

Certificate of Calibration

**THIS IS TO CERTIFY THAT UNITED TESTING SYSTEMS CANADA LTD., HAS CALIBRATED
THE FOLLOWING DESCRIBED EQUIPMENT IN ACCORDANCE WITH
ASTM-E4-XX AND UTS SOP-1003-Rev XX-XXXX.**

CALIBRATION IS VALID FROM 500 lbf TO 20000 lbf AND HAS BEEN FOUND
TO BE WITHIN 1% OF READING UNLESS OTHERWISE NOTED.

CERTIFICATE NUMBER: CR#0001
CERTIFICATE ISSUED: June 5, 2019

CALIBRATION DATE: June 5, 2019
REQUESTED DUE DATE: June 5, 2020

CALIBRATION & CUSTOMER INFORMATION:

COMPANY: ANY COMPANY
ADDRESS: 123 ANY STREET
CITY/PROVINCE: ANY CITY, ANY PROVINCE
SYSTEM LOCATION: Q.C. LAB
SYSTEM CALIBRATED: UNITED STM-100KN S/N XXXXX
LOAD CELL/TRANSDUCER: UNITED U-20K-PQU-12-S S/N XXXX
ASSET NUMBER(S): N / A
DIRECTION: COMPRESSION & TENSION
CALIBRATION RANGE(S): 20000 lbf
INDICATOR / RESOLUTION: UNITED USB CONTROLLER S/N XXXXXXXX / 1 lbf
TEMPERATURE / HUMIDITY: 23.0 °C | 40%
METHOD: FOLLOW THE FORCE
SYSTEM CONDITION: GOOD
READINGS AS FOUND: IN TOLERANCE
READINGS AS LEFT: IN TOLERANCE
CALIBRATION TECHNICIAN: TECHNICIAN

THE FOLLOWING NIST / PTB TRACEABLE STANDARDS WERE USED:

READOUT: HBM AD 101B S/N 81904.

STANDARD FILE:	U60k#8C	U2k#8C	U60k#8T	U2k#8T	TEMP-8
STANDARD S/N:	101825A-134	723185-043	101825A-134	723185-043	TH20123-284
MANUFACTURER:	TOVEY	HBM	TOVEY	HBM	LASCAR
DATE CALIBRATED:	Month Day, Year	Month Day, Year	Month Day, Year	Month Day, Year	Month Day, Year
DATE DUE:	Month Day, Year	Month Day, Year	Month Day, Year	Month Day, Year	Month Day, Year
CERTIFIED BY:	UTS CAN STD LAB	UTS CAN STD LAB	UTS CAN STD LAB	UTS CAN STD LAB	ALPHA
TRACEABILITY NO.:	CR#23053-C	CR#21705-C	CR#23053-T	CR#21705-T	AC15031314-3
CAPACITY:	60000 lbf	2000 lbf	60000 lbf	2000 lbf	80 °C / 100 %RH
MODE:	COMPRESSION	COMPRESSION	TENSION	TENSION	UNCERTAINTY
CLASS A LIMIT:	750 lbf	34 lbf	750 lbf	63 lbf	0.33 °C / 1.4 %RH

UNCERTAINTY:

THE EXPANDED UNCERTAINTY OF THE FORCE MEASUREMENTS IS CERTIFIED TO BE LESS
THAN 0.25% USING A COVERAGE FACTOR OF $k = 2$ FOR A CONFIDENCE LEVEL OF 95%.
EXPANDED UNCERTAINTIES ARE VALID FOR A TEMPERATURE RANGE OF 23°C +/- 5°C.

CALIBRATED BY

United Testing Systems Canada Limited

21 - 225 Bradwick Drive, Concord, Ontario L4K 1K7

Tel.: (905) 669-5327 Fax: (905) 738-5051

E-mail: service@utscanada.com

AUTHORIZED SIGNATORY

ISO/IEC 17025

ANSI/NCSL Z540-1-1994; Part 1

Accredited by:

PAGE 1 OF 4



NVLAP Lab Code: 200311-0

Certificate and report shall not be reproduced, except in full, without the written approval of UNITED TESTING SYSTEMS CANADA LIMITED.

This report is not to be used to claim product certification, approval, or endorsement by United Testing Systems Canada Limited, NVLAP, NIST, or any government agency.

UNITED CALIBRATION GROUP

Calibration Report

CERTIFICATE NUMBER: CR#0001
CERTIFICATE ISSUED: June 5, 2019

CALIBRATION DATE: June 5, 2019
REQUESTED DUE DATE: June 5, 2020

CALIBRATION & CUSTOMER INFORMATION:

COMPANY: ANY COMPANY
SYSTEM CALIBRATED: UNITED STM-100KN S/N XXXXX
LOAD CELL/TRANSDUCER: UNITED U-20K-PQU-12-S S/N XXXX

CALIBRATION RESULTS:

OBSERVED DATA: MULTIPLE RUNS ARE SHOWN SERIALLY. UNLESS OTHERWISE NOTED, THE DATA SHOWN IS 'AS FOUND / AS LEFT' WITH NO ADJUSTMENT MADE. COMPUTED FORCES HAVE BEEN TEMPERATURE CORRECTED AS NECESSARY.

STANDARD I.D.	STANDARD lbf	READING lbf	ERROR lbf	ERROR % READING	REPEAT % ERROR	Un (K=2) % READING
FIRST RUN / COMPRESSION						
U2k#8C	499.52	500	0.48	0.10	N/A	0.16
U60k#8C	999.4	1000	0.6	0.06	N/A	0.19
U60k#8C	1997.5	2000	2.5	0.13	N/A	0.10
U60k#8C	3012.4	3015	2.6	0.09	N/A	0.067
U60k#8C	4018.1	4023	4.9	0.12	N/A	0.067
U60k#8C	5010.8	5015	4.2	0.08	N/A	0.042
U60k#8C	9992.7	10007	14.3	0.14	N/A	0.020
U60k#8C	15026.8	15052	25.2	0.17	N/A	0.014
U60k#8C	19966.8	20003	36.2	0.18	N/A	0.013
U60k#8C	0.0	0	0			
SECOND RUN / COMPRESSION						
U2k#8C	499.55	500	0.45	0.09	0.01	0.16
U60k#8C	1000.3	1001	0.7	0.07	0.01	0.19
U60k#8C	2008.1	2010	1.9	0.09	0.03	0.10
U60k#8C	2998.1	3000	1.9	0.06	0.02	0.068
U60k#8C	3997.0	4000	3	0.08	0.05	0.067
U60k#8C	4995.9	5001	5.1	0.10	0.02	0.042
U60k#8C	9987.0	10002	15	0.15	0.01	0.020
U60k#8C	15007.1	15033	25.9	0.17	0.00	0.014
U60k#8C	19997.0	20035	38	0.19	0.01	0.013
U60k#8C	-1.0	0	1			

NOTES: CAL = 13671.2 LB, FULL SCALE VALUE = 20000.0 LB

PAGE 2 OF 4

ISO/IEC 17025

ANSI/NCSL Z540-1-1994; Part 1

Accredited by:



NVLAP Lab Code: 200311-0

Certificate and report shall not be reproduced, except in full, without the written approval of UNITED TESTING SYSTEMS CANADA LIMITED.
This report is not to be used to claim product certification, approval, or endorsement by United Testing Systems Canada Limited, NVLAP, NIST, or any government agency.

UNITED CALIBRATION GROUP

Calibration Report

CERTIFICATE NUMBER: CR#0001
CERTIFICATE ISSUED: June 5, 2019

CALIBRATION DATE: June 5, 2019
REQUESTED DUE DATE: June 5, 2020

CALIBRATION & CUSTOMER INFORMATION:

COMPANY: ANY COMPANY
SYSTEM CALIBRATED: UNITED STM-100KN S/N XXXXX
LOAD CELL/TRANSDUCER: UNITED U-20K-PQU-12-S S/N XXXX

CALIBRATION RESULTS:

OBSERVED DATA: MULTIPLE RUNS ARE SHOWN SERIALLY. UNLESS OTHERWISE NOTED, THE DATA SHOWN IS 'AS FOUND / AS LEFT' WITH NO ADJUSTMENT MADE. COMPUTED FORCES HAVE BEEN TEMPERATURE CORRECTED AS NECESSARY.

STANDARD I.D.	STANDARD lbf	READING lbf	ERROR lbf	ERROR % READING	REPEAT % ERROR	Un (K=2) % READING
FIRST RUN / TENSION						
U2k#8T	499.24	500	0.76	0.15	N/A	0.17
U60k#8T	999.8	1001	1.2	0.12	N/A	0.20
U60k#8T	2002.9	2005	2.1	0.10	N/A	0.11
U60k#8T	2996.8	3001	4.2	0.14	N/A	0.064
U60k#8T	4008.5	4014	5.5	0.14	N/A	0.046
U60k#8T	5016.3	5024	7.7	0.15	N/A	0.037
U60k#8T	10023.2	10040	16.8	0.17	N/A	0.019
U60k#8T	15002.3	15030	27.7	0.18	N/A	0.014
U60k#8T	19976.6	20013	36.4	0.18	N/A	0.010
U60k#8T	0.0	0	0			
SECOND RUN / TENSION						
U2k#8T	499.39	500	0.61	0.12	0.03	0.17
U60k#8T	1008.5	1009	0.5	0.05	0.07	0.20
U60k#8T	2017.0	2018	1	0.05	0.06	0.11
U60k#8T	3008.3	3012	3.7	0.12	0.02	0.064
U60k#8T	4007.5	4013	5.5	0.14	0.00	0.046
U60k#8T	4992.5	5000	7.5	0.15	0.00	0.037
U60k#8T	9990.6	10007	16.4	0.16	0.00	0.019
U60k#8T	14975.3	15002	26.7	0.18	0.01	0.014
U60k#8T	19985.8	20023	37.2	0.19	0.00	0.010
U60k#8T	0.0	0	0			

NOTES: CAL = 13671.2 LB, FULL SCALE VALUE = 20000.0 LB

PAGE 3 OF 4

ISO/IEC 17025

ANSI/NCSL Z540-1-1994; Part 1

Accredited by:



NVLAP Lab Code: 200311-0

Certificate and report shall not be reproduced, except in full, without the written approval of UNITED TESTING SYSTEMS CANADA LIMITED.
This report is not to be used to claim product certification, approval, or endorsement by United Testing Systems Canada Limited, NVLAP, NIST, or any government agency.

UNITED CALIBRATION GROUP

Calibration Report

CERTIFICATE NUMBER: CR#0001
CERTIFICATE ISSUED: June 5, 2019

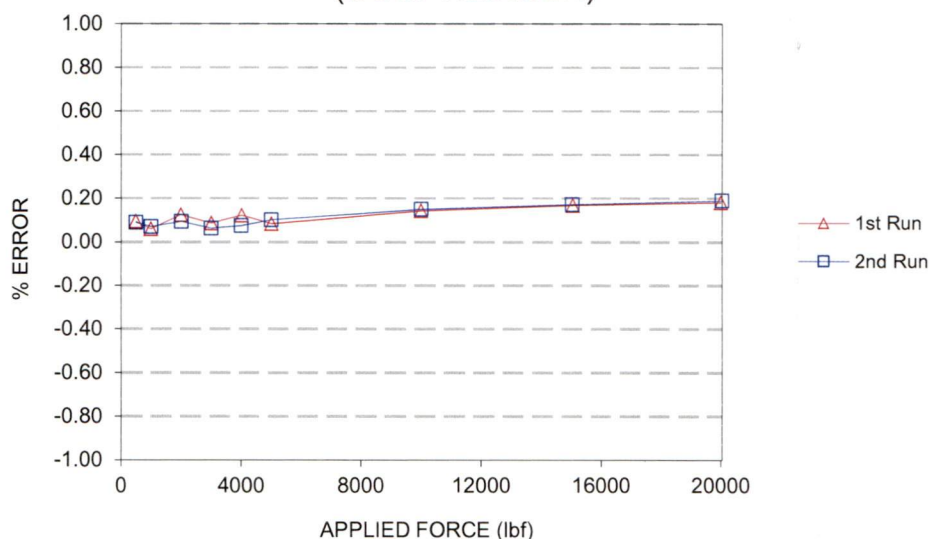
CALIBRATION DATE: June 5, 2019
REQUESTED DUE DATE: June 5, 2020

CALIBRATION & CUSTOMER INFORMATION:

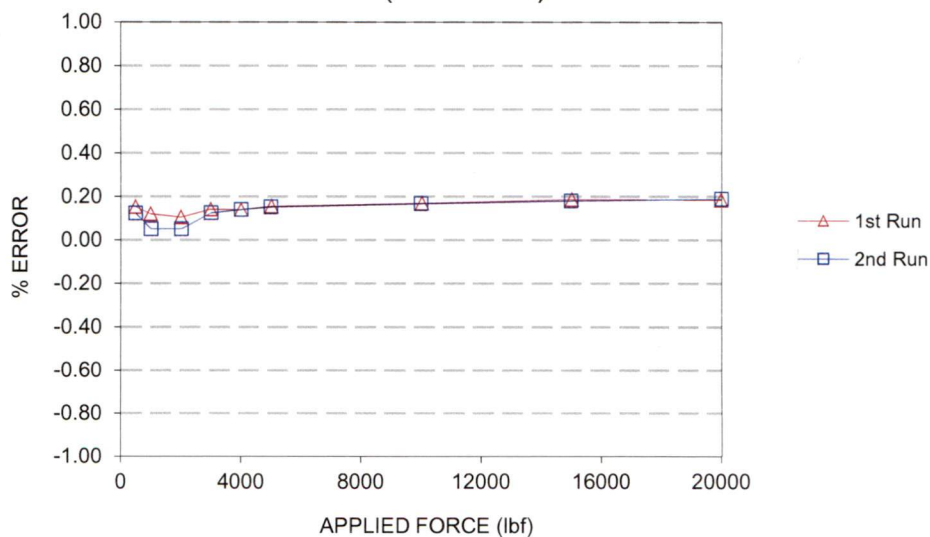
COMPANY: ANY COMPANY
SYSTEM CALIBRATED: UNITED STM-100KN S/N XXXXX
LOAD CELL/TRANSDUCER: UNITED U-20K-PQU-12-S S/N XXXX

CALIBRATION RESULTS:

DEVIATION OF CALIBRATION RUNS
(COMPRESSION)



DEVIATION OF CALIBRATION RUNS
(TENSION)



PAGE 4 OF 4

ISO/IEC 17025

ANSI/NCSL Z540-1-1994; Part 1

Accredited by:



NVLAP Lab Code: 200311-0

Certificate and report shall not be reproduced, except in full, without the written approval of UNITED TESTING SYSTEMS CANADA LIMITED.
This report is not to be used to claim product certification, approval, or endorsement by United Testing Systems Canada Limited, NVLAP, NIST, or any government agency.

UNITED CALIBRATION GROUP