

**THIS IS TO CERTIFY THAT AFFRI INC. HAS CALIBRATED THE FOLLOWING
FORCE TESTING MACHINE IN ACCORDANCE WITH ASTM-E4-21.**

CUSTOMER

COMPANY: Labsurface
ADDRESS: 2250 Rue Louis-Bleriot
CITY/PROVINCE: Mascouche, Quebec J7K 3C1

CALIBRATION INFORMATION

PURCHASE ORDER NUMBER: NG-553773-1
CERTIFICATE NUMBER: Labsurface_TMU-190485_VTS230128-50kN_Load_E4-21_030625
CERTIFICATE ISSUED: March 6, 2025
CALIBRATION DATE: March 6, 2025
REQUESTED DUE DATE: March 6, 2026
SYSTEM LOCATION: R&D Lab
MANUFACTURER: Nextgen
MODEL: EML504C
SERIAL NUMBER: TMU-190485/VTS230128
ASSET NUMBER: 50kN Load
LOAD CELL/TRANSDUCER: 5T
INDICATOR RESOLUTION: 0.2 lbf
TEMPERATURE / RELATIVE HUMIDITY: 21.46°C/37.04%
CALIBRATION TECHNICIAN: Saverio Amerato

CALIBRATION IS VALID FOR THE SCALE(S), ITEMS AND RESULTS SHOWN AND HAS BEEN FOUND TO BE WITHIN TOLERANCE UNLESS OTHERWISE NOTED.

STANDARDS USED

FILE	SERIAL #	MFG	CAL DATE	DUE DATE	CERT BY	CERT #	CAPACITY	UNC
TH 003	S2450843/S2310657	Vaisala	02/02/24	02/02/26	Transcat	33-Q3F0N-20-1	Deg/%RH	0.5/0.14 Deg/%RH
AMP 003	818375701	HBM	05/11/24	05/11/25	Affri	AffriUS_818375701-AMP_003_AMP_060123	2 mV/V	0.012 %FS
AUF 008 C 5 kN	926987	AEP	29/07/21	29/01/25	AEP	LAT 093 211221F	5 kN	0.0025 kN
AUF 010 C 50 kN	921913	AEP	18/02/22	18/02/25	Morehouse	921913B1822	5012.2 kgf	0.0025 kgf
AUF 008 T 5 kN	926987	AEP	29/07/21	29/01/25	AEP	LAT 093 211321F	5 kN	0.0025 kN
AUF 010 T 50 kN	921913	AEP	18/02/22	18/02/25	Morehouse	921913B1822	5012.2 kgf	0.0025 kgf

TRACEABILITY, UNCERTAINTY AND DECISION RULE STATEMENTS

The expanded uncertainties shown above use a confidence level of 95% and a coverage factor of k = 2. Expanded uncertainties are valid from 18°C to 28°C. ALL REFERENCE STANDARDS USED FOR VERIFICATION ARE TRACEABLE TO NIST OR ACCREDIA. Services comply with PO requirements. Affri uses a binary decision rule of pass or fail where tolerance limit equals acceptance limits without considering uncertainty. Uncertainty and measured results are provided for the user to consider their own risk.

COMMENTS

Preventative maintenance was performed.

Saverio Amerato
AFFRI Inc

CALIBRATED BY

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AFFRI Inc

CALIBRATION REPORT



CUSTOMER

COMPANY: Labsurface

CALIBRATION INFORMATION

CERTIFICATE NUMBER: Labsurface_TMU-190485_VTS230128-50kN_Load_E4-21-030625
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 CALIBRATION DATE: March 6, 2025
 REQUESTED DUE DATE: March 6, 2026
 MODEL: EML504C
 SERIAL NUMBER: TMU-190485/VTS230128
 LOAD CELL/TRANSDUCER: 5T

AS FOUND:

REFERENCE STANDARDS USED	REF STD READING lbf	DUT READING RUN #1 lbf	DIRECTION:	COMPRESSION
			DUT ERROR RUN #1 lbf	DUT %RD ERROR RUN #1 (%RD)
AUF 010 C 50 kN	0.0	0.0	0.0	
AUF 008 C 5 kN	110.0	106.5	-3.5	-3.18%
AUF 008 C 5 kN	220.0	215.3	-4.7	-2.14%
AUF 008 C 5 kN	440.0	434.5	-5.5	-1.25%
AUF 008 C 5 kN	660.0	653.6	-6.4	-0.97%
AUF 008 C 5 kN	880.0	873.6	-6.4	-0.73%
AUF 010 C 50 kN	1100.0	1093.0	-7.0	-0.64%
AUF 010 C 50 kN	2200.0	2188.0	-12.0	-0.55%
AUF 010 T 50 kN	4400.0	4385.0	-15.0	-0.34%
AUF 010 C 50 kN	6600.0	6585.0	-15.0	-0.23%
AUF 010 C 50 kN	8800.0	8786.0	-14.0	-0.16%
AUF 010 C 50 kN	11000.0	10986.0	-14.0	-0.13%
AUF 010 C 50 kN	0.0	1.0	1.0	

AS LEFT:

REFERENCE STANDARDS USED	REF STD READING lbf	DUT READING RUN #1 lbf	REF STD READING RUN #2	DUT READING RUN #2 lbf	DUT ERROR		DUT %RD ERROR		DUT REPEAT. (%RD)	STD UNC. DUE TO REPEAT. (%RD)	MEASURE. UNC. (K=2) (%RD)
					DUT ERROR RUN #1	DUT ERROR RUN #2	DUT %RD ERROR RUN #1	DUT %RD ERROR RUN #2			
					DUT ERROR lbf	DUT ERROR lbf	DUT %RD ERROR (%RD)	DUT %RD ERROR (%RD)			
AUF 010 C 50 kN	0.0	0.0	0.0	0.0	0.0	0.0					
AUF 008 C 5 kN	110.0	109.0	110.0	109.1	-1.0	-0.9	-0.91%	-0.82%	0.09%	0.18%	0.49%
AUF 008 C 5 kN	220.0	218.8	220.0	218.6	-1.2	-1.4	-0.55%	-0.64%	0.09%	0.09%	0.36%
AUF 008 C 5 kN	440.0	437.2	440.0	437.1	-2.8	-2.9	-0.64%	-0.66%	0.02%	0.05%	0.32%
AUF 008 C 5 kN	660.0	656.2	660.0	655.9	-3.8	-4.1	-0.58%	-0.62%	0.05%	0.03%	0.32%
AUF 008 C 5 kN	880.0	874.4	880.0	874.9	-5.6	-5.1	-0.64%	-0.58%	0.06%	0.04%	0.32%
AUF 010 C 50 kN	1100.0	1093.6	1100.0	1093.4	-6.4	-6.6	-0.58%	-0.60%	0.02%	0.04%	0.32%
AUF 010 C 50 kN	2200.0	2189.6	2200.0	2188.6	-10.4	-11.4	-0.47%	-0.52%	0.05%	0.03%	0.31%
AUF 010 T 50 kN	4400.0	4384.3	4400.0	4385.3	-15.7	-14.7	-0.36%	-0.33%	0.02%	0.02%	0.31%
AUF 010 C 50 kN	6600.0	6585.3	6600.0	6584.2	-14.7	-15.8	-0.22%	-0.24%	0.02%	0.02%	0.31%
AUF 010 C 50 kN	8800.0	8786.7	8800.0	8784.4	-13.3	-15.6	-0.15%	-0.18%	0.03%	0.02%	0.31%
AUF 010 C 50 kN	11000.0	10989.3	11000.0	10985.3	-10.7	-14.7	-0.10%	-0.13%	0.04%	0.01%	0.31%
AUF 010 C 50 kN	0.0	1.2	0.0	0.4	1.2	0.4					

AFFRI Inc.

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CALIBRATION REPORT



CUSTOMER

COMPANY: Labsurface

CALIBRATION INFORMATION

CERTIFICATE NUMBER: Labsurface_TMU-190485_VTS230128-50kN_Load_E4-21-030625
 CERTIFICATE ISSUED: March 6, 2025
 CALIBRATION DATE: March 6, 2025
 REQUESTED DUE DATE: March 6, 2026
 MODEL: EML504C
 SERIAL NUMBER: TMU-190485/VTS230128
 LOAD CELL/TRANSDUCER: 5T

AS FOUND:

REFERENCE STANDARDS USED	REF STD READING lbf	DUT READING RUN #1 lbf	DIRECTION:	TENSION
			DUT ERROR RUN #1 lbf	DUT %RD ERROR RUN #1 (%RD)
AUF 010 T 50 kN	0.0	0.0	0.0	
AUF 008 T 5 kN	110.0	108.5	-1.5	-1.36%
AUF 008 T 5 kN	220.0	217.4	-2.6	-1.18%
AUF 008 T 5 kN	440.0	436.0	-4.0	-0.91%
AUF 008 T 5 kN	660.0	654.8	-5.2	-0.79%
AUF 008 T 5 kN	880.0	872.4	-7.6	-0.86%
AUF 010 T 50 kN	1100.0	1091.6	-8.4	-0.76%
AUF 010 T 50 kN	2200.0	2186.2	-13.8	-0.63%
AUF 010 T 50 kN	4400.0	4378.2	-21.8	-0.50%
AUF 010 T 50 kN	6600.0	6574.4	-25.6	-0.39%
AUF 010 T 50 kN	8800.0	8774.4	-25.6	-0.29%
AUF 010 T 50 kN	11000.0	10970.3	-29.7	-0.27%
AUF 010 T 50 kN	0.0	1.0	1.0	

AS LEFT:

REFERENCE STANDARDS USED	REF STD READING lbf	DUT READING RUN #1 lbf	REF STD READING RUN #2 lbf	DUT READING RUN #2 lbf	DUT ERROR		DUT %RD ERROR		DUT REPEAT. (%RD)	STD UNC. DUE TO REPEAT. (%RD)	MEASURE. UNC. (K=2) (%RD)
					RUN #1	RUN #2	RUN #1	RUN #2			
					lbf	lbf	(%RD)	(%RD)			
AUF 010 T 50 kN	0.0	0.0	0.0	0.0	0.0	0.0					
AUF 008 T 5 kN	110.0	110.0	110.0	110.0	0.0	0.0	0.00%	0.00%	0.00%	0.31%	0.71%
AUF 008 T 5 kN	220.0	219.5	220.0	220.0	-0.5	0.0	-0.23%	0.00%	0.23%	0.16%	0.44%
AUF 008 T 5 kN	440.0	439.4	440.0	440.1	-0.6	0.1	-0.14%	0.02%	0.16%	0.08%	0.35%
AUF 008 T 5 kN	660.0	659.8	660.0	659.5	-0.2	-0.5	-0.03%	-0.08%	0.05%	0.06%	0.33%
AUF 008 T 5 kN	880.0	879.4	880.0	880.0	-0.6	0.0	-0.07%	0.00%	0.07%	0.04%	0.32%
AUF 010 T 50 kN	1100.0	1099.0	1100.0	1099.7	-1.0	-0.3	-0.09%	-0.03%	0.06%	0.03%	0.32%
AUF 010 T 50 kN	2200.0	2199.4	2200.0	2199.5	-0.6	-0.5	-0.03%	-0.02%	0.00%	0.02%	0.31%
AUF 010 T 50 kN	4400.0	4399.2	4400.0	4399.7	-0.8	-0.3	-0.02%	-0.01%	0.01%	0.01%	0.31%
AUF 010 T 50 kN	6600.0	6598.8	6600.0	6599.4	-1.2	-0.6	-0.02%	-0.01%	0.01%	0.01%	0.31%
AUF 010 T 50 kN	8800.0	8798.2	8800.0	8799.2	-1.8	-0.8	-0.02%	-0.01%	0.01%	0.00%	0.31%
AUF 010 T 50 kN	11000.0	10998.8	11000.0	10998.6	-1.2	-1.4	-0.01%	-0.01%	0.00%	0.00%	0.31%
AUF 010 T 50 kN	0.0	0.4	0.0	0.0	0.4	0.0					

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