



תעודת הסמכה מס' 14

מ.ב.א הזורע טכנולוגיות כיוול אגש"ח בע"מ

כתובת אתר ייחוס: קיבוץ הזורע ד.ג. עמקים, 3658100

עד יום: 12.05.2026

בתוקף מיום: 08.05.2024

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תעודה זו אינה מהווה אישור לפי סעיף 12 לחוק התקנים.

אתי פלר
מנכ"ל
הרשות הלאומית להסמכת מעבדות

תאריך הסמכה ראשון: 13.05.1996



הרשות הלאומית להסמכת מעבדות
Israel Laboratory Accreditation Authority

Calibration Laboratories

ISO/IEC 17025:2017

Accreditation Certificate No. 14

QCC Hazorea Calibration Technologies (A.C.S) Ltd.

Main site address: Kibbutz Hazorea , 3658100 , Israel

Valid from:08.05.2024

Until: 12.05.2026

The organization was assessed by the Israel Laboratory Accreditation Authority (ISRAC) and found to be worthy of accreditation to the detailed schedule attached.

The schedule is an integral part of this certificate and is numbered with the above certificate number.

Accreditation demonstrates technical competence and operation of an internationally recognized quality management system.

The organization accredited by ISRAC complies with the standards / requirements mentioned above, meets the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically competent results. This accreditation is granted in accordance with the requirements of the standard ISO/IEC 17011:2017, and entails periodic surveillance and reassessment by ISRAC to ensure that the organization continues to comply with the accreditation requirements.

The accreditation is valid provided that the organization continues to meet the criteria as laid down by ISRAC. ISRAC is an EA-BLA (European co-operation for Accreditation Bi-Lateral Agreement) signatory.

This certificate does not constitute an approval in accordance with article 12 of the standard law.

Date of first accreditation: 13.05.1996

**Etty Feller
General Manager
Israel Laboratory Accreditation Authority**

Date of signature 08/05/2024

Page No. 2 of: 60



	<u>Name and Address:</u>
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ite: P or T or M , P-Permanent, T-Temporary, M-Mobile

A permanent (P) or temporary (T) place, or a stationary or mobile (M) facility, at or from which the organization performs activities forming part of its scope of accreditation, starting from sampling to final issuance of a report or certificate and / or quality system activities. A temporary (T) site is a site established under the responsibility of an accredited permanent site. All activities performed at a temporary site are the responsibility of the permanent site. An outdoors work is also considered to be a temporary site. Temporary site will be a site that involves work for special project and the activity will be defined in time (up to 2 years).

Type of Scopes: A- Fixed, C- Flexible scope in analytical tests : Type of matrix, analytes, experimental systems and/or analytical characteristics may be subject to changes, in accordance with the laboratory's approved and documented procedures. For details, please refer to the list of Accredited Tests, available from the laboratory upon request.



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
1	A	P	DC Voltage, Sources	± 1 V	2 μV/V	MetCal Automated Calibration Software Manufacturer instructions WI-C104 WI-C100 WI-C103	Datron 1281 Wavetek 4912 Fluke 8508A Fluke 8588A
2	A	P		± 1.018 V	2 μV/V		
3	A	P		± 10 V	1 μV/V		
4	A	P;T		0 mV	0.12 μV		
5	A	P		[0.1 μV to 200 mV]	4.2 μV/V		
6	A	P		(200 mV to 2 V)	1.7 μV/V		
7	A	P		(2V to 20 V)	1.2 μV/V		
8	A	P		(20 V to 1050 V)	1.4 μV/V		
9	A	T		[0.1 μV to 200 mV]	14 μV/V		
10	A	T		(200 mV to 1V)	6.7 μV/V		
11	A	T		(1 V to 10 V)	5 μV/V		
12	A	T		(10 V to 100 V)	5 μV/V		
13	A	T		(100 V to 1000 V)	8.3 μV/V		
14	A	P, T	DC Voltage, Measuring Instruments	0 mV	0.14 μV	MetCal Automated Calibration Software Manufacturer instructions WI-C100	Fluke 5520A Fluke 5522A Fluke 5730A
15	A	P		[0.1 μV to 220 mV]	6.1 μV/V		
16	A	P		(0.22 V to 2.2 V)	2 μV/V		
17	A	P		(2.2 V to 22 V)	2 μV/V		
18	A	P		(22 V to 220 V)	1.6 μV/V		
19	A	P		(220 V to 1100 V)	2.2 μV/V		
20	A	T		(0 mV to 329.9999 mV)	8.4 μV/V		
21	A	T		(329.9999 mV to 3.299999 V)	15 μV/V		
22	A	T		(3.299999 V to 32.99999 V)	16 μV/V		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
23	A	T		(32.99999 V to 329.999 V]	26 μ V/V		
24	A	T		(329.9999 V to 1000 V]	26 μ V/V		
25	A	P;T	DC Current. Sources	זרם ישר, מחוללים 0 μ A [10 nA to 200 μ A] (200 μ A to 2 mA] (2 mA to 20 mA] (20 mA to 200 mA] (200 mA to 2 A] (2 A to 20 A] (20 A to 30 A]	0.51 nA	MetCal Automated Calibration Software Manufacturer instructions WI-C100	Datron 1281 Fluke 8508A Fluke 8588A
26	A	P;T			7.3 μ A/A		
27	A	P;T			8.1 μ A/A		
28	A	P;T			4.5 μ A/A		
29	A	P;T			11 μ A/A		
30	A	P;T			14 μ A/A		
31	A	P;T			48.7 μ A/A		
32	A	P;T	2.1 mA/A				
33	A	P;T	DC Current, Measuring Instruments	זרם ישר, מכשירי מדידת זרם 0 μ A [2 nA to 220 μ A] (220 μ A to 2.2 mA] (2.2 mA to 22 mA] (22 mA to 220 mA] (220 mA to 2.2 A] (2.2 A to 20 A] (20 A to 105 A] (105 A to 160 A] (160 A to 525 A] (525 A to 1000 A]	0.52 nA	MetCal Automated Calibration Software Manufacturer instructions WI-C100	Fluke 5520A Fluke 5522A Fluke 5730A Fluke 5725A Current Coils
34	A	P;T			8 μ A/A		
35	A	P;T			10 μ A/A		
36	A	P;T			6 μ A/A		
37	A	P;T			14 μ A/A		
38	A	P;T			16 μ A/A		
39	A	P;T			480 μ A/A		
40	A	P;T			0.64 mA/A		
41	A	P;T			9.64 mA/A		
42	A	P;T			32.2 mA/A		
43	A	P;T			74.8 mA/A		
44	A	P;T	AC Voltage, Sources	מתח חילופין מחוללים מתח (0.22 mV to 200 mV] [1 Hz to 10 Hz]	46 μ V/V	MetCal	Datron 1281 FLUKE 8508A



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
45	A	P;T		(10 Hz to 100 Hz)	45 μ V/V	Automated Calibration Software	Fluke 8588A
46	A	P;T		(100 Hz to 2 kHz)	57 μ V/V	Manufacturer instructions	
47	A	P;T		(2 kHz to 10 kHz)	40 μ V/V	WI-C100	
48	A	P;T		(10 kHz to 30 kHz)	41 μ V/V		
49	A	P;T		(30 kHz to 1 MHz)	60 μ V/V		
				(200 mV to 2 V)			
50	A	P;T		[1 Hz to 10 Hz]	26 μ V/V		
51	A	P;T		(10 Hz to 40 Hz)	24 μ V/V		
52	A	P;T		(40 Hz to 100 Hz)	20 μ V/V		
53	A	P;T		(100 Hz to 2 kHz)	18 μ V/V		
54	A	P;T		(2 kHz to 30 kHz)	20 μ V/V		
55	A	P;T		(30 kHz to 100 kHz)	22 μ V/V		
56	A	P;T		(100 kHz to 300 kHz)	140 μ V/V		
57	A	P;T		(300 kHz to 1 MHz)	620 μ V/V		
				(2 V to 20V)			
58	A	P;T		[1 Hz to 10 Hz]	38 μ V/V		
59	A	P;T		(10 Hz to 40 Hz)	28 μ V/V		
60	A	P;T		(40 Hz to 100 Hz)	21 μ V/V		
61	A	P;T		(100 Hz to 2 kHz)	20 μ V/V		
62	A	P;T		(2 kHz to 10 kHz)	22 μ V/V		
63	A	P;T		(10 kHz to 30 kHz)	25 μ V/V		
64	A	P;T		(30 kHz to 1 MHz)	192 μ V/V		
				(20V to 200V)			
65	A	P;T		[1 Hz to 10 Hz]	38 μ V/V		



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Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
66	A	P;T		(10 Hz to 40 Hz]	35 μ V/V		
67	A	P;T		(40 Hz to 100 Hz]	36 μ V/V		
68	A	P;T		(100 Hz to 2 kHz]	27 μ V/V		
69	A	P;T		(2 kHz to 100 kHz]	33 μ V/V		
70	A	P;T		(100 kHz to 1 MHz]	54 μ V/V		
				(200 V to 1050 V]			
71	A	P;T		[1 Hz to 100 Hz]	51 μ V/V		
72	A	P;T		(100 Hz to 1 kHz]	50 μ V/V		
73	A	P;T		(1 kHz to 100 kHz]	40 μ V/V		
74	A	P;T	AC Voltage. Measuring Instruments	(0.22 mV to 220 mV]		MetCal	Fluke 5520A
			מתח חילופין	[10Hz to 20 Hz]	56 μ V/V	Automated Calibration Software	Fluke 5522A
			מכשירי מדידת מתח	(20 Hz to 40 Hz]	55 μ V/V	Manufacturer instructions	FLUKE 5730A
75	A	P;T		(20 Hz to 40 Hz]	55 μ V/V		
76	A	P;T		(40 Hz to 1 kHz]	69 μ V/V		
77	A	P;T		(1 kHz to 20 kHz]	50 μ V/V	WI-C100	
78	A	P;T		(20 kHz to 50 kHz]	49 μ V/V		
79	A	P;T		(50 kHz to 500 kHz]	72 μ V/V		
80	A	P;T		(500 kHz to 1 MHz]	73 μ V/V		
				(220 mV to 2.2 V]			
81	A	P;T		[10Hz to 20 Hz]	31 μ V/V		
82	A	P;T		(20 Hz to 40 Hz]	30 μ V/V		
83	A	P;T		(40 Hz to 20 kHz]	24 μ V/V		
84	A	P;T		(20 kHz to 100 kHz]	27 μ V/V		
85	A	P;T		(100 kHz to 500 kHz]	168 μ V/V		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
86	A	P;T		(500 kHz to 1 MHz) (2.2 V to 22 V)	745 μ V/V		
87	A	P;T		[10Hz to 20 Hz]	53 μ V/V		
88	A	P;T		(20 Hz to 40 Hz)	34 μ V/V		
89	A	P;T		(40 Hz to 50 kHz)	31 μ V/V		
90	A	P;T		(50 kHz to 500 kHz)	230 μ V/V		
91	A	P;T		(500 kHz to 1 MHz)(22 V to 220 V)	750 μ V/V		
92	A	P;T		[10Hz to 20 Hz]	46 μ V/V		
93	A	P;T		(20 Hz to 40 Hz)	43 μ V/V		
94	A	P;T		(40 Hz to 20 kHz)	39 μ V/V		
95	A	P;T		(20 kHz to 100 kHz)	40 μ V/V		
96	A	P;T		(100 kHz to 1 MHz) (220 V to 1100 V)	65 μ V/V		
97	A	P;T		(15 Hz to 50 Hz)	79 μ V/V		
98	A	P;T		(50 Hz to 1kHz)	51 μ V/V		
99	A	P;T	AC Current Sources	זרם חילופין מחוללי זרם Up to 200 μ A]		MetcalAutomated Calibration Software Manufacturer Instruction WI-C100	Datron 1281 Fluke 8508A Fluke 8588A
100	A	P;T		[1 Hz to 100 Hz]	67 μ A/A		
101	A	P;T		(100 Hz to 500 Hz)	60 μ A/A		
102	A	P;T		(500 Hz to 1 kHz)	91 μ A/A		
103	A	P;T		(1 kHz to 5 kHz)	150 μ A/A		
104	A	P;T		(5 kHz to 10 kHz)	400 μ A/A		
105	A	P;T		(200 μ A to 2 mA) [1 Hz to 100 Hz] (100 Hz to 1 kHz]	72 μ A/A 60 μ A/A		



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Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
106	A	P;T		(1 kHz to 5 kHz]	80 μA/A		
107	A	P;T		(5 kHz to 100 kHz]	110 μA/A		
				(2 mA to 20 mA]			
108	A	P;T		[1 Hz to 100 Hz]	38 μA/A		
109	A	P;T		(100 Hz to 500 Hz]	36 μA/A		
110	A	P;T		(500 Hz to 1 kHz]	35 μA/A		
111	A	P;T		(1 kHz to 5 kHz]	55 μA/A		
112	A	P;T		(5 kHz to 100 kHz]	73 μA/A		
				(20 mA to 200 mA]			
113	A	P;T		[1 Hz to 100 Hz]	28 μA/A		
114	A	P;T		(100 Hz to 500 Hz]	27 μA/A		
115	A	P;T		(500 Hz to 1 kHz]	39 μA/A		
116	A	P;T		(1 kHz to 5 kHz]	45 μA/A		
117	A	P;T		(5 kHz to 100 kHz]	51 μA/A		
				(200 mA to 2 A]			
118	A	P;T		[1 Hz to 500 Hz]	160 μA/A		
119	A	P;T		(500 Hz to 1 kHz]	150 μA/A		
120	A	P;T		(1 kHz to 5 kHz]	130 μA/A		
121	A	P;T		(5 kHz to 100 kHz]	220 μA/A		
				(2 A to 20 A]			
122	A	P;T		(1 Hz to 2 kHz]	1.2 mA/A		
123	A	P;T		(2kHz to 10kHz]	3.2mA/A		
124	A	P;T		(5 kHz to 100 kHz]	220 μA/A		
				(20 A to 30 A]			
125	A	P;T		(10 Hz to 2 kHz]	3.7 mA/A		
126	A	P;T		(2kHz to 10kHz]	4.8 mA/A		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
127	A	P;T	AC Current Measuring Instruments	זרם חילופין מכשירי מדידה (0.1 μA to 220 μA)		MetCal	Fluke 5520A
128	A	P;T		[1 Hz to 100 Hz]	132 μA/A	Automated	Fluke 5522A
129	A	P;T		(100 Hz to 500 Hz)	87 μA/A	Calibration Software	Fluke 5725A
130	A	P;T		(500 Hz to 1 kHz)	110 μA/A	Manufacturer instructions	Fluke 5730A
131	A	P;T		(1 kHz to 5 kHz)	161 μA/A	WI-C100	Current Coils
132	A	P;T		(5 kHz to 10 kHz)	415 μA/A		
133	A	P;T		(220 μA to 2.2 mA)			
134	A	P;T		[1 Hz to 100 Hz]	93 μA/A		
135	A	P;T		(100 Hz to 500 Hz)	85 μA/A		
136	A	P;T		(500 Hz to 1 kHz)	84 μA/A		
137	A	P;T		(1 kHz to 5 kHz)	99 μA/A		
138	A	P;T		(5 kHz to 10 kHz)	610 μA/A		
139	A	P;T		(2.2 mA to 22 mA)			
140	A	P;T		[1 Hz to 100 Hz]	110 μA/A		
141	A	P;T		(100 Hz to 500 Hz)	71 μA/A		
142	A	P;T		(500 Hz to 1 kHz)	76 μA/A		
143	A	P;T		(1 kHz to 5 kHz)	150 μA/A		
144	A	P;T		(5 kHz to 10 kHz)	110 μA/A		
145	A	P;T		(22 mA to 220 mA)			
146	A	P;T		[1 Hz to 100 Hz]	110 μA/A		
				(100 Hz to 500 Hz)	65 μA/A		
				(500 Hz to 1 kHz)	73 μA/A		
				(1 kHz to 5 kHz)	75 μA/A		
				(5 kHz to 10 kHz)	135 μA/A		
				(220 mA to 2.2 A)			



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
147	A	P;T		[1 Hz to 100 Hz]	270 μA/A		
148	A	P;T		(100 Hz to 500 Hz)	170 μA/A		
149	A	P;T		(500 Hz to 1 kHz)	220 μA/A		
150	A	P;T		(1 kHz to 5 kHz)	150 μA/A		
151	A	P;T		(5 kHz to 10 kHz)	450 μA/A		
152	A	P;T		(2.2 A to 11 A)			
				[1 Hz to 1 kHz]	558 μA/A		
153	A	P;T		(1 kHz to 5 kHz)	1.2 mA/A		
154	A	P;T		(5 kHz to 10 kHz)	4.3 mA/A		
155	A	P;T		(11 A to 20.5 A)			
				[45 Hz to 100 Hz]	7.23 mA/A		
156	A	P;T		(100Hz to 1 kHz)	7.6 mA/A		
157	A	P;T		(1 kHz to 5 kHz)	41 mA/A		
158	A	P;T		(20 A to 32 A)	8.2 mA/A		
				[10 Hz to 440 Hz]			
159	A	P;T		(32 A to 160 A)	39 mA/A		
				[10 Hz to 100 Hz]			
160	A	P;T		(160 A to 200 A)			
				[10 Hz to 440 Hz]	68 mA/A		
161	A	P;T		(200 A to 1000 A)			
				[10 Hz to 50 Hz]	195 mA/A		
162	A	P;T	DC Resistance,	[0.0001Ω±0.5 Ω] @ [1A÷10A]	0.047%	Manufacturer instructions	Low currents
163	A	P;T	Shunts	[0.0001Ω±0.5 Ω] @ (10A÷50A)	0.085%	WI-C100	Fluke 5730A
164	A	P;T		[0.0001Ω±0.5 Ω] @ [50A÷141A]	0.021%	WI-C101	Fluke 5725A
165	A	P;T		[0.0005Ω±0.5 Ω] @ [141A÷224A]	0.01%		Fluke 8508A Fluke 8588A



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Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
166	A	P;T		[0.0005Ω±0.5 Ω] @ [224A÷300A)	0.0064%		High currents
167	A	P;T		[0.0005Ω±0.5 Ω] @ 300A	0.0054%		Std. Shunt 7.5 digit DMM
168	A	P	DC Resistance, Sources	0 Ω	1.6 μΩ	MetCal	Datron 1281
169	A	P		(0 Ω to 2 Ω]	4 μΩ/Ω	Automated Calibration Software Manufacturer instructions WI-C100	FLUKE 8508A
170	A	P		(2 Ω to 20 Ω]	4.1 μΩ/Ω		Fluke 8588A
171	A	P		(20 Ω to 200 Ω]	3.9 μΩ/Ω		
172	A	P		(200 Ω to 2 kΩ]	5 μΩ/Ω		
173	A	P		(2 kΩ to 20 kΩ]	4.1 μΩ/Ω		
174	A	P		(20 kΩ to 200 kΩ]	3.4 μΩ/Ω		
175	A	P		(200 kΩ to 2 MΩ]	8.5 μΩ/Ω		
176	A	P		(2 MΩ to 20 MΩ]	19 μΩ/Ω		
177	A	P		(20 MΩ to 200 MΩ]	140 μΩ/Ω		
178	A	P		(200 MΩ to 2 GΩ]	190 μΩ/Ω		
179	A	P		(2 GΩ to 20 GΩ]	120 μΩ/Ω		
180	A	T		0 Ω	4 μΩ		
181	A	T		(0 Ω to 2 Ω]	17 μΩ/Ω		
182	A	T		(2 Ω to 20 Ω]	9 μΩ/Ω		
183	A	T		(20 Ω to 200 Ω]	8.98 μΩ/Ω		
184	A	T		(200 Ω to 2 kΩ]	9.29 μΩ/Ω		
185	A	T		(2 kΩ to 20 kΩ]	9.22 μΩ/Ω		
186	A	T		(20 kΩ to 200 kΩ]	9.41 μΩ/Ω		
187	A	T		(200 kΩ to 2 MΩ]	11.5 μΩ/Ω		
188	A	T	(2 MΩ to 20 MΩ]	313 μΩ/Ω			
189	A	T	(20 MΩ to 200 MΩ]	6.9 mΩ/Ω			
190	A	T	(200 MΩ to 2 GΩ]	0.18%			



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF						כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
191	A	T			(2 GΩ to 100 GΩ]	0.18%		
192	A	P	DC Resistance, Measuring Instruments	התנגדות זרם ישר, מכשירי מדידה	0 Ω	3.6 μΩ	MetCal	FLUKE 5730A
193	A	P			1 Ω	4.3 μΩ/Ω	Automated Calibration Software	
194	A	P			1.9 Ω	4.3 μΩ/Ω	Manufacturer instructions	
195	A	P			10 Ω	4.4 μΩ/Ω	WI-C100	
196	A	P			19 Ω	4.4 μΩ/Ω	WI-C101	
197	A	P			100 Ω	4.2 μΩ/Ω		
198	A	P			190 Ω	4.2 μΩ/Ω		
199	A	P			1 kΩ	5.4 μΩ/Ω		
200	A	P			1.9 kΩ	5.4 μΩ/Ω		
201	A	P			10 kΩ	4.4 μΩ/Ω		
202	A	P			19 kΩ	4.4 μΩ/Ω		
203	A	P			100 kΩ	3.7 μΩ/Ω		
204	A	P			190 kΩ	3.7 μΩ/Ω		
205	A	P	1 MΩ	9.1 μΩ/Ω				
206	A	P	1.9 MΩ	9.1 μΩ/Ω				
207	A	P	10 MΩ	20 μΩ/Ω				
208	A	P	19 MΩ	20 μΩ/Ω				
209	A	P	100 MΩ	150 μΩ/Ω				
210	A	P;T			0 Ω	3.6 μΩ	MetCal	Fluke5522A
211	A	P;T			(1 μΩ to 10 Ω]	21 μΩ/Ω	Automated Calibration Software	Fluke5520A
212	A	P;T			(10 Ω to 100 Ω]	9 μΩ/Ω	Manufacturer instructions	Fluke5730A
213	A	P;T			(100 Ω to 10 kΩ]	20 μΩ/Ω	WI-C100	
214	A	P;T			(10 kΩ to 100 kΩ]	8 μΩ/Ω		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks	
Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך			
215	A	P;T		(100 kΩ to 1 MΩ)	6 μΩ/Ω	WI-C101		
216	A	P;T		(1 MΩ to 10 MΩ)	30 μΩ/Ω			
217	A	P;T		(10 MΩ to 100 MΩ)	199 μΩ/Ω			
218	A	P;T		(100 MΩ to 1 GΩ)	517 μΩ/Ω			
219	A	P;T		(10 GΩ to 100 GΩ)	8.4 mΩ/Ω			
220	A	P;T	Air Standard Resistors	נגדי אוויר סטנדרטיים	1 Ω	4.5 μΩ/Ω	Manufacturer instructions	Standard resistors
221	A	P;T		10 Ω	6 μΩ/Ω	WI-C100		
222	A	P;T		100 Ω	6 μΩ/Ω	WI-C101		
223	A	P;T		1 kΩ	6 μΩ/Ω			
224	A	P;T		10 kΩ	1 μΩ/Ω			
225	A	P	Digital Amplifier	מגבר דיגיטלי	[-2.5 mV/V to 2.5 mV/V]	4E-5 mV/V	WI-C100	Test frequency 225 Hz for HBM BN100A Calibration of 350 Ω – bridge standards and related indicating devices with inductive bridge standard Where applicable amplifier/Decade may be calibrated (mV/V) by measuring and dividing input and output voltage directly
226	A	P;T	Capacitance, Measuring Instruments	קיבול מכשירי מדידה	[100 pF to 1.1uF)	0.5 %	MetCal Automated Calibration Software Manufacturer instructions	FLUKE 5520A
227	A	[1.1 μF to 11 μF)			0.34 %	FLUKE 5522A		
228	A	[11 μF to 33 μF)			0.49 %	Standard capacitors		
229	A	[33 μF to 1 mF]			0.54 %	and Decade		
230	A	0.001 μF			0.02 %			



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
231	A	P;T		0.005 μ F	0.024 %	WI-C100	
232	A	P;T		0.01 μ F	0.013 %		
233	A	P;T		0.05 μ F	0.024 %		
234	A	P;T		0.1 μ F	0.013 %		
235	A	P;T	Capacitance, קיבול,	[100 pF to 1 nF)	0.3 %	MetCal	Fluke 8588A
236	A	P;T	Capacitors קבלים	[1 nF to 10 nF)	0.1 %	Automated Calibration Software	LCR Meter Tonghui TH2829A
237	A	P;T		[10 nF to 100 nF)	0.06 %	Manufacturer instructions	
238	A	P;T		[100 nF to 10 μ F)	0.05 %	WI-C100	
239	A	P;T		[10 μ F to 1 mF)	0.07 %		
240	A	P;T		[1 mF to 10 mF)	0.08 %		
241	A	P;T		[10 mF to 100 mF)	0.11 %		
242	A	P	Phase angle, Measurement זווית מופע	(0° to 90°)			
			Phase angle meters מכשירי מדידה	Frequency: [45 Hz to 65 Hz]	0.58°	Manufacturer Instructions	FLUKE 5520AFLUKE 5522A
243		P	מדי זווית מופע	Frequency: [65 Hz to 500 Hz]	0.21°	WI-C108	Electrical test Equipment CALIBRATOR
				Parameters: V: 32 mV to 600 V I: 32 mA to 20 A Alternating V: 10 mV to 5 V When current transducer not allowed			
244	A	P,T	AC Power, Measurement Power Meters הספק מתח חילופין מדי הספק	[1mW to 20 kW] Power factor: [0– 1] Frequency: [45 Hz to 65Hz]	3.5 %	MetCal Automated Calibration Software	Fluke 5520A Fluke 5522A Electrical Test Equipment calibrator
245	A	P,T	Power factor, Measurement Power Meters מקדם הספק מדידה מדי הספק	[0– 1] Power: [1mW to 20 kW] Frequency: [45 Hz to 65Hz]	0.14	Manufacturer instruction WI-C108	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
246	A	P,T	DC Power, Measurement Power Meters הספק מתח ישר מדי הספק	[10 mW to 20 kW]	0.5 %		
247	A	P,T	Defibrillator and Defibrillator analyzer דפיברילטור וכייל דפיברילטורים	[2 J to 700 J]	0.2 J	IEC 60601-2-4 Calibration of Defibrillator Analyzers – NCSL 2015 WI-C108	Agilent 34470A Voltage divider
248	A	P,T	Continuity resistance Resistance, measuring instruments התנגדות רציפות, מכשירי מדידת התנגדות	[0.20 Ω to 20 Ω]	1.5%	MetCal Automated Calibration Software Manufacturer instructions WI-C107	TRANSMILLE 3200 Electrical Test Equipment Calibrator
249	A	P,T		[20 Ω to 200 Ω]	1.2%		
250	A	P,T		[200 Ω to 2 kΩ]	1.2%		
251	A	P,T	Continuity current Current measuring instruments זרם רציפות מכשירי מדידת זרם	(0 mA to 320 mA)	4%		Calibrator HV Probe 80K-40 DMM Electrical safety tester
252	A	P,T	Insulation resistance Resistance, measuring instruments התנגדות של בידוד מכשירי מדידת התנגדות	0.01MΩ to 5.00 MΩ	3.2 %	MetCal Automated Calibration Software Manufacturer instructions WI-C107	TRANSMILLE 3200 Electrical Test Equipment Calibrator Electrical safety tester HV Probe 80K-40
253	A	P,T		5 MΩ to 2 GΩ	3.6 %		
254	A	P,T		2 G Ω to 10 GΩ	5.8 %		
255	A	P,T		10 GΩ to 1 TΩ	5.8 %		
256	A	P,T	Residual current AC Residual Current, Sensing Devices (RCD) זרם חילופין שיורי (RCD) מכשירי חישה	(Up to 5 Sec.) 3.00 mA to 10.00 mA	2 mA/A	MetCal Automated Calibration Software Manufacturer instructions WI-C107	TRANSMILLE 3200 Electrical Test Equipment Calibrator Electrical safety tester HV Probe 80K-40
257	A	P,T		10.1 mA to 100 mA	1.39 mA/A		
258	A	P,T		101 mA to 1 A	7.81 mA/A		
259	A	P,T		1.01 A to 3 A	34.8 mA/A		
260	A	P,T		(< 190 m Sec.) 3 mA to 10mA	6 mA/A		
261	A	P,T		10.1 mA to 100 mA	6.5 mA/A		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
262	A	P,T		101 mA to 1 A	5 mA/A		
263	A	P,T		1.01 A to 3A	5.6 mA/A		
264	A	P,T	Residual current duration	0.05 Ω	0.0075 Ω	MetCal Automated Calibration Software	TRANSMILLE 3200 Electrical Test Equipment Calibrator
265	A	P,T	AC Loop Resistance	0.1 Ω	0.0079 Ω	Manufacturer instructions WI-C107	Electrical safety tester
266	A	P,T	Loop Testing Devices.	0.22 Ω	0.0087 Ω		
267	A	P,T		0.33 Ω	0.0097 Ω		
268	A	P,T		0.5 Ω	0.011 Ω		
269	A	P,T		1 Ω	0.017 Ω		
270	A	P,T		5 Ω	0.067 Ω		
271	A	P,T		10 Ω	0.13 Ω		
272	A	P,T		100 Ω	1.3 Ω		
273	A	P,T		1 k Ω	13 Ω		
274	A	P,T	Auto Loop Resistance AC Auto Loop Resistance. Loop Testing devices.	1 Ω	0.06Ω	MetCal Automated Calibration Software	TRANSMILLE 3200 Electrical Test Equipment Calibrator
275	A	P,T	Earth Bond Resistance	0.05 Ω	0.0049 Ω	Manufacturer instructions WI-C107	Electrical safety tester
276	A	P,T	Bond Resistance	0.1 Ω	0.0053 Ω		
277	A	P,T	PAT (Portable Appliance Tester)	0.22 Ω	0.0059 Ω		
278	A	P,T		0.33 Ω	0.0065 Ω		
279	A	P,T		0.5 Ω	0.0076 Ω		
280	A	P,T		1 Ω	0.010 Ω		
281	A	P,T		5 Ω	0.033 Ω		
282	A	P,T		10 Ω	0.062 Ω		
283	A	P,T		100 Ω	0.582 Ω		
284	A	P,T		1 k Ω	5.77 Ω		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
285	A	P,T	Earth Bond Current	זרם בדיקת חיבור להארקה	100.0 mA	9.3 mA	
286	A	P,T	Bond current, PAT (Portable Appliance Tester)	מכשירי PAT	10.00 A	0.24 A	
287	A	P,T			30.00 A	0.59 A	
288	A	P,T	Insulation Resistance	התנגדות בידוד,	0 MΩ	0.0074 MΩ	
289	A	P,T	Resistance, PAT (Portable Appliance Tester)	מכשירי PAT	0.01 MΩ to 5 MΩ	3 %	
290	A	P,T			5MΩ to 2 GΩ	3.5 %	
291	A	P,T	Leakage Current, PAT (Portable Appliance Tester)	זליגת זרם להארקה	2.000 mA	0.038 mA	MetCal Automated Calibration Software
292	A	P,T		מכשירי PAT	4.700 mA	0.084 mA	
293	A	P,T			7.700 mA	0.136 mA	Manufacturer instructions
294	A	P,T	Flash Voltage PAT (Portable Appliance Tester)	מתח פריצת בידוד מכשירי PAT	Class 1 (1.5 kV) (1 kV to 1.8 kV]		WI-C107
295	A	P,T			1000 V	57 V	WI-C100
296	A	P,T			1500 V	81 V	
					Class 2 (3 kV) (2 kV to 3 kV]		
					3000 V	151 V	
297	A	P,T	Flash Current PAT (Portable Appliance Tester)	זרם פריצת בידוד מכשירי PAT	(1 mA to 3 mA]		
					1.00 mA	0.06 mA	
298	A	P,T	Line Voltage Measurement of line voltage	מתח רשת חשמל, מדידת מתח רשת חשמל	(200 V (rms)) to 260 V(rms)]	1.2 %	
299	A	P,T	Breakdown/Hipot Measurement & source of high voltage – AC voltage	מדידי ומחוללי מתח גבוה – מתח חילופין	(0.1 kV to 5 kV] @ 50/60 Hz	0.3 % O.R	IEC 60060-2 Manufacturer instructions WI-C107
							HV Probe 80K-40 DMM TRANSMILLE 3200 HI-POT VITREK 4700 Including HV probe



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF					כיול – גדלים חשמליים - זרם ישר ותדר נמוך		
300	A	T		(5 kV to 35 kV] @ 50/60 Hz	0.3 % O.R		The voltage source will be provided by the customer
301	A	P,T	Measurement of current at high voltage מדידת זרם במתח גבוה	1 kV AC @ 50 Hz	200 μA	1.7 μA	Manufacturer instructions WI-C107 HV Probe 80K-40 DMM TRANSMILLE 3200
302	A	P,T			2.00 mA	0.04 mA	
303	A	P,T			20.00 mA	0.16 mA	
304	A	P,T		1 kV DC	200 μA	1.7 μA	
305	A	P,T			2.00 mA	0.04 mA	
306	A	P,T			20.00 mA	0.16 mA	
307	A	P,T		Breakdown/Hipot Measurement & source of high voltage – DC voltage מדידי ומחוללי מתח גבוה – מתח ישר	(0.1 kV to 35 kV]	0.1 % O.R.	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - RF Frequency, Time					כיוול – גדלים חשמליים - תדר גבוה, זמן		
308	A	P	Frequency, Sources תדר, מחוללי תדר	[0.037 Hz to 10 MHz]	10^{-11} (24 h)	MetCal WI-C102 WI-C105 WI-C106	FLUKE 910R Wavetek 9500 H.P.5248 M H.P. 53132 A Via GPS System With Ref. Locked to 910R
309	A	P		(10 MHz to 3.2 GHz]	5×10^{-9} (0.3 h)	MetCal WI-C102 WI-C105 WI-C106	FLUKE 910R Wavetek 9500 H.P.5248 M H.P. 53132 A Via GPS System With Ref. Locked to 910R (with 9500 + 9530)
310	A	T		[0.037 Hz to 3.2 GHz]	4.8×10^{-5} (0.3 h)	MetCal WI-C102 WI-C105 WI-C106	Wavetek 9500 H.P.5248 M H.P. 53132 A With Internal Reference
311	A	P	Frequency. Counters תדר, מוני תדר	[0.1 Hz to 100 MHz]	4.8×10^{-9} (0.3 h)	WI-C102	With Ref. Locked to 910R
312	A	P		[100 MHz to 3 GHz]	4.8×10^{-10} (0.3 h)	WI-C105 WI-C106	With Ref. Locked to 910R (with 9500 + 9530)
313	A	T		[0.1 Hz to 3 GHz]	1.4×10^{-5} (0.3 h)		With Internal Reference
314	A	P;T	Timers, stopwatches שעוני עצר, מוני זמן	[1 sec to 24 hr]	0.06 sec	Manufacturer instructions WI-C070	מיתוג ידני Casio HS-70W
315	A	T		[1 sec to 24 hr]	0.04 sec		שיטת צילום Casio HS-70W
316	A	P;T		[1 sec to 24 hr]	0.001 sec		שיטת צילום H.P.5248 M H.P.52132 A



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - RF Frequency, Time					כיוול – גדלים חשמליים - תדר גבוה, זמן		
317	A	P;T	Oscilloscope Time markers function: Square wave, Pulse, Narrow Triangle	ציר אופקי במשקף תנודות [0.45 ns to 55 sec]	0.038 μs/s	Software MetCal Software WI-C102	Wavetek 9500 Fluke 910R External reference input in the range 1 MHz to 20 MHz
318	A	P;T	Oscilloscope Amplitude Square Wave	ציר אנכי במשקף תנודות Input impedance 1 MΩ Peak to peak amplitude (40 μV to 1 mV] (1 mV to 200 V]	10 mV/V + 10 μV	MetCal Software WI-C102 WI-C105 WI-C106	Wavetek 9500 Fluke 910R External reference input in the range 1 MHz to 20 MHz
319	A	P;T			1 mV/V + 10 μV		
320	A	P;T	Oscilloscope Amplitude Square Wave	ציר אנכי במשקף תנודות Input impedance 50 Ω Peak to peak amplitude (40 μV to 1 mV pk-pk] (1 mV to 5 V pk-pk]	10 mV/V + 10 μV	MetCal Software WI-C102 WI-C105 WI-C106	Wavetek 9500
321	A	P;T			1 mV/V + 10 μV		
322	A	P;T	Oscilloscope Rise Time	זמן עליית האות של משקף תנודות Rise time, From 150 ps]	14 ps	MetCal Software WI-C102 WI-C105 WI-C106	Wavetek 9500
323	A	P;T	Oscilloscope Bandwidth:	רוחב סרט של משקף תנודות [0.1 Hz to 300 MHz]	0.23 db	MetCal Software WI-C102	Wavetek 9500
324	A	P;T		[300 MHz to 550 MHz]	0.23 db	WI-C105	
325	A	P;T		[550 MHz to 1.1GHz]	0.29 db	WI-C106	
326	A	P;T		[1.1 GHz to 3.2 GHz]	0.36 db		
327	A	P;T	Oscilloscope Flatness	מישוריית האות כתלות בתדר ביחס לתדר הייחוס [0.1 Hz to 300 MHz]	2.3 %	MetCal Software WI-C102	Wavetek 9500 Leveled Sine Wave Amplitude
328	A	P;T		(300 MHz to 550 MHz]	3.8 %		



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - RF Frequency, Time						כיוול – גדלים חשמליים - תדר גבוה, זמן		
329	A	P;T			(550 MHz to 1.1 GHz]	4.9 %	WI-C105	50 kHz Ref
330	A	P;T			(1.1 GHz to 3.2 GHz]	6.0 %	WI-C106	
331	A	P;T	Oscilloscope Input Capacitance	קיבול כניסה של משקף תנודות	[1 pF to 65 pF]	7 mF/F	MetCal Software WI-C102 WI-C100	Wavetek 9500 Input impedance 50 Ω



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks	
Calibration – Mechanical Quantities - Form, Angle					כיוול – גדלים מכניים - צורה, זווית			
332	A	P	Flank Angle Screw Plug Gauges (parallel) including check and setting Plug	זווית השן מדיד הברגה זכר מקביל	Plug Diameter [1 mm to 305 mm]	0.3°	A-A-59158 WI-C020	M is projector magnification and P is pitch in mm
333	A	P	Flank angle Screw Plug Gauges (taper)	זווית השן מדיד הברגה זכר קוני	Plug Diameter [1 mm to 305 mm]	0.3°	A-A-59158 WI-C020	M is projector magnification and P is pitch in mm
334	A	P	Flatness of Optical Flats in diameter of 10 mm – 50 mm	מישוריות של משטחים אופטיים בעלי קוטר 10 – 50 mm	Above 0.05 μm	0.1 μm	JIS B 7430 JIS B 7431 WI-C009	Optical flat/parallel מערכת כיוול מקבילונים ועדשה מישורית The uncertainty quoted is for the departure from flatness of parallelism, i.e. the distance separating the two parallel planes, which just enclose by
335	A	P	Parallelism of Optical Parallels in diameter of 10 mm – 50 mm	מקבילות של משטחים אופטיים בעלי קוטר 10 – 50 mm	Above 0.01 μm	0.1 μm		The uncertainty quoted is for the departure from flatness of parallelism, i.e. the distance separating the two parallel planes, which just enclose by



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Form, Angle					כיול – גדלים מכניים - צורה, זווית		
336	A	P;T	Flatness of Granites or Cast iron surfaces in Grade 00 מישוריות של לוחות משטח גרניט וברזל יציקה ברמה 00	Above 0.1 μm	[1.5+0.8* length] μm	DIN 876 P1,2 ISO 8512 P1,2 GGG-P-463-C BS 817 WI-C038 WI-C060 WI-C053	עד 0.09 m ² נבדק באמצעות גשש אורך. מעל 0.09 m ² נבדק במערכת פלסים אלקטרוניים. The uncertainty quoted is for the departure from flatness, straightness, parallelism, or squareness i.e. the distance separating the two parallel planes which, just enclose the surface under consideration (Length in m)
337	A	P	Straightness, flatness and parallelism of Granite, Cast iron and Steel straightedges in Grade 00 ישרות, מישוריות, מקבילות של סרגל ישרות מתכת או גרניט ברמה 00	Above 1 μm	4.3 μm	DIN 874 P.1 WI-C066	גששי אורך
338	A	P	Straightness Knife edge, straight edge סרגל שיערה	Up to 500 mm]	1.5 μm	DIN 874 P.2 WI-C015	מקור אור מונוכרומטי, גששי אורך
339	A	P	Flatness, Parallels מקבילים, מישוריות	Up to 50*100*400 mm]	2 μm	DIN 6346 DIN 876 WI-C048	גששי אורך
340	A	P	Parallelism, Parallels מקבילים, מקבילות	Up to 50*100*400 mm]	2 μm	WI-C052	
341	A	P	Perpendicularity, Square, blade type ניצבות, זוויתנים	Up to 300 mm]	3 μm	DIN-875-1DIN 875-2 JIS B 7526 WI-C016	גששי אורך מד ניצבות
342	A	P		(300 mm to 600 mm]	5 μm		
343	A	P	Parallelism Square, blade type מקבילות, זוויתנים	Up to 300 mm]	3 μm		גששי אורך
344	A	P		(300 mm to 600 mm]	5 μm		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Form, Angle					כיוול – גדלים מכניים - צורה, זווית		
345	A	P	Flatness, Square, blade type	Up to 300 mm]	3 μm		
346	A	P		(300 mm to 600 mm]	5 μm		
347	A	P	Perpendicularity, Cylinder	Up to 600 mm]	2 μm	JIS B 7539	
348	A	P	Perpendicularity, Universal Box Angles	Up to 100 mm]	3 μm	DIN 875-1	
349	A	P		(100 mm to 300 mm]	5 μm	DIN 875-2DIN 876	
350	A	P		(300 mm to 600 mm]	8 μm		
351	A	P	Flatness, Universal Box Angles	Up to 100 mm]	3 μm	DIN 875-1	
352	A	P		(100 mm to 300 mm]	5 μm	DIN 875-2DIN 876	
353	A	P		(300 mm to 600 mm]	8 μm		
354	A	P	Parallelism Universal Box Angles	Up to 100 mm]	3 μm	DIN 875-1	
355	A	P		(100 mm to 300 mm]	5 μm	DIN 875-2	
356	A	P		(300 mm to 600 mm]	8 μm	DIN 876	
357	A	P	Squareness Right angle and box angle plate	Up to 600 mm]	[3 + 1 per 100 mm] μm	DIN 875-1 DIN 875-2 DIN 876 BS 5535 WI-C050	מד ניצבות
358	A	P	Parallelism Right angle and box angle plate	Up to 600 mm]	[1 + (1 per 100 mm)] μm	WI-C050	מד ניצבות
359	A	P	Perpendicularity Square master	600 mm	2.1 μm	נתוני יצרן WI-C018	השוואה למדיד אב לניצבות



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Form, Angle					כיוול – גדלים מכניים - צורה, זווית		
360	A	P	Perpendicularity Vee blocks	פריזמות ניצבות Up to 150 mm]	2.1 μm	BS 3731 JIS B 7540	Grade 00 גששי אורך גלייים
361	A	P	Flatness, Vee blocks	פריזמות מישוריות Up to 150 mm]	2.1 μm	DIN 2274 WI-C021	
362	A	P	Parallelism Vee blocks	פריזמות מקבילות Up to 150 mm]	2.1 μm		
363	A	P	Angle Sines bars and tables Clinometers calibration system	זווית סרגלים ושולחנות סינוס מערכת לכיוול קלינומטרים Up to 500 mm]	2 "	BS 3064 GGG-B 121b DIN 2273 WI-C025	Angle is estimated by measuring distance מקבילונים בלוק זוויתי
364	A	P	Angle Level	פלט ± 5 °	0.5 "	DIN 887 BS 958 WI-C022	מייצר זווית קטנות
365	A	P	Angle Clinometer	קלינומטר Up to 90 °]	10 "	DIN 887 BS 958 DIN 2274 DIN 2276-1,2 WI-C022	מייצר זווית קטנות שולחן סובב
366	A	P	Angle Bevel protractor	מד זווית מתכוונן up to 360 °	3 ´	BS 1685WI-C017	בלוק זוויתי גששי אורך מד ניצבות
367	A	P;T	Rotational Speed Mechanical tachometer	מהירות סיבוב (סל"ד) מד סל"ד מכני [1 to 8000] RPM	0.01 %OR or 0.01 RPM Whichever is greater	Manufacturer instructions WI-C069	Counter מונה
368	A	P;T	Rotational Speed Optical tachometer	מהירות סיבוב (סל"ד) מד סל"ד אופטי [1 to 2500] RPM	0.01 % OR or 1 resolution Whichever is greater		Function generator מחולל אותות
369	A	P;T	Rotational Speed Optical tachometer	מהירות סיבוב (סל"ד) מד סל"ד אופטי [2500 to 99999] RPM	0.005 %O.R.		Function generator מחולל אותות



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Form, Angle					כיוול – גדלים מכניים - צורה, זווית		
370	A	P	Distance/rotation counter encoder מונה מטרים ומונה סיבובים אנקודר	up to 360 °]	0.23 ° / number of turns Or 1 Resolution whichever is greater	WI-C069	Uncertainty of meter counter is calculated from wheel diameter and encoder precision אי ודאות למונה מטרים מחושבת מקוטר גלגל ודייק אנקודר
371	A	P;T	Radius gauge מד רדיוס עלים	[0.1mm to 100 mm]	0.03 % O.R. + 17 μm	Manufacturer instructions WI-C030	
372	A	P;T	Angle measurement מדידת זווית	[0 ° to 90 °]	0.12 °	Customer requirements WI-C081	
373	A	P;T		(90 ° to 180 °]	0.15 °		
374	A	P;T		(180 ° to 270 °]	0.19 °		
375	A	P;T		(270 ° to 360 °]	0.23 °		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks	
Calibration – Mechanical Quantities - Hardness Meters					כיוול – גדלים מכניים - מדי קושיות			
376	A	P;T	Rockwell hardness testing machine	מכשירים למדידת קשיות בשיטת רוקוול	HRA [20 to 95]	ASTM E18 ISO 6508-2 WI-C058	Indirect verification השוואה לחומר יחוס סטנדרטי	
377	A	P;T			HRBW [10 to 100]			0.45 HRA 1.0 HRBW
378	A	P;T			HRC [10 to 70]			0.45 HRC
379	A	P;T			HRFW [69 to 97]			0.4 HRFW
380	A	P;T			HREW [70 to 100]			0.7 HREW
381	A	P;T			HR15N [70 to 94]			0.5 HR15N
382	A	P;T			HR30N [42 to 86]			0.6 HR30N
383	A	P;T			HR45N [20 to 77]			0.5 HR45N
384	A	P;T			HR15TW [67 to 93]			0.7 HR15TW
385	A	P;T			HR30TW [29 to 82]			0.7 HR30TW
386	A	P;T			HR45TW [10 to 72]			1.0 HR45TW
387	A	P;T			Brinell hardness testing machine			מכשירים למדידת קשיות בשיטת ברינל
388	A	P;T	HBW 2.5 / 62.5	2% HBW				
389	A	P;T	HBW 2.5 / 31.25	2% HBW				
390	A	P;T	Vickers hardness testing machine	מכשירים למדידת קשיות בשיטת וויקס	(0.1 to 0.5) HV	ASTM E384 ASTM E92 ISO 6507-2 WI-C058	Indirect verification השוואה לחומר יחוס סטנדרטי	
391	A	P;T			(1 to 100) HV			1.5% HV 1.2% HV



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Hardness Meters						כיוול – גדלים מכניים - מדי קושיות		
392	A	P	(Shore durometer) – All types	מכשירים למדידת קשיות פלסטיק וגומי - כל הסוגים	0 Shore	0.1 Shore	ASTM D2240 ISO 21509 ISO 48-9 WI-C057	Any type of rubber/plastic durometer such as Shore/IRHD, VLRH etc. Direct verification כיוול כח קפיץ ביחידות Shore Durocalibrator Balance / Load cell Shore/IRHD/VLRH hardness testing equipment. Tested by Shore/IRHD/VLRH units according to device. בדיקת פרמטרים גיאומטריים של החודרן Profile projector Microscope Indenters with parameters out of the nominal range may be calibrated at stated uncertainties as well
393	A	P			(0 to 100) Shore	0.4 Shore		
394	A	P			100 Shore	0.1 Shore		
Geometrical parameters								
395	A	P	Indenter extension	אורך החודרן	[0.1 to 5] mm	0.01 mm		
396	A	P	Indenter diameter	קוטר החודרן	[0.7 to 12] mm	0.01 mm		
397	A	P	Indenter angle	זווית החודרן	[29° to 36°]	0.05°		
398	A	P	Indenter Horn diameter/radius	קוטר/רדיוס חוד החודרן	[0.1 –11] mm	0.008 mm		
399	A	P	Presser foot Hole diameter	קוטר קדח הבסיס	[0.9 – 13] mm	0.01 mm		
400	A	P	Presser foot diameter Calculated effective diameter for rectangular base	קוטר בסיס לחיצה קוטר אפקטיבי מחושב לבסיס מלבני	up to 100] mm	0.03 mm		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks		
Calibration – Mechanical Quantities - Length					כיול – גדלים מכניים - אורך				
401	A	P	Gauge Blocks Comparator	מערכת כיול מקבילונים	Up to 100 mm	0.05µm	Euramet cg-2 WI-C042	Gauge blocks	
402	A	P	Length, Gauge Blocks (by Comparison)	אורך, מקבילונים	Class (see note)		DIN EN ISO 3650 BS 4311 WI-C019	קומפרטור מקבילונים Class C uncertainties apply to the measurement of length of steel gauges by comparison with grade K standards of length of a similar material. Class C uncertainties apply to new grade 0, 1 and 2 gauges to the aforementioned standard and represent the best capability for all grades of used gauges to the aforementioned standard. Class D Class D uncertainties represent the best capability for the measurement of length of tungsten carbide and ceramic gauges by comparison with grade K standards of length of a dissimilar material	
403	A	P			Up to 10 mm }	0.08 µm			0.10 µm
404	A	P			(10 mm to 25 mm]	0.10 µm			0.13 µm
405	A	P			Sizes: 30, 40, 50	0.12 µm			0.17 µm
406	A	P			Sizes : 60, 70, 75	0.15 µm			0.21 µm
407	A	P			Sizes : 80, 90, 100	0.18 µm			0.25 µm
408	A	P			Up to 0.4 in }	3 µin			4 µin
409	A	P			(0.4 to 1 in]	4 µin			5 µin
410	A	P			2 in	5 µin			7 µin
411	A	P			3 in	6 µin			8 µin
412	A	P	4 in	7 µin	10 µin				
413	A	P	Length Gauge Block accessories	אורך, אביזרים מקבילונים	160 mm	2 µm	JIS B7506WI-C029	מכונת מדידה SIP / TRIMOS 305M	
414	A	P	Length, Length Bars	אורך, מוטות אורך מדיד	Up to 1000 mm]	[0.1 + 2×length in m] µm	BS 5317 DIN EN ISO 3650 ASME B.89.1.13 WI-C008	מוטות תקינים (מקבילונים או מוטות אורך ומקבילים) Length bar Length in m Check master – step gauge	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Length					כיוול – גדלים מכניים - אורך		
415	A	P	Length, Length Gauges	אורך, מדידי אורך Up to 1000 mm]	$[0.1 + 2.5 \times \text{length in m}] \mu\text{m}$	DIN EN ISO 3650 ASME B89.1.13	מוטות לא תקינים (ייצור עצמי), מוטות לכיוול זחונים, קצה מעוגל (כדי) Length bar Length in m
416	A	P	Length, Step Gauge	אורך, מקבילונים מדורגים Up to 1000 mm]	$[0.1 + 2.5 \times \text{length in m}] \mu\text{m}$	נתוני יצרן WI-C019	Length bar Length in m Check master – step gauge
417	A	P,T	Length Measuring Machine	מכונת מדידת אורך Up to 500 mm	$[0.1 + 2.5 \times \text{length in m}] \mu\text{m}$	Manufacturer Instructions WI-C076	Length bar Length in m
418	A	P,T	Length, Plain Plug Gauges	אורך, מדידי תקע חלק Up to 25.4] mm	1 μm	ISO 286-1 ISO 286-2 DIN EN ISO 1938-1 DIN EN ISO 1938-2 DIN 7163 DIN 7164 H28/SEC.6 DIN 2269 WI-C013	מכונת מדידה SIP / TRIMOS 305M מיקרומטר שולחני
419	A	P		(25.4 mm to 100] mm	1.5 μm		
420	A	P	Diameter Plain Rings	טבעות חלקות [1.75 mm to 100 mm]	0.4 μm	DIN 2250-1 DIN 7151-2 WI-C023	מכונת מדידה SIP / TRIMOS 305M calibration by comparison to standard plain ring provides lower uncertainties
421	A	P		(100 mm to 150 mm]	1.5 μm		
422	A	P		(150 mm to 220 mm]	2 μm		
423	A	P	Diameter Thread Measuring Cylinders	תיילים לבדיקת מדיד הברגה [0.1 mm to 6 mm]	0.7 μm	H28/SEC.22A ASME B1.22 M WI-C055	מכונת מדידה SIP / TRIMOS 305M



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Length					כיוול – גדלים מכניים - אורך		
424	A	P	Pitch Diameter Screw Plug Gauges (parallel) including check and setting Plug	מדיד הברגה זכר – מקביל	Plug Diameter Up to 100 mm]	3 μm	כיוול זווית השן מדיד הברגה זכר מקביל – ראה בטכנולוגיה כיוול – גדלים מכניים – צורה, זווית
425	A	P		(100 mm to 305 mm]	5 μm		
426	A	P	Pitch Screw Plug Gauges (parallel) including check and setting Plug	פסיעת התבריג מדיד הברגה זכר מקביל	Plug Diameter Up to 305 mm]	1.5 μm	
427	A	P	Pitch Diameter Screw Plug Gauges (taper)	מדיד הברגה זכר - קוני	Plug Diameter Up to 100 mm]	3 μm	כיוול זווית השן מדיד הברגה זכר קוני – ראה בטכנולוגיה כיוול – גדלים מכניים – צורה, זווית
428	A	P		(100 mm to 305 mm]	5 μm		
429	A	P	Pitch Screw Plug Gauges (taper)	פסיעת התבריג מדיד הברגה זכר קוני	Plug Diameter Up to 305 mm]	1.5 μm	
430	A	P	Pitch Diameter Thread rings (parallel)	טבעות הברגה – מקבילה	Ring diameter [1.2 mm to 3 mm]	Not relevant	Go no go test by means of check plug
431	A	P		(3 mm to 100 mm]	4 μm		מכונת מדידה SIP / TRIMOS 305M



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Length						כיול – גדלים מכניים - אורך		
432	A	P			(100 mm to 305 mm)	5 μm	ISO 2903/2904 BS 919/1,23 ISO 7-2BS 84 BS 4377/2 BS EN 10226-1 DIN 477 DIN 103/9 DIN 405-1 DIN 405-2 DIN 405-3 DIN EN 10226-3 B.N.A.e WI-C024	
433	A	P	Standard sphere	כדור מדויק	(2 mm to 100 mm)	1 μm	WI-C091	מכונת מדידה
434	A	P	Micrometer External	מיקרומטר חיצוני	Up to 2000 mm]	[1.2 + 5×length in m] μm	ISO 3611 DIN 863 ASME B89.1.13 JIS B 7502 WI-C006	מקבילונים מוטות אורך
435	A	T			Up to 600 mm]	[1.2 + 5×length in m] μm		
436	A	P,T	Micrometer Internal	מיקרומטר פנים	Up to 300 mm] extension rod to 1000 mm]	[1.2 + 5×length in m] μm	DIN 863 ASME B89.1.13 WI-C026 WI-C027	טבעות חלקות מכונת מדידה
437	A	P;T	Micrometer Depth	מיקרומטר עומק	Up to 350 mm]	[1.2 + 5×length in m] μm	DIN 863 ASME B89.1.13 WI-C007 JIS B 7544	מקבילונים
438	A	P	Micrometers (indicating digital and electronic)	מיקרומטר (כולל דיגיטלי)	Up to 2000 mm]	[1.2 + 5×length in m] μm	ISO 3611 DIN 863	מקבילונים מוטות אורך



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Length						כיול – גדלים מכניים - אורך		
439	A	T			Up to 600 mm]	[1.2 + 5×length in m] μm	ASME B89.1.13 JIS B 7502 WI-C006	
440	A	P	Three point Internal and bore micrometer	מיקרומטר פנים תלת נקודתי	[2 mm to 50 mm]	2 μm	DIN 863 Manufacturer Instructions WI-C012	טבעות חלקות
441	A	P			(50 mm to 250 mm)	5 μm		
442	A	P	Micrometer head	ראש מיקרומטר	Up to 50 mm]	2 μm	Manufacturer;s instructions WI-C006	
443	A	P	Height setting micrometer	מד גובה מיקרומטרי	Up to 315 mm]	Total length [0.1 + 2×length in m] μm Movement 2.5 μm	ISO 7863 WI-C014	מקבילונים, מוטות אורך
444	A	P	Riser Block	בסיס הגבהה למד גובה מיקרומטרי	Up to 150 mm]	2.5 μm	WI-C005	
445	A	P			(150 to 300 mm)	5 μm		
446	A	P;T	Vernier Caliper, depth Gauges	זחון ורנייר	Up to 2000 mm]	Overall performance [10 + 30× length in m] μm	DIN EN ISO 13385-1 DIN EN ISO 13385-2 ASME B89.1.14JIS B 7507 WI-C001	מקבילונים, מוטות אורך, בודק זחונים
447	A	P;T	Caliper (digital and electronic)	זחון אלקטרוני ודיגיטלי	Up to 2000 mm]	Overall performance [10 + 30× length in m] μm	DIN EN ISO 13385-1 DIN EN ISO 13385-2 ASME B89.1.14 JIS B 7507 WI-C001	מקבילונים, מוטות אורך, בודק זחונים
448	A	P	Micrometer Heads Dial testers	מערכת כיול חוגנים	Up to 100 mm	0.2 μm	WI-C028	Gauge blocks
449	A	P;T	Height Gauge Electronic microprocessor Controlled height Gauge	מד גובה	Up to 1000 mm]	[1 + 5× length in m] μm	ISO 13225 JIS B 7517 WI-C005	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Length					כיוול – גדלים מכניים - אורך		
450	A	P;T	Dial Indicator Length gauge	Up to 3 mm]	0.3 μm	DIN 878 DIN 879	בודק חוגנים מכונת מדידה
451	A	P;T		(3-60] mm	1 μm	JIS B 7503 JIS B 7509	
452	A	P;T		(60-100] mm	1.5 μm	JIS B 7536	
453	A	P;T		(100-300] mm	4 μm	ANSI B89.1.10M NF E 11-056 ISO 13102 ISO 463 WI-C003 WI-C027 WI-C033 WI-C036 WI-C053	
454	A	P;T		Lever type dial indicator Lever type gauge	Up to 3 mm]	0.3 μm	
455	A	P;T	Thickness gauge	Up to 50 mm	2 μm	Manufacturer Instructions WI-C037	מקבילוני אורך Gauge blocks
456	A	P;T	Dial caliper gage (external type)	Up to 150 mm	10 μm	Manufacturer Instructions WI-C037	מקבילוני אורך Gauge blocks



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Length					כיוול – גדלים מכניים - אורך		
457	A	P;T	Dial caliper gage (internal type) מד חריצים	Up to 125 mm	10 μm	Manufacturer Instructions WI-C035	מיקרומטר, מקבילוני אורך Micrometer, Gauge blocks
458	A	P;T	Elcometer מד עובי ציפוי	[22 μm to 2000 μm]	2 μm	Manufacturer Instructions WI-C049	
459	A	P	Feeler/Thread Gauge מד מרווח/מסרק עלים	Up to 1 mm]	4 μm	WI-C032 WI-C054	מיקרומטר
460	A	P;T	Measuring microscope מיקרוסקופ מדידה	Up to 500 mm	[2 + (25/M)] μm	JIS B 7153 WI-C034	סרגל אופטי M is total magnification נתוני יצרן
461	A	P;T	Profile projectors מטול פרופילים	Up to 500 mm	[2 + (25/M)] μm	JIS B 7184 WI-C034	סרגל אופטי M is total magnification נתוני יצרן
462	A	P	Bore comparators (bore gauge) מד קדח גשר	[6 mm to 150 mm]	2 μm	JIS B 7515 CID A-A-58070 WI-C010	בודק חוגנים טבעות חלקות מיקרומטר
463	A	P	Bore comparators Cylinder gauge פין מפציל	[1 mm to 50 mm]	2 μm	CID A-A-58070 WI-C011	נתוני יצרן
464	A	P	Optical scale סרגל אופטי	Up to 1 mm]	0.5 μm	JIS B 7541 Manufacturer	מכונת מדידה TRIMOS/ SIP 305M
465	A	P		(1 mm – 300 mm)	1 μm	Instructions WI-C039	
466	A	P	Tape and ruler measuring system כיוול סרגלי וסרטי מדידה	Up to 1000 mm]	8 μm	Manufacturer Instructions	סרגל אופטי
467	A	P		(1000 mm – 2000 mm]	15 μm	WI-C085	מוטות אורך

Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Length					כיול – גדלים מכניים - אורך		
468	A	P	Measuring rule סרגל מדידה	Up to 2000] mm	42 μm	DIN 866 JIS-B 7516 Manufacturer Instructions WI-C078	מיקרוסקופ מדידה כייל סרגלי וסרטי מדידה Measuring microscope Scale and Tape Calibration Unit.
469	A	P	Measuring tape סרט מדידה	Up to 50] m	42·√(n/2) μm	OIML-R-35 BS 4484-1 DIN 866 JIS B 7516 Manufacturer Instructions WI-C043 WI-C064 WI-C078	כייל סרגלי וסרטי מדידה Scale and Tape Calibration Unit. (n/2) rounded up to integer n in meters
470	A	P;T	Length Length meter אורך מד אורך	[1 to 1000] m	0.01 m or 0.2 % OR Whichever is greater	WI-C069	Mechanical tachometer (Mode “m”) מונה מטרים
471	A	P;T	Surface Speed Surface Speed meter מהירות פני השטח מד מהירות פני השטח	[2 to 500] m/min	0.1 m/min or 0.2 % or Whichever is greater	WI-C069	Mechanical tachometer (Mode “m/min”) מד מהירות
472	A	P;T	Velocity in extensometer machine מהירות במכונת התארכות	[0.01 mm/min to 5000 mm/min]	0.1 % O.R.	Manufacturer Instructions WI-C075	
473	A	P	Test sieves נפות	Nominal aperture size : Up to 0.2 mm]	0.003 mm	ASTM E11 ISO 3310-1,2 ASTM E323 WI-C071	מטול פרופילים, זחון Profile projector, caliper.
474	A	P		(0.2 mm to 1 mm]	0.005 mm		
475	A	P		(1 mm to 5 mm]	0.010 mm		
476	A	P		(5 mm to 15 mm]	0.020 mm		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities - Length					כיול – גדלים מכניים - אורך		
477	A	P		(15 mm to 30 mm]	0.050 mm		
478	A	P		(Above 30 mm	0.10 mm		
479	A	P:T	Extensometer מד התארכות	[0.01 mm to 50 mm]	0.004 mm	ASTM E83 BS ISO 5893 +A1 ISO 9513 ISO 5893 WI-C075	Extensometer calibrator
480	A	P:T	Extensometer (displacement) מד התארכות	[0.01 mm to 1000 mm]	0.006 mm	Manufacturer Instructions WI-C075	High precision dial gauge, Length gauge
481	A	P:T	Length measurements מדידת אורך	Up to 125 mm]	0.003 mm	Customer requirements WI-C081	
482	A	P:T		(125 mm to 200 mm]	0.005 mm		
483	A	P:T		(200 mm to 600 mm]	0.007 mm		
484	A	P:T		(600 mm to 2000 mm]	0.05 mm		
485	A	P:T		(2 m to 10 m]	4.6 mm		
486	A	P:T		(10 m to 30 m]	6.8 mm		
487	A	P:T	Laser distance meter מד טווח לייזר	Up to 50 mm	5 μm	ISO 16331-1 Manufacturer Instructions WI-C083	
488	A	P		(0.05 m to 0.5 m]	5 μm		
489	A	P		(0.5 m to 10 m]	0.74 mm		
490	A	P		(2 m to 10 m]	2 mm		
491	A	P		(10 m to 30 m]	2.5 mm		



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Optics						כיוול – גדלים פיזיקליים - אופטיקה		
492	A	P,T	Optical emitting devices and Meters	מכשיר פולט קרינה אופטית ומד קרינה אופטית	Power הספק 3 nW to 3 mW at 270 to 1650 nm and 15 μW to 150 W at 193 nm to 10600 nm	3.5% of Reading	NADCAP AC7114/2 In house procedure Based on: IEC 60825 ISO 13694 WI-C203	Irradiance is calculated / measured by dividing power by aperture area
493	A	P,T	Display/controller by optical simulation	צג/בקר בסימולציה אופטית	Power הספק [3 nW to 150 W] at [193 nm to 10600 nm]	0.3% of Reading	In house procedure Based on: IEC 60825 ISO 13694 WI-C203	
494	A	P,T	Light emitting devices and Meters	מכשיר פולט אור ומד קרינה אופטית	Energy אנרגיה 20μJ to 4 KJ at 193 to 10600 nm	5% of Reading	In house procedure Based on: IEC 60825 ISO 13694 WI-C203	
495	A	P,T	Optical emitting devices and Meters	מכשיר פולט קרינה אופטית ומד קרינה אופטית	Frequency & Time תדר וזמן Up to 0.7 MHz Min. Rise/Fall Time 2 nsec	1 nsec	In house procedure Based on: IEC 60825 ISO 13694 WI-C202	
496	A	P,T	Optical Meters, Spectrometer	מד קרינה אופטית, ספקטרומטר	Wavelength אורך גל 35 nm to 3507 nm	2x10 ⁻⁴ nm	In house procedure Based on: IEC 60825 ISO 13694 WI-C200	NIST Atomic Spectra Database The Resolution used to calculate the calibration uncertainty corresponds to the wavelength difference between two adjacent pixels of the UUT
497	A	P,T	Beam profiler	מנתח קרן אחידות	3 nW to 150 W at 193 nm to 10600 nm	0.1 % O.R.	In house procedure Based on: IEC 60825 ISO 13694 WI-C205	
498	A	P,T	Linearity	לינאריות	3 nW to 150 W at 193 nm to 10600 nm	0.8 % O.R.		
499	A	P,T	Spot size	גודל כתם	Up to 300 mm	0.35 % O.R.		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks	
Calibration – Physical Quantities - Optics					כיוול – גדלים פיזיקליים - אופטיקה			
500	A	P,T	Gloss Meter	מד ברק	[0 GU to 500 GU]	0.72 GU + 1 % O.R.	ISO 2813 ASTM D523 WI-C204	20°, 60°, 85°
501	A	P,T			(500 GU to 2200 GU)	20 GU + 0.5 % O.R.		
502	A	P,T	Gloss Tile	אריח ברק	[0 GU to 500 GU]	0.72 GU + 1 % O.R.	ISO 2813 ASTM D523 WI-C204	20°, 60°, 85°
503	A	P,T			(500 GU to 2200 GU)	20 GU + 0.5 % O.R.		
504	A	P,T	Optical emitting devices	מכשיר פולט קרינה אופטית	Wavelength אורך גל 180 nm to 1100 nm	1 nm	In house procedure Based on: IEC 60825 ISO 13694 WI-C200	
505	A	P,T	Light emitting devices and Meters Illuminance	מכשיר פולט אור ומד אור	Visible Light אור נראה 1 lux to 30000 lux	2.6 % Whichever is greater	NADCAP AC7114/2 In house procedure The CIE 1924 photopic V(λ) luminosity function	Calibration can be given in other units as required.
506	A	P,T	Light emitting devices and Meters Luminance	מכשיר פולט אור ומד אור	Visible Light אור נראה 1.85 cd/m ² to 6000 cd/m ²	2.7 % O.R.	WI-C201	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Force, Torque					כיוול – גדלים פיזיקליים - כח, מומנט		
507	A	P,T	Force calibration in tension, force measurement machine	כיוול כח במתיחה, מכונות למדידת כח [0.1 kN to 100 kN]	1.5 N/kN of verification force	ISO 7500-1 ASTM E4 Euramet cg-4	מתמר כח Force load cell Calibration can be given in other units as required. 1 N/kN = 0.1%
508	A	T	Force calibration in tension, material testing machine	כיוול כח במתיחה, מכונות למדידת כח [0.1 kN to 500 kN]	2.0 N/kN of verification force	Manufacturer instructions WI-C056	
509	A	P;T	Force calibration in compression, material testing machine	כיוול כח בלחיצה, מכונות למדידת כח [0.1 kN to 1 MN]	2.0 N/kN of verification force		כולל כיוול מכונות בדיקה לפי דרישות תקן ישראלי 26 חלק 4.1
510	A	P;T	Force calibration in compression, material testing machine	כיוול כח בלחיצה, מכונות למדידת כח (1 MN to 2.3 MN)	2.4 N/kN of verification force		
511	A	P;T	Force calibration in tension and compression, push pull force measurement machine	כיוול כח בלחיצה ומתיחה מכונות למדידת כוח (0.005 N to 1.2 kN)	0.015 %O.R. or 0.6res. whichever is greater		משקולות res - resolution
512	A	P,T	Force calibration in tension, Force gauge Force system	כיוול כח במתיחה, מד כוח מערכת כוח [0.1 kN to 100 kN]	1.5 N/kN of verification force	Euramet cg-4 Manufacturer instructions WI-C056	מתמר כח Force load cell Calibration can be given in other units as required. 1 N/kN = 0.1%
513	A	P;T	Force calibration in compression, Force gauge Force system	כיוול כח בלחיצה, מד כוח מערכת כוח [0.1 kN to 1 MN]	2.0 N/kN of verification force		
514	A	P;T	Force gauge Force system	כיוול כח בלחיצה, מד כוח מערכת כוח (1 MN to 2.3 MN)	2.4 N/kN of verification force		
515	A	P;T	Force calibration in tension and compression using weights, Force gauge Force system	כיוול כח במתיחה ולחיצה באמצעות משקולות, מד כוח מערכת כוח (0.005 N to 1.2 kN)	0.015 %O.R. or 0.6res. whichever is greater		משקולות res - resolution
516	A	P	Force calibration in tension and compression, Proving devices	כיוול כח בלחיצה ומתיחה [0.005 N to 1.2 kN]	0.015 %O.R. or 0.6res. whichever is greater	ISO 376 Euramet cg-4	משקולות, מתמר כח res - resolution
517	A	P	Proving devices	תאי (טבעות) כוח [1 kN to 20 kN]	0.7 N/kN of verification force	WI-C073	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Force, Torque					כיוול – גדלים פיזיקליים - כח, מומנט		
518	A	P	Force calibration in compression, Proving devices	כיוול כח בלחיצה תאי (טבעות) כוח	[20 kN to 1 MN]	1.0 N/kN of verification force	
519	A	P	Force calibration in tension, Proving devices	כיוול כח במתיחה תאי (טבעות) כוח	[1 MN to 2.3 MN]	2.0 N/kN of verification force	
520	A	P	Force calibration in tension, Proving devices	כיוול כח במתיחה תאי (טבעות) כוח	[20 kN to 100 kN]	1.0 N/kN of verification force	
521	A	P,T	Torque Torque wrenches and drivers Electric & pneumatic screwdrivers	מומנט ידיית מומנט, מברגת מומנט מברגות חשמליות / פניאומטיות	[0.01 Nm to 1000 Nm]	0.5 % OR ISO 6789-1 ISO 6789-2 BS 7882 Euramet cg-14	מתמרי מומנט קורות כיוול ומשקולות Calibration can be given in other units as required OR – Of Reading
522	A	P	Torque	מומנט	[0.001 Nm to 0.01 Nm]	0.25 % OR	Indicated torque Evaluation of the type B uncertainty of the torque tool is based on data acquired from the tool manufacturer or estimated by QCC based on experience of similar equipment.
523	A	P	Mechanical and Electronic torque calibration equipment	מכשירים למדידת מומנט (מכאניים ואלקטרוניים)	[0.01 Nm to 1000 Nm]	0.1 % OR	
524	A	T	Torque	מומנט	[0.001 Nm to 0.01 Nm]	0.4 % OR	
525	A	T	Mechanical and Electronic torque calibration equipment	מכשירים למדידת מומנט (מכאניים ואלקטרוניים)	[0.01 Nm to 500 Nm]	0.15 % OR	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Humidity					כיוול – גדלים פיזיקליים - לחות		
526	A	P	Relative humidity RH meters	0 °C to 10 °C [5 %rh to 25 %rh]	0.8 %rh	ASTM-E-104-20a NIS 19 OIML R121 Manufacturer instructions WI-C046	Chilled mirror hygrometer. היגרומטר מד נקודת טל. Humidity and temperature controlled chamber. תא מבוקר לחות וטמפרטורה.
527	A	P	RH data loggers	(25 %rh to 65 %rh)	1.2 %rh		
528	A	P	RH probes	(65 %rh to 95 %rh)	1.6 %rh		
529	A	P	RH transducers	10 °C to 20 °C [5 %rh to 25 %rh]	0.8 %rh		
530	A	P		(25 %rh to 65 %rh)	1.0 %rh		
531	A	P		(65 %rh to 95 %rh)	1.3 %rh		
532	A	P		20 °C to 50 °C [5 %rh to 55 %rh]	0.8 %rh		
533	A	P	(55 %rh to 75 %rh)	1.0 %rh			
534	A	P	(75 %rh to 95 %rh)	1.3 %rh			
535	A	P	RH transducers	50 °C to 90 °C [5 %rh to 45 %rh]	0.6 %rh		
536	A	P		(45 %rh to 75 %rh)	0.8 %rh		
537	A	P		(75 %rh to 95 %rh)	1.0 %rh		
538	A	T	Relative humidity RH probes RH chambers RH meters	0 °C to 90 °C [5 %rh to 95 %rh]	2.0 %rh		
539	A	P;T	Relative humidity RH probes	23°C ± 2 °C 5% rh	0.3 % rh	Salt solutions in ampoules as humidity standards.	
540	A	P;T		10% rh	0.4 % rh		
541	A	P;T		11.3% rh	0.4 % rh		
542	A	P;T		35% rh	0.45 % rh		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Humidity					כיול – גדלים פיזיקליים - לחות		
543	A	P;T		50% rh	0.65 % rh		
544	A	P;T		75% rh	0.75 % rh		
545	A	P;T		80% rh	0.75 % rh		
546	A	P;T		95% rh	0.85 % rh		
547	A	P;T	Dew point	נקודת טל [$-40\text{ }^{\circ}\text{C}$ to $60\text{ }^{\circ}\text{C}$]	0.11 $^{\circ}\text{C}$		Chilled mirror hygrometer היגרומטר מד נקודת טל.
548	A	P;T	RH meters RH transducers	לחות יחסית מדי לחות מתמרי לחות ($60\text{ }^{\circ}\text{C}$ to $90\text{ }^{\circ}\text{C}$)	0.15 $^{\circ}\text{C}$		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Liquid and Air Flow					כיוול – גדלים פיזיקליים – זרימה, נוזל ואוויר		
549	A	P, T	Flowrate	[0.01 L/min to 0.1 L/min]	0.4 %O.R. + 0.0004 L/min	NIST Special publication 250-49	Reference and UUT connected in series
550	A	P, T	Gas flowmeters	(0.1 L/min to 1 L/min)	0.4 %O.R. + 0.004 L/min	National measurement system - GOOD PRACTICE GUIDE THE CALIBRATION OF FLOW METERS WI-C079	Flow rates values may be converted to other units by taking into account relevant reference conditions. STP conditions: 25°C 1 atm (14.696 psi)
551	A	P, T		(1 L/min to 5 L/min)	0.4 %O.R. + 0.02 L/min		
552	A	P, T		(5 L/min to 50 L/min)	0.4 %O.R. + 0.2 L/min		
553	A	P, T		(50 L/min to 500 L/min)	0.4 %O.R. + 2 L/min		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Mass					כיוול – גדלים פיזיקליים - מסה		
554	A	P	Mass	0.001 g	0.0008 mg	OIML R 111-1	מאזני השוואה
555	A	P	Weights	0.002 g	0.0009 mg	OIML R 52	Calibration can be given in other units as required.
556	A	P		0.005 g	0.001 mg	ASTM-E-617	Intermediate value can be calibrated with an uncertainty interpolated from the next higher and lower values in the table.
557	A	P		0.01 g	0.0012 mg	WI-C045	
558	A	P		0.02 g	0.0014 mg		
559	A	P		0.05 g	0.0016 mg		
560	A	P		0.1 g	0.0023 mg		
561	A	P		0.2 g	0.003 mg		
562	A	P		0.5 g	0.0036 mg		
563	A	P		1 g	0.0046 mg		
564	A	P		2 g	0.0053 mg		
565	A	P		5 g	0.0068 mg		
566	A	P		10 g	0.017 mg		
567	A	P		20 g	0.018 mg		
568	A	P		50 g	0.021 mg		
569	A	P		100 g	0.033 mg		
570	A	P		200 g	0.049 mg		
571	A	P		500 g	0.23 mg		
572	A	P		1000 g	0.31 mg		
573	A	P		2000 g	0.47 mg		
574	A	P		5000 g	1.9 mg		
575	A	P		10000 g	3 mg		
576	A	P		20000 g	10 mg		
577	A	P		(20 kg to 60 kg]	21 mg		משקולות סטנדרטיות מעל 50 kg ניתן לכייל מדרגת M2 ומטה או מקביל.
578	A	P		(60 kg to 500 kg]	21 g		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Mass					כיוול – גדלים פיזיקליים - מסה		
579	A	P;T	Non automatic weighing instruments מאזניים לא אוטומטיים	(Up to 10 mg]	1.3 μg + 0.6res	OIML R76 Manufacturer instructions WI-C044	<p>1. Uncertainties depend on the performance of the weighting machine under calibration.</p> <p>2. Available weights are: OIML Class E2 from 1 mg to 2 kg, OIML Class F1 from 1 mg to 5 kg, OIML Class F2 from 1 mg to 5 kg, OIML Class M1 from 1 mg to 20 kg, OIML Class M2 from 5 kg to 20 kg, test weights 2 × 500 kg.</p> <p>OIML Class E1 weights can be provided on demand.</p> <p>3. res - resolution</p>
580	A	P;T		(10 mg to 100 mg]	2.6 μg + 0.6res		
581	A	P;T		(100 mg to 500 mg]	3.6 μg + 0.6res		
582	A	P;T		(500 mg to 2 g]	7.4 μg + 0.6res		
583	A	P;T		(2 g to 5 g]	8.9 μg + 0.6res		
584	A	P;T		(5 g to 10 g]	18 μg + 0.6res		
585	A	P;T		(10 g to 20 g]	24 μg + 0.6res		
586	A	P;T		(20 g to 50 g]	29 μg + 0.6res		
587	A	P;T		(50 g to 120 g]	0.65 μg/g + 0.6res		
588	A	P;T		(120 g to 620 g]	0.4 μg/g + 0.6res		
589	A	P;T		(620 g to 110 kg]	1.5 μg/g + 0.6res		
590	A	P;T		(110 kg to 550 kg]	24 μg/g + 0.6res		
591	A	P;T	(500 kg to 10000 kg]	62 μg/g + 0.6res			



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks	
Calibration – Physical Quantities - Pressure					כיוול - גדלים פיזיקליים – לחץ			
592	A	P;T	Pneumatic pressure, Gauge. Pressure indicating instruments and gauges Differential pressure	לחץ פניאומאטי, יחסי מדידי לחץ פניאומאטיים לחץ הפרשי	[-1.25 kPa to 1.25 kPa]	0.7 Pa/kPa OR + 0.05 Pa	OIML-R 101IS 697 Euramet cg 17 Manufacturer instructions WI-C047 WI-C068	Druck 610LP 1 Pa/kPa = 0.1%
593	A	P	Pneumatic pressure Absolute. Pressure indicating instruments and gauges	לחץ פניאומאטי, אבסולוטי מדידי לחץ פניאומאטיים	[1.6 kPa to 7 MPa]	0.10 Pa/kPa OR + 1 Pa		Ruska 2465-754 Pace 5000 or similar
594	A	P	Pneumatic pressure, Gauge. Pressure indicating instruments and gauges	לחץ פניאומאטי, יחסי מדידי לחץ פניאומאטיים	[1.6 kPa to 7 MPa]	0.10 Pa/kPa OR + 0.35 Pa		Ruska 2465-754 Pace 5000 or similar Including differential pressure
595	A	P	Pneumatic pressure, Gauge Dead weight tester. Effective area of pneumatic dead weight tester piston	לחץ פניאומאטי, יחסי כיוול שטח אפקטיבי של בוכנת מאזני לחץ פניאומאטיים	[1.6 kPa to 7 MPa]	0.10 Pa/kPa OR + 0.35 Pa	Euramet cg 3 Manufacturer instructions WI-C068	Ruska 2465-754 Dead weight tester to be supplied with its mass set Calibration by means of cross float method
596	A	P	Hydraulic pressure, (gauge) Pressure indicating instruments and gauges	לחץ הידראולי מדידי לחץ	[0.6 MPa to 121 MPa]	0.20 Pa/kPa	OIML-R 101 IS 697 Euramet cg 17 Manufacturer instructions WI-C068 WI-C047	DH-Budenberg 580HX
597	A	P	Hydraulic pressure, Dead weight tester. Effective area of hydraulic dead weight tester piston	לחץ הידראולי כיוול שטח אפקטיבי של בוכנת מאזני לחץ הידראוליים	[0.6 MPa to 121 MPa]	0.20 Pa/kPa	Euramet cg 3 Manufacturer instructions WI-C068	DH-Budenberg 580HX Dead weight tester to be supplied with its mass set Calibration by means of cross float method



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Pressure					כיוול - גדלים פיזיקליים – לחץ		
598	A	T	Pneumatic pressure Absolute Pressure indicating instruments and gauges	לחץ פניאומאטי, אבסולוטי מדידי לחץ פניאומאטיים	[1.6 kPa to 0.7 MPa]	1.5 Pa/kPa	OIML-R 101 IS 697 Euramet cg 17 Druck 610 Druck 603 Druck 104
599	A	T	Pneumatic pressure Gauge Pressure indicating instruments and gauges	לחץ פניאומאטי, יחסי מדידי לחץ פניאומאטיים	[1.6 kPa to 7 MPa]	1.0 Pa/kPa	Manufacturer instructions WI-C047
600	A	T	Hydraulic pressure (gauge) Pressure indicating instruments and gauges	לחץ הידראולי מדידי לחץ	[0.6 MPa to 70 MPa]	1.0 Pa/kPa	
601	A	P;T	Blood pressure meter	מד לחץ דם	[30 mmHg to 280 mmHg]	1 mmHg	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks	
Calibration – Physical Quantities - Temperature					כיוול – גדלים פיזיקליים - טמפרטורה			
602	A	P	Liquid in glass thermometers	תרמומטרים נוזל בזכוכית	[- 80 °C to – 30 °C]	0.15 °C	ISO 1770 ISO 1771 ISO 386 ASTM E563 ASTM E77 BS 593 BS 1704 Manufacturer instructions WI-C063	אמבטיות כיוול תרמומטר אב PRT
603	A	P			(- 30 °C to 0 °C)	0.1 °C		
604	A	P			(0 °C to 250 °C)	0.08 °C		
605	A	P			(250 °C to 550 °C)	0.5 °C		
606	A	T			[-40 °C to 150 °C]	1.0 °C		
607	A	T			(150 °C to 250 °C)	2.0 °C		
608	A	P	Resistance thermometers	גששי טמפרטורה התנגדות	-196 °C	0.02 °C		
609	A	P			[- 100 °C to -80 °C]	0.2 °C		
610	A	P			[- 80 °C to 250 °C]	0.02 °C		
611	A	P			(250 °C to 550 °C)	0.05 °C		
612	A	P			(550 °C to 661 °C)	0.3 °C		
613	A	P			0.01 °C	0.006 °C		
614	A	T	PRT	גששי טמפרטורה התנגדות	-196 °C	0.1 °C	Liquid nitrogen/ air or other gas/ Ethanol/Water/Salt/ Dry block PRT may calibrated with its indicator. The uncertainty will be dependent on the indicator performance.	
615	A	T	Measurement by comparison		(- 196 °C to – 100 °C)	0.5 °C		
616	A	T			[- 100 °C to – 40 °C)	0.1 °C		
617	A	T			[- 40 °C to 140 °C]	0.1 °C		



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Temperature						כיוול – גדלים פיזיקליים - טמפרטורה		
618	A	T			(140 °C to 250 °C)	0.3 °C		כולל סעיף 10.3 מתוך נוהל משרד הבריאות מס' 126 Calibration of SPRT/PRT/Thermistors etc. מערכות למדידת טמפרטורה
619	A	T			(250 °C to 661 °C)	0.5 °C		
620	A	P	TC base metal	צמודים תרמיים מתכות בסיסיות Measurement by comparison	-196 °C	0.14 °C	ASTM-E-230 ASTM-E-220 ITS-90 Manufacturer instructions WI-C065	Liquid nitrogen/ air or other gas/ Ethanol/ Dry block TC may calibrated with its indicator. The uncertainty will be dependent on the indicator performance.
621	A	P			[- 100 °C to -80 °C)	0.2 °C		
622	A	P			[- 80 °C to 250 °C]	0.14 °C		
623	A	P			(250 °C to 550 °C)	0.4 °C		
624	A	P			(550 °C to 1100 °C)	1 °C		
625	A	P			(1100°C to 1300 °C)	2.2 °C		
626	A	T			-196 °C	0.3 °C		
627	A	T			(- 196 °C to – 100 °C)	0.5 °C		
628	A	T			[- 100 °C to -40 °C)	0.2 °C		
629	A	T			[- 40 °C to 250 °C]	0.2 °C		
630	A	T		(250 °C to 550 °C)	0.5 °C			
631	A	T		(550 °C to 1100 °C)	1.5 °C			
632	A	T		(1100 °C to 1300 °C)	2.3 °C			
633	A	P	TC noble metal	צמודים תרמיים מתכות אצילות	[0 °C to 250 °C]	0.14 °C	ASTM-E-230	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Temperature					כיוול – גדלים פיזיקליים - טמפרטורה		
634	A	P	Measurement by comparison	(250 °C to 550 °C)	0.4 °C	ASTM-E-220 ITS-90 Manufacturer instructions WI-C065	TC may calibrated with its indicator. The uncertainty will be dependent on the indicator performance.
635	A	P		(550 °C to 1100 °C)	1 °C		
636	A	P		(1100°C to 1300 °C)	1.6 °C		
637	A	T		[0 °C to 250 °C]	0.3 °C		
638	A	T		(250 °C to 550 °C)	0.5 °C		
639	A	T		(550 °C to 1100 °C)	1.5 °C		
640	A	T		(1100 °C to 1300 °C)	1.8 °C		
641	A	P;T	Temperature controlled chambers מכפייאים, אינקובטורים Furnaces, Freezers, Incubators, Autoclaves כולל בדיקת אחידות	[-196 °C to -100 °C)	0.8 °C	DKD-R-5-7 DIN 12880 ASTM D1238 ISO 1133 AMS 2750 ISO 17665 ISO 11135 Manufacturer instructions WI-C062	TC, PRT, Data logger
642	A	P;T		[-100 °C to -45 °C)	0.5 °C		
643	A	P;T		[-45 °C to 70 °C)	0.25 °C		
644	A	P;T		[70 °C to 151 °C)	0.5 °C		
645	A	P;T		[151 °C to 300 °C)	0.7 °C		
646	A	P;T		(300 °C to 550 °C)	1 °C		
647	A	P;T		(550 °C to 1100 °C)	2.5 °C		
648	A	P;T		[1100 °C to 1300 °C)	3.5 °C		
649	A	P;T	Bathes כולל בדיקת אחידות	[-196 °C to 251 °C)	0.03 °C	Manufacturer instructions WI-C062	SPRT, PRT
650	A	P;T		(251 °C to 550 °C)	0.09 °C		
651	A	P;T	Dry block calibrator תנור בלוק יבש	[-110 °C to 300 °C)	0.05 °C	EURAMET cg-13 Manufacturer instructions WI-C062	PRT
652	A	P;T		(300 °C to 550 °C)	0.2 °C		
653	A	P;T		(550°C to 661°C)	0.3 °C		
654	A	P;T		(661 °C to 1000 °C)	0.7 °C		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Temperature					כיוול – גדלים פיזיקליים - טמפרטורה		
655	A	P;T		(1000 °C to 1300 °C)	2 °C		
656	A	P;T	Tube furnace	[300 °C to 661 °C]	0.2 °C	Manufacturer instructions WI-C062	PRT,TC
657	A	P;T	Including uniformity	(661 °C to 1100 °C)	1.2 °C		
658	A	P;T		(1100 °C to 1300 °C)	2.5 °C		
659	A	P;T	Temperature indicators, controllers, recorders and simulators for the resistance sensors	מדי, רשמי ומדמי טמפרטורה עבור מדי התנגדות	-200 °C to 800 °C	EURAMET cg-11 Manufacturer instructions WI-C067 WI-C100	Calibration by means of electrical calibration,
660	A	P;T	Temperature indicators, controllers, recorders and simulators for the base metal thermocouples	מדי, רשמי ומדמי טמפרטורה עבור צמדים תרמיים מתכות בסיסיות	-200 °C to 1380 °C	EURAMET cg-11 Manufacturer instructions WI-C067 WI-C100	Calibration by means of electrical calibration, including cold junction compensation
661	A	P;T	Temperature indicators, controllers, recorders and simulators for the noble metal thermocouples	מדי, רשמי ומדמי טמפרטורה עבור צמדים תרמיים מתכות אצילות	0 °C to 500 °C	EURAMET cg-11 Manufacturer instructions WI-C067 WI-C100	Calibration by means of electrical calibration, including cold junction compensation
662	A	P;T		500 °C to 1800 °C	0.3 °C		
663	A	T	Temperature,	טמפרטורה	0.5 °C	ASTM E2847	IR Calibrator
664	A	P;T	Infrared Thermometers,	מדי טמפרטורת קרינה	0.4 °C	Manufacturer instructions WI-C080	כיוול מדי טמפרטורה ללא מגע בבית הלקוח יבוצעו אל מול גוף שחור שישופק על ידי הלקוח
665	A	P;T		[30 °C to 100 °C]	0.65 °C		
666	A	P;T		(100 °C to 200 °C)	1.0 °C		
667	A	P;T		(200 °C to 350 °C)	1.4 °C		
668	A	P;T		(350 °C to 500 °C)	3 °C		
669	A	P;T		(500 °C to 750 °C)	3.5 °C		
670	A	P;T	Temperature	טמפרטורה	0.4 °C	ASTM E2847	Radiometric calibration
				[-20 °C to 100 °C]			



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Physical Quantities - Temperature						כיוול – גדלים פיזיקליים - טמפרטורה		
671	A	P,T	Black Body Calibration	כיוול גופים שחורים	(100 °C to 300 °C)	1.1 °C	Manufacturer instructions WI-C080	Thermometric calibration for black body sensor - according to sensor's type & scope
672	A	P,T			(300 °C to 500 °C)	1.9 °C		
673	A	P,T			(500 °C to 750 °C)	2.8 °C		
674	A	P,T			(750 °C to 1000 °C)	3.3 °C		
675	A	P,T	Temperature - uniformity Black Body Calibration	טמפרטורה - אחידות כיוול גופים שחורים	[-20 °C to 1000 °C]	0.2 °C	Manufacturer instructions WI-C080	Radiometric calibration

Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Small (up to 2L) Volume Volumetric Instruments						כיוול – כוול מכשירים וולומטריים – נפחים קטנים עד 2 ליטר		
676	A	P	Liquid volume,	נפח נוזלים כיוול מכשירים	Nominal value Up to 1µl	0.020 µl	ISO 8655- Part 1,2,3,4,5,6	מתקן נפח מופעל בוכנה POVA



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Small (up to 2L) Volume Volumetric Instruments					כיוול – כיוול מכשירים וולומטריים – נפחים קטנים עד 2 ליטר		
677	A	P	Piston-operated volumetric apparatus וולומטריים בהנע בוכנה	2 µl	0.025 µl	ISO/TR 20461 Manufacturer instructions WI-C074	Intermediate volumes may be calibrated with uncertainty as for the higher volume value
678	A	P		5 µl	0.030 µl		
679	A	P		10 µl	0.040 µl		
680	A	P		20 µl	0.060 µl		
681	A	P		50 µl	0.12 µl		
682	A	P		100 µl	0.15 µl		
683	A	P		200 µl	0.3 µl		
684	A	P		500 µl	0.6 µl		
685	A	P		1000 µl	1.0 µl		
686	A	P		2000 µl	3.0 µl		
687	A	P		5000 µl	6.0 µl		
688	A	P		10000 µl	10 µl		
689	A	P		20000 µl	20 µl		
690	A	P		25000 µl	25 µl		
691	A	P	50000 µl	30 µl			
692	A	P	100000 µl	40 µl			



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks	
Calibration – Chemical Quantities, pH Meters					כיול – גדלים כימיים - מדי pH			
693	A	P;T	PH meters Calibration using standard solutions	מדי PH (ערך הגבה) כיול בחשוואה לתמיסות	[4 to 10] pH	0.02 pH	ASTM D1293 BS 3145 Manufacturer instructions WI-C077	Standard Solution



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks	
Calibration – Electrochemical Quantities - Liquid Conductivity Meters					כיוול – גדלים אלקטרוכימיים - מדי מוליכות נוזלים			
694	A	P;T	Conductivity meters	מדי מוליכות	1.3 μs/cm	7.7 %O.R.	ASTM D1225 ISO 7888 Manufacturer instructions WI-C087	Standard Solution Values may differ slightly due to temperature variations
695	A	P;T	Calibration using standard solutions	כיוול בהשוואה לתמיסות	5 μs/cm	2 %O.R.		
696	A	P;T			84 μs/cm	1 %O.R.		
697	A	P;T			1413 μs/cm	1 %O.R.		
698	A	P;T			12880 μs/cm	1 %O.R.		
699	A	P;T	Conductivity meters Calibration by comparison to a conductivity meter	מדי מוליכות כיוול בהשוואה למד מוליכות	[0.02 to 13,000] μs/cm	1.5% O.R. + 0.01 μs/cm	ASTM D1225 ISO 7888 Manufacturer instructions WI-C087	Calibration of conductivity meter adjacent to a reference meter which is calibrated using solutions and resistors Calibration units may be presented as either conductance or resistance
700	A	P	Conductivity meters Calibration by comparison to a known resistance	מדי מוליכות כיוול בהשוואה לנגדים	[0.02 to 13,000] μs/cm	1% O.R.	ASTM D1225 ISO 7888 Manufacturer instructions WI-C087	Calibration using resistors to establish linearity in comparison to measured values using solutions Calibration units may be presented as either conductance or resistance



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Mechanical Quantities – Air Velocity						כיוול – גדלים מכניים – מהירות אוויר		
701	A	P	Air Velocity Meters	מדי מהירות אוויר	[0.3 m/s to 5 m/s]	0.2 m/s	ISO 17713-1 IEC610400-12-1	Are calibrated against a reference anemometer using an open blowdown wind tunnel Anemometer of all types with diameter up to 100 mm can be calibrated
702	A	P			(5 m/s to 10 m/s]	0.3 m/s	EURAMET CG-24 ISO 16622	
703	A	P			(10 m/s to 30 m/s]	0.4 m/s	ASTM D5096 FAA-RD-77-49 Manufacturer instructions WI-C086	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	CMC Expressed as an Expanded Uncertainty (95%)	Reference Documents	Remarks
Calibration - Chemical Quantities - Gas Detector						כיוול - גדלים כימיים - גלאי גזים באוויר	
704	A	P;T	Gas detector CO (Carbon monoxide)	גלאי גז CO (פחמן חד-חמצני)	25 µmol/mol	1 % O.R.	ISO 16664 OSHA SHIB 09-30-2013 Manufacturer instructions WI-C088 O.R.- Of Reading כיוול גלאי גזים אל מול גז ייחוס או באווירה מבוקרת (חצמדה / הזרמה בטור) The Range is a Nominal concentration of Reference gas. This value can be vary according to certified concentration of Reference gas from the calibration certificate. Actual value may be in the margins of ±10% of nominal value LEL -Lower Explosive Limit כיוול גלאי פרופאן, בוטאן, איזו-בוטאן ואן-בוטאן, אתילן, ואתאן באמצעות גז חליפי מתאן 2.5% (CH ₄ 6*) Propane 5* Star rating Butane & N-Butane 4* Iso Butane 5* Ethylene 5* Ethane 5*
705	A	P;T		50 µmol/mol	2 % O.R.		
706	A	P;T		100 µmol/mol	0.2 % O.R.		
707	A	P;T		[25 µmol/mol to 100 µmol/mol]	5 % O.R.		
708	A	P;T	Gas detector O2 (Oxygen)	גלאי גז O2 (חמצן)	12 %	2 % O.R.	
709	A	P;T		18 %	0.5 % O.R.		
710	A	P;T		20.9 %	0.25 % O.R.		
711	A	P;T		[12 % to 20.9 %]	5 % O.R.		
712	A	P;T	Gas detector CH4 (Methane)	גלאי גז CH4 (מתאן)	2.2 % (44 % LEL)	0.8 % O.R.	
713	A	P;T		2.5 % (50 % LEL)	1 % O.R.		
714	A	P;T	Gas detector C3H8 (Propane)	גלאי גז C3H8 (פרופאן)	62 % LEL	4 % O.R.	
715	A	P;T	Gas Detector C4H10 (Butane & N-Butane)	גלאי גז C4H10 (בוטאן ואן-בוטאן)	78 % LEL	4 % O.R.	
716	A	P;T	Gas Detector C4H8 (Iso Butane)	גלאי גז C4H8 (איזו-בוטאן)	62 % LEL	4 % O.R.	
717	A	P;T	Gas Detector C2H4 (Ethylene)	גלאי גז C2H4 (אתילן)	62 % LEL	4 % O.R.	
718	A	P;T	Gas Detector C2H6 (Ethane)	גלאי גז C2H6 (אתאן)	62 % LEL	4 % O.R.	
719	A	P;T	Gas Detector C2H6O (Ethanol)	גלאי גז C2H6O (אתאנול)	500 µmol/mol	2 % O.R.	
720	A	P;T	Gas detector H2S (Hydrogen sulfide)	גלאי גז H2S (מימן גופרית)	10 µmol/mol	1.4 % O.R.	
721	A	P;T			20 µmol/mol	1 % O.R.	
722	A	P;T			25 µmol/mol	2 % O.R.	
723	A	P;T			[10 µmol/mol to 25 µmol/mol]	5 % O.R.	
724	A	P;T	Gas detector NO (Nitrous oxide)	גלאי גז NO (חנקן חמצני)	200 µmol/mol	1 % O.R.	
725	A	P;T			1000 µmol/mol	2 % O.R.	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	CMC Expressed as an Expanded Uncertainty (95%)	Reference Documents	Remarks
Calibration - Chemical Quantities - Gas Detector						כיוול - גדלים כימיים - גלאי גזים באוויר	
726	A	P;T		[200 µmol/mol to 1000 µmol/mol]	5 % O.R.		
727	A	P;T	Gas detector NO ₂ (Nitrous dioxide)	גלאי גז NO ₂ (חנקן דו-חמצני)	100 µmol/mol	2 % O.R.	
728	A	P;T	Gas detector SO ₂ (Sulfur dioxide)	גלאי גז SO ₂ (גופרית דו-חמצנית)	80 µmol/mol	0.6 % O.R.	
729	A	P;T			100 µmol/mol	0.3 % O.R.	
730					[80 µmol/mol to 100 µmol/mol]	5 % O.R.	
731	A	P;T	Gas detector CO ₂ (Carbon dioxide)	גלאי גז CO ₂ (פחמן דו-חמצני)	1 %	1 % O.R.	
732	A	P;T			4 %	0.6 % O.R.	
733	A	P;T			10 %	2 % O.R.	
734	A	P;T			[1 % to 10 %]	5 % O.R.	
735	A	P;T	Gas detector NH ₃ (Ammonia)	גלאי גז NH ₃ (אמוניה)	80 µmol/mol	2.1 % O.R.	

¹⁾ The uncertainty covered by the CMC expressed as the standard measurement uncertainty multiplied by the coverage factor *k* such that the coverage probability corresponds to approximately 95 %.