

19-0760  
 C96

**REPORT OF CALIBRATION**

Model: S3100  
 Serial Number: 190504038 LWS Location: 1221 Disk Drive, Medford, OR 97501  
 Sensor ID: 190504-027

Calibration of this instrument has been accomplished by and is fully compliant to the methods defined in ISO 21501-4 Part 4: *Light scattering airborne particle counter for clean spaces*. The accuracy of the standards and equipment used in the calibration are traceable to the National Institute of Standards and Technology or have been derived from acceptable values of natural and physical constants. All records of work performed are maintained by Lighthouse Worldwide Solutions.

All work performed is in accordance with Lighthouse Worldwide Solutions. Quality Manual P/N 714252800-1. Reproduction of this certificate and accompanying documentation is prohibited without the expressed written permission of Lighthouse Worldwide Solutions.

The size calibration standard uncertainty for the listed instrument using Root Sum Square is: 2.7%  
 The combined standard uncertainty of the size calibration is calculated using Root Sum Square method (RSS).

**Test Equipment:**

<u>Instrument &amp; Model</u>	<u>Manufacturer</u>	<u>Serial No.</u>	<u>Cal Date</u>	<u>Cal Due</u>
TSI Flow Meter 4043	TSI	40431722011	6/7/2018	6/7/2019
DMM Fluke 179	Fluke	15190838	2/22/2019	2/22/2020
MCA 8000D	Amptek	01084	10/4/2018	10/4/2019
Test Standard Solair	Lighthouse	171099002	2/20/2019	8/20/2019

Calibration was performed under the following controlled conditions:

Temperature: 70.0 °F      Relative Humidity: 42.0 %

This certifies the above named instrument conforms to the original specifications in effect at date of manufacture and test.

**Size Calibration:**

<u>Channel</u>	<u>Size (um)</u>	<u>Threshold (mV)</u>	<u>Particle Size (um)</u>	<u>Particle Size (mV)</u>	<u>Lot No.</u>	<u>Manufacturer</u>	<u>Exp Date</u>
1	0.30	49.0	0.303 +/- 3nm	49	204665	Thermo Scientific	11/30/2021
2	0.50	453.0	0.510 +/- 3.5nm	472	210349	Thermo Scientific	4/30/2022
3	1.00	1058.0	1.030 +/- 5.5nm	1092	202223	Thermo Scientific	9/30/2021
4	3.00	3223.0	2.920 +/- 15nm	3188	199811	Thermo Scientific	7/31/2021
5	5.00	3758.0	5.020 +/- 15nm	3763	193981	Thermo Scientific	2/28/2021
6	10.00	4606.0	9.850 +/- 30nm	4581	206793	Thermo Scientific	1/31/2022

Flow Rate:	Measured Flow:	1.01 CFM	(limit ±5% of nominal)	PASS
False Count Rate:	Observed Cts:	0 /M <sup>3</sup>		PASS
Counting Efficiency:	Size 0.3 um:	51.61%	(limit 30% - 70%)	PASS
Counting Efficiency:	Size 0.5 um:	98.06%	(limit 90% - 110%)	PASS
Size Resolution:	0.4um Channel:	4.69%	(limit 15%)	PASS

Signature:  Certification Date: May 21, 2019

Cal Tech/Engineer: T Kish

Calibration Due: May 21, 2020

**LIGHTHOUSE WORLDWIDE SOLUTIONS**

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