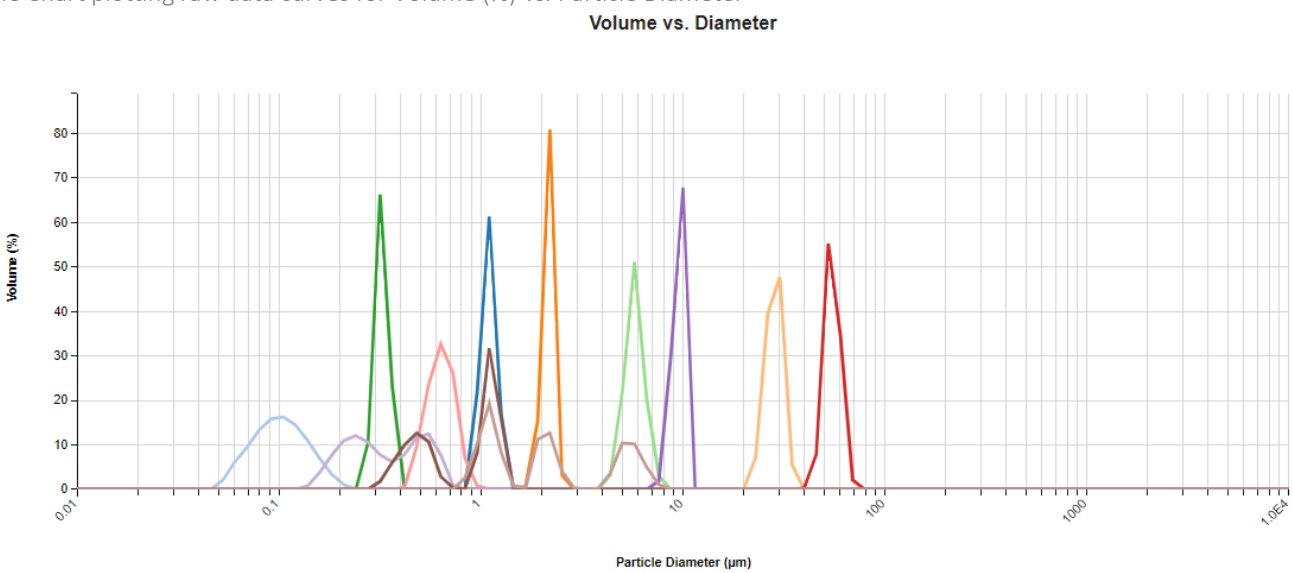
Mastersizer software data export example:



EXAMPLES

Included below is a sample dashboard from Mastersizer measurement files:

1. Line Chart plotting raw data curves for Volume (%) vs. Particle Diameter



2. Tabular Summary examples

Measurement Summary Table – Measurement Results

LINK Record ID #	Particle refractive index - AVG	Concentration	d (0.1) - AVG	d (0.5) - AVG	d (0.9) - AVG	D [4, 3] - Volume weighted mean - AVG	D [3, 2] - Surface weighted mean - AVG	Specific surface area - AVG	Dispersant refractive index - AVG
1	1.59	8.8e-3	0.06	0.09	0.14	0.10	0.09	64.00	1.33
2	1.59	2.8e-3	0.28	0.30	0.33	0.30	0.30	19.10	1.33
3	1.59	8.0e-4	0.48	0.59	0.71	0.60	0.58	9.83	1.33
4	1.59	6.0e-4	0.93	1.01	1.12	1.02	1.01	5.63	1.33
5	1.59	1.1e-3	1.85	2.02	2.14	2.01	2.00	2.86	1.33
6	1.59	3.9e-3	4.72	5.34	6.10	5.39	5.33	1.07	1.33
7	1.59	5.9e-3	7.96	9.02	9.66	8.92	8.88	0.64	1.33
8	1.59	3.4e-3	23.31	26.45	28.82	26.40	26.22	0.23	1.33
9	1.59	3.4e-3	46.14	50.98	56.99	51.28	50.87	0.12	1.33
10	1.59	1.8e-3	0.18	0.30	0.54	0.34	0.28	20.40	1.33
11	1.59	1.0e-3	0.38	0.94	1.12	0.78	0.63	9.02	1.33
12	1.59	1.5e-3	0.93	1.86	5.44	2.55	1.62	3.52	1.33
13	1.59	6.6e-3	0.11	1.09	5.25	1.93	0.35	17.40	1.33
14	1.59	8.7e-3	0.13	2.11	44.26	11.60	0.46	13.00	1.33

Measurement Summary Table – Instrument Settings

LINK Record ID #	Uniformity - AVG	Size Bins	Last result channel size - AVG	Dispersant name	Analysis model	Specific surface area - AVG	Particle absorption index - AVG
1	0.27	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	64.00	0
2	0.07	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	19.10	0
3	0.13	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	9.83	0
4	0.07	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	5.63	0
5	0.03	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	2.86	0
6	0.09	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	1.07	0
7	0.05	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	0.64	0
8	0.05	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	0.23	0
9	0.08	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	0.12	0
10	0.41	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	20.40	0
11	0.30	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	9.02	0
12	0.76	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	3.52	0
13	1.39	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	17.40	0
14	5.13	0.01,0.011482,0.0...	2000	Water	Multiple narrow m...	13.00	0

MASTERSIZER DASHBOARDS

LINK contains an extensive built-in dashboard library from LINK version 2.4.0.210401 and later. This function contains specific pre-created dashboards for all instruments and application groups.

CONTACT LUMETICS

For direct assistance, please contact Lumetics LINK™ Support:

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