مركز الإمارات العالمي للاعتماد
Emirates International Accreditation Centre

ACCREDITATION CERTIFICATE

002-LB-CAL

Emirates **I**nternational **A**ccreditation **C**entre

has accredited

DANWAY CALIBRATION & MEASUREMENTS LABORATORY

Dubai-United Arab Emirates

In accordance with the requirements of

ISO/IEC 17025:2017

General requirements for the competence of testing and calibration laboratories

to undertake the calibration in the attached accreditation scope

This Accreditation is invalid without the attached accreditation scope and shall remain in force within the validity period printed below, subject to continuing compliance with the requirements of the accreditation criteria.

Validity: 09-07-2020 to 30-06-2021

Initial Accreditation Date: 30/06/2003

ilac-MRA

مركز الإمارات العالمي للاعتماد
Emirates International Accreditation Centre

CHIEF EXECUTIVE OFFICER
APPROVAL

Accreditation Scope

002-LB-CAL

Danway Calibration & Measurements Laboratory

Dubai-United Arab Emirates

Date: 09-7-2020 **Valid to: 30-06-2021**

Accreditation History

Scope	Issue No.	Details	Date
Mass & Balance	10	Scope presentation have all changed to avoid overlapping of ranges in addition to modification in CMC Values	09-07-2020
Pressure			
Force		Slight modification to methods and ranges	
Dimensional	10	Change the description of Dial gauges under calibration field	29-9-2019
Temperature		Revising the wording of calibration method based on customer's request	
Dimensional	9	Renewal accreditation and first issuance under the name of EIAC (which was formerly known as DAC)	20-01-2019
Mass & Balance		Renewal accreditation, Modification in the CMC Values and first issuance under the name of EIAC (which was formerly known as DAC)	
Pressure		Renewal accreditation, extension in scope and first issuance under the name of EIAC	
Temperature		Renewal accreditation and first issuance under the name of EIAC	
Force		Renewal accreditation, Modification in the CMC Values and first issuance under the name of EIAC (which was formerly known as DAC)	
Electrical	2	Renewal accreditation and first issuance under the name of EIAC	
Humidity			
Time			
Dimensional	8	Extension in scope	8-5-2018
Mass & Balance		no change	
Pressure		no change	
Temperature		Extension in scope	
Force		no change	
Electrical	1	Granted accreditation from Dubai Accreditation Center 'DAC'	
Humidity			
Time			

Accreditation Scope

Dimensional Calibration

002-LB-CAL

Danway Calibration & Measurements Laboratory

Dubai-United Arab Emirates

Issue no.: 10 **Date: 29-09-2019** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
All Types of Calipers Digital Vernier Dial	DCML-D/WI-001 In-house method based on ISO 13385-1	Up to 200 mm	Laboratory 0.01 mm	Laboratory
		300 mm up to 600 mm	0.02 mm	
External Micrometer	DCML-D/WI-002 In-house method based on ISO 3611	0 up to 25 mm	0.002 mm	
Dial gauges (Digital & analogue / LVDT with Indicator)	DC ML-D/WI-003 In-house method based on ISO 463	Up to 100 mm	0.004 mm	
Tapes and Scales Calibrator	DCML-D/WI-005 In-house method based on manufacturer's Guide	Up to 1000 mm	0.06 mm	Laboratory/ Customer Premises
Calibration of Scales (Steel Rules)	DCML-D/WI-004 In-house method	Up to 1000 mm	0.67 mm	Laboratory

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Accreditation Scope

Dimensional Calibration

002-LB-CAL

Danway Calibration & Measurements Laboratory

Dubai-United Arab Emirates

Issue no.: 10 **Date: 29-09-2019** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Steel Tapes	DCML-D/WI-004 In-house method	Up to 5 m	1.5 mm	Laboratory
		5 m Up to 10 m	2.2 mm	
		10 m Up to 20 m	3.0 mm	
Test Sieves Aperture Size	DCML-D/WI-008 In house method based ISO 3310-1 BS 410-1	20 µm Up to 125 mm	0.009 mm	

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Accreditation Scope

Mass and Balance Calibration

002-LB-CAL

Danway Calibration & Measurements Laboratory

Dubai-United Arab Emirates

Issue no.: 10 **Date: 09-07-2020** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Top loading weighing scale	ASTM E898-88 (2013)	0 to 210 g	0.0005 g	Customer Premises
		>210 g to 410 g	0.001 g	
		> 410 g to 2 kg	0.01 g	
		>2 kg to 6 kg	0.04 g	
		>6 kg to 15 kg	0.1 g	
		>15 kg to 32 kg	0.2 g	
		>32 kg to 60 kg	0.6 g	
		>60 kg to 100 kg	5 g	
		>100 kg to 150 kg	50 g	
		>150 kg to 500 kg	0.12 kg	
		>500 kg to 1000 kg	0.2 kg	
		>1000 kg to 5000 kg	1.5 kg	
M1 Mass calibration	OIML R 111 -1 :2004	50000 g	0.8 g	Laboratory
		20000 g	0.3 g	
		10000 g	0.16 g	
		5000 g	0.08 g	

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Mass and Balance Calibration

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Dubai-United Arab Emirates

Issue no.: 10 **Date: 09-07-2020** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
M1 Mass calibration	OIML R 111 -1 :2004	2000 g	0.03 g	Laboratory
		1000 g	016 mg	
		500 g	08 mg	
		200 g	3 mg	
		100 g	1.6 mg	
		50 g	1 mg	
		20 g	0.8 mg	
		10 g	0.6 mg	
		5 g	0.5 mg	
		2 g	0.4 mg	
		1 g	0.3 mg	
Mass Calibration	Standard Weights as per OIML R111-1 : 2004	500 kg	25 g	Laboratory
Conventional Mass		1000 kg	50 g	
Truck Scales	DCML-M/WI-010 in accordance to Euramet cg 18 v4 (2015)	0 to 20 ton	22 kg	Customer Premises
		> 20 ton to 40 ton	32 kg	
		> 40 ton to 60 ton	45 kg	

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Mass and Balance Calibration

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Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Truck Scales	DCML-M/WI-010 in accordance to Euramet cg 18 v4 (2015)	> 60 ton to 80 ton	56 kg	Customer Premises
		> 80 ton to 100 ton	65 kg	
		> 100 ton to 120 ton	73 kg	
Batching Plants: Calibration of concrete and Asphalt batching plants, Hopper scale and Tank scale	ASTM C94/C94M-00 & NIST Handbook 44 - 2018	0 to 1000 kg	0.082 kg	
		>1000 to 5000 kg	1.2 kg	
		>5000 kg to 16.5 ton	5.8 kg	

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Accreditation Scope

Pressure Calibration

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Issue no.: 10 **Date: 09-07-2020** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Analogue or digital Pressure gauges of class up to 0.1% Using pressure comparator. Medium : Gas	Work instruction DCML-P/WI-001 based on DKD R 6-1 and BS EN 837-1	-95 kPa up to 0 kPa	0.2 kPa	Laboratory/ Customer Premises
		0 kPa Up to 2000 kPa	1 kPa	
		> 2 MPa Up To 7 MPa	7 kPa	
Analogue or digital Pressure gauges of class up to 0.1% Using Dead weight tester. Medium : Oil		0.3 MPa Up to 6 MPa	0.11 % of Reading.	Laboratory
		> 6 MPa Up to 120 MPa	0.04 % of Reading	
Analogue or digital Pressure gauges of class up to 0.1% Using Reference gauge Medium : Oil		0 MPa Up to 70 MPa	0.13% of Reading	Laboratory/ Customer Premises

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Accreditation Scope

Temperature Calibration

002-LB-CAL

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Issue no.: 10 **Date: 29-09-2019** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Liquid-in-glass thermometers	DCML-T/WI-001	-30 °C up to 125 °C	0.2 °C	Laboratory
Digital thermometer with PRT or NTC sensor	DCML-T/WI 001 * minimum temperature= ambient - 40 °C	-30 °C* up to 300 °C	0.2 °C	Laboratory
		-20 °C* up to 300 °C	0.3 °C	Customer Premises
		30 °C to 300 °C	0.2 °C	Laboratory
		300 °C to 500 °C	1.9 °C	
Digital thermometer with TC sensor	DCML-T/WI 001 * minimum temperature = ambient - 40 °C	-20 °C* to 300 °C	0.8 °C	Laboratory/ Customer Premises
		30 °C to 300 °C	0.7 °C	Laboratory
		300 °C to 500 °C	2.0 °C	
Calibration of thermometer with built in sensors and mercury maximum minimum thermometers	DCML-T/ WI 005	10 °C up to 60 °C	0.5 °C	Laboratory

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Issue no.: 10 **Date: 29-09-2019** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Climatic Chamber (9 points)	DCML-T/WI-002 DKD-R5-7	30 °C up to 180 °C	1.1 °C	Laboratory/ Customer Premises
Measuring location in climatic chamber	DCML-T/WI-002 & DKD-R 5-7 method C	30 °C to 180 °C	1.1 °C	Laboratory/ Customer Premises
Water bath, incubators (5 points)	DCML-T/WI-002 DKD-R5-7	5 °C up to 95 °C	1 °C	
Freezer / Chiller (9 points)	DCML-T/WI-002 DKD-R5-7	-30 °C up to 95 °C	1.1 °C	
Measuring location in freezer or chiller	DCML-T/WI-002 & DKD-R 5-7 method C	-30 °C to 95 °C	1.1 °C	
Measuring location in Furnace (1 point)	DCML-T/WI-002 DKD-R5-7 (Muffle Furnace)	30 °C up to 180 °C	1.1 °C	
		180 °C up to 300 °C	1.3 °C	
		300 °C up to 800 °C	4.0 °C	
		800 °C up to 1100 °C	9.0 °C	
Calibration of infrared thermometers	DCML-T/ WI 004	-35 °C up to 100 °C	1 °C	Laboratory
		100 °C up to 150 °C	2 °C	

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Issue no.: 10 **Date: 29-09-2019** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Temperature Indicators Calibration by Electrical Simulation				
Type K thermocouple	DCML-E/WI-007	-200 °C to -100 °C	0.50 K	laboratory/ customer premises
		-100 °C to 1372 °C	0.36 K	
Type J thermocouple	DCML-E/WI-007	-210 °C to -50 °C	0.30 K	
		-50 °C to 1200 °C	0.40 K	
Type T thermocouple	DCML-E/WI-007	-200 °C to 100 °C	0.40 K	
		100 °C to 400 °C	0.30 K	
Type R thermocouple	DCML-E/WI-007	-50 °C to 50 °C	2,0 K	
		50 °C to 250 °C	1.4 K	
		250 °C to 1768 °C	1.2 K	
Type S thermocouple	DCML-E/WI-007	-50 °C to 500 °C	1.8 K	
		500 °C to 1768 °C	1.2 K	
Type B thermocouple	DCML-E/WI-007	300 °C to 800 °C	3.0 K	
		800 °C to 1820 °C	1.6 K	

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Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Temperature Indicators Calibration by Electrical Simulation				
Type E thermocouple	DCML-E/WI-007	-200 °C to 0 °C	0.40 K	laboratory/ customer premises
		0 °C to 1000 °C	0.24 K	
Type N thermocouple	DCML-E/WI-007	-200 °C to 0 °C	0.80 K	
		0 °C to 600 °C	0.30 K	
		600 °C to 1300 °C	0.40 K	
PT 100	DCML-E/WI-007	-140 °C to 50 °C	0.50 K	
		50 °C to 850 °C	0,41 K +1,8mK/K*T	

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Accreditation Scope

Force Calibration

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Issue no.: 10 **Date: 09-07-2020** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Calibration of Force measuring devices (soil testing rings, proving rings or load cells with indicator)	Work Instruction No : DCML-F/WI-002 based on BS 1377-1	200 N up to 200 kN in compression	1.0 % of reading	Laboratory
Verification / Calibration of Tension and Compression testing machines	BS EN ISO 7500-1 & ASTM E4	3000 kN down to 100 kN in Compression	0.30% of reading	Customer Premises
		100 kN down to 0.2 kN in Compression and Tension	0.18% of reading	
		200 N down to 10 N in Compression & Tension	0.10% of reading	
Verification/ Calibration of Poing Load Testers	Work Instruction DCML-F/WI-001 Based on ISO 7500-1	100 kN down to 1 kN in Compression	1.0% of reading	Laboratory/ Customer Premises
Calibration of Pull out and Pull off Tester	DCML-F/WI-003 based on ASTM C900	0.2 kN up to 100 kN in Tension	0.3% of reading	Laboratory

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Issue no.: 10 **Date: 09-07-2020** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
CBR and Marshall Testing Machines	Work Instruction DCML-F/WI-001 Based on ISO 7500-1 & ASTM E4	100 kN down to 0.2 kN in Compression	0.3% of reading	Laboratory/ Customer Premises
Calibration of force and load measuring devices with indicator for industrial applications	DCML-F/WI-006 based on standard calibration of BS422	100 N to 100 kN in tension	1 % of reading	Laboratory
		100 kN up to 1 MN in Tension	1.3 % of reading	
Calibration of Hydraulic Jack with indicator	DCML-F/WI-004	0.2 kN ≤ to ≤ 100 kN in Compression	0.6% of reading	Laboratory
		100 kN ≤ to ≤ 1 MN in Compression	1.0% of reading	
Compression Testing Machines for Concrete - Performance Test	DCML-F/WI-007 based on BS EN 12390-4	200 kN and 2000 kN Alignment of Upper Machine Platen	N/A	Customer Premises

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Accreditation Scope

Electrical Calibration

002-LB-CAL

Danway Calibration & Measurements Laboratory

Dubai-United Arab Emirates

Issue no.: 02 **Date: 20-01-2019** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Calibration of Source				
DC Voltage meter	Work Instruction DCML-E/WI-001 (Based on Euramet calibration guide for the calibration of multimeters-cg-15)	0 mV to 200 mV	18 µV	Laboratory/ Customer premises
		> 200 mV up to 2 V	1 mV	
		> 2 V up to 20 V	16 mV	
		>20 V up to 200 V	16 mV	
		> 200 V to 1050 V	0.11 V	
		0 µA to 200 µA	64 nA	
		> 0.2 mA to 2 mA	1.1 µA	
		> 2 mA to 20 mA	3.5 µA	
		> 20 mA to 200 mA	0.04 mA	
		> 0.2 A to 2 A	1.6 mA	
		2 A to 22 A	21 mA	
AC Voltage meter		0 mV to 200 mV	0.41 mV	Laboratory/ Customer premises
		> 0.2 V to 2 V	2.2 mV	
		> 20 V to 200 V	0.17 V	

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Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Calibration of Source				
AC Voltage meter	Work Instruction DCML-E/WI-001 (Based on Euramet calibration guide for the calibration of multimeters-cg-15)	> 200 V to 1050 V	1.2 V	Laboratory/ Customer premises
		0 µA to 200 µA	0.53 µA	
		> 0.2 mA to 2 mA	3.0 µA	
		> 2 mA to 20 mA	0.11 mA	
		> 20 mA to 200 mA	0.36 mA	
		> 0.2 A to 2 A	9.4 mA	
		> 2 A to 20 A	58 mA	
Resistance meter using Decade Resistance		10 Ω	100 Mω	Laboratory/ Customer premises
		100 Ω	12 mΩ	
		1 kΩ	1 Ω	
		10 kΩ	1 Ω	
		100 kΩ	1.5 Ω	
		1 MΩ	1 kΩ	
		10 MΩ	71 kΩ	
		100 MΩ	4.1 M Ω	
		1 GΩ	0.12 GΩ	

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Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Calibration of Source				
Resistance meter using Simulated Resistance	Work Instruction DCML-E/WI-001 (Based on Euramet calibration guide for the calibration of multimeters-cg-15)	0 Ω to 400 Ω	0.37 Ω	Laboratory/ Customer premises
		0.4 KΩ to 4 KΩ	6.4 Ω	
		4 KΩ to 40 KΩ	17 Ω	
Capacitance meter		1 nF @ 1 kHz	14 pF	Laboratory/ Customer premises
		10 nF @ 1 kHz	36 pF	
		20 nF @ 1 kHz	60 pF	
		50 nF @ 1 kHz	0.13 nF	
		100 nF @ 1 kHz	0.26 nF	
		200 nF @ 1 kHz	0.48 nF	
		500 nF @ 1 kHz	1.2 nF	
		1 µF @ 1 kHz	3 nF	
Digital Frequency meter		0 Hz to 50 Hz	0.001 Hz	Laboratory/ Customer premises
		> 50 Hz to 200Hz	0.005Hz	

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Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Calibration of Source				
Digital Frequency meter	Work Instruction DCML-E/WI-001 (Based on Euramet calibration guide for the calibration of multimeters-cg-15)	> 200 Hz to 10kHz	0.001 kHz	Laboratory/ Customer premises
		> 2 10 kHz to 100kHz	0.002kHz	
		> 2 100 kHz to500 kHz	0.012kHz	
		> 500 kHz to 10 MHz	0.001MHz	
Digital period		Upto100 ns	0.003ns	Laboratory/ Customer premises
		>100 ns to 10µs	0.001µs	
		>10µs to 100µs	0.002µs	
		>100µs to 1ms	0.001µs	
		>1ms to 100 ms	0.002ms	
		>100ms to 1s	0.001ms	
Clamp meter		1100 A AC @ 50 Hz	4.5 A	Laboratory/ Customer premises
		1100 A DC	3.7 A	
Tachometer		120000 RPM	1.8 RPM	Laboratory/ Customer premises

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Accreditation Scope

Electrical Calibration

002-LB-CAL

Danway Calibration & Measurements Laboratory

Dubai-United Arab Emirates

Issue no.: 02 **Date: 20-01-2019** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Calibration of Measure				
DC Voltage	Work instruction DCML-E/WI-002	0 mV to 100 mV	11 µV	Laboratory/ Customer premises
		> 100 mV to 1 V	1 mV	
		> 1 V to 10 V	1.1 mV	
		> 10 V to 100 V	8 mV	
		> 100 V to 1000 V	8.4 mV	
		0 mA to 10 mA	8.5 µA	
		> 10 mA to 100 mA	6.4 µA	
		> 100 mA to 1 A	1.6 mA	
		> 1 A to 3 A	5 mA	
AC Voltage 50Hz	Work instruction DCML-E/WI-002	0 mV to 100 mV	0.12 mV	Laboratory/ Customer premises
		> 100 mV to 1 V	1 mV	
		> 1 V to 10 V	10 mV	
		>10 V to 100 V	0.1 V	
		>100 V to 500 V	0.5 V	
		>500 V to 750 V	0.79 V	

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Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Calibration of Measure				
AC Current	Work instruction DCML-E/WI-002	0 A to 1 A (10 Hz to 5 kHz)	2 mA	Laboratory/ Customer premises
		> 1 A to 3 A (10 Hz to 5 kHz)	0.21 A	
Resistance	Work instruction DCML-E/WI-002	0 Ω to 100 Ω	22 mΩ	Laboratory/ Customer premises
		> 100 Ω to 1 kΩ	1 Ω	
		> 1 kΩ to 10 kΩ	2 Ω	
		> 10 kΩ to 100 kΩ	21 Ω	
		> 100 kΩ to 1 MΩ	1 kΩ	
Insulation Tester Resistance	Work instruction DCML-E/WI-003 Based on Guide line TG 02-01 of SANAS	10 MΩ	1.2 kΩ	Laboratory/ Customer premises
		50 MΩ	14 kΩ	
		100 MΩ	14 kΩ	
		400 MΩ	0.12 MΩ	
		1 GΩ	0.58 MΩ	

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Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Calibration of Measure				
Insulation Tester Resistance	Work instruction DCML-E/WI-003 Based on Guide line TG 02-01 of SANAS	4 GΩ	1.2 MΩ	Laboratory/ Customer premises
		10 GΩ	5.3 MΩ	
		100 GΩ	12 MΩ	

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Accreditation Scope

Humidity Calibration

002-LB-CAL

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Issue no.: 02 **Date: 20-01-2019** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Hygrometer	DCML-H/WI-00x	10°C to 60°C	0.2 K	Laboratory
		25%rH to 90%rH at 20°C to 30°C	2,5 % RH	
		25%rH to 90%rH at 30°C to 60°C	3,0 % RH	

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Accreditation Scope

Time Calibration

002-LB-CAL

Danway Calibration & Measurements Laboratory

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Issue no.: 02 **Date: 20-01-2019** **Valid to: 30-06-2021**

Calibration Field/ Measuring Quality	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Time	DCML-TI/WI-001 based on NIST Pub. 960-12-2009	0 up to 30 min	0.5 Sec	Laboratory and customer premises
		30 min up to 1 hour	0.81 Sec	

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