



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: 12.05.2024

בתוקף מיום: 04.05.2022

הארגון נבדק ונבחן על ידי הרשות הלאומית להסמכת מעבדות (להלן הרשות) ונמצא ראוי להסמכה בהתאם לנספח פירוט היקף ההסמכה המצורף לתעודה זו, המהווה חלק בלתי נפרד ממנה ומספרו זהה למספר התעודה. הסמכה מצביעה על כשירות מקצועית ותפעול מערכת ניהול איכות בעלת הכרה בינלאומית. הארגון המוסמך על ידי הרשות, עומד בתקנים / דרישות המפורטים מעלה. דרישות התקנים הם לכשירות מקצועית ולמערכות ניהול, שהינן הכרחיות למתן תוצאות אמינות. הסמכה זו ניתנה בהתאם לכללי תקן ISO/IEC 17011:2017 לפיהם פועלת הרשות ובמסגרתם מקיימת פיקוח שוטף על הארגון לצורך בחינת תפקודו המתמשך בהתאם לדרישות ההסמכה. ההסמכה תקפה כל עוד הארגון עונה לאמות המידה שנקבעו על ידי הרשות. הרשות חתומה על הסכם הכרה דו צדדי (BLA) מול ארגון (EA) European co-operation for Accreditation.

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: 04.05.2022

Until: 12.05.2024

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 19/11/2023

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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
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.	0 μ A	0.51 nA	MetCal	Datron 1281
26	A	P;T	Sources	[10 nA to 200 μ A]	7.3 μ A/A		Fluke 8508A
27	A	P;T		(200 μ A to 2 mA]	8.1 μ A/A	Automated Calibration Software	
28	A	P;T		(2 mA to 20 mA]	4.5 μ A/A		
29	A	P;T		(20 mA to 200 mA]	11 μ A/A	Manufacturer instructions	
30	A	P;T		(200 mA to 2 A]	14 μ A/A	WI-C100	
31	A	P;T		(2 A to 20 A]	48.7 μ A/A		
32	A	P;T	DC Current, Measuring Instruments	0 μ A	0.52 nA	MetCal	
33	A	P;T		[2 nA to 220 μ A]	8 μ A/A	Automated Calibration Software	Fluke 5520A
34	A	P;T		(220 μ A to 2.2 mA]	10 μ A/A	Manufacturer instructions	Fluke 5522A Fluke 5730A
35	A	P;T		(2.2 mA to 22 mA]	6 μ A/A	WI-C100	Fluke 5725A
36	A	P;T		(22 mA to 220 mA]	14 μ A/A		Current Coils
37	A	P;T		(220 mA to 2.2 A]	16 μ A/A		
38	A	P;T		(2.2 A to 20 A]	480 μ A/A		
39	A	P;T		(20 A to 105 A]	0.64 mA/A		
40	A	P;T		(105 A to 160 A]	9.64 mA/A		
41	A	P;T		(160 A to 525 A]	32.2 mA/A		
42	A	P;T		(525 A to 1000 A]	74.8 mA/A		
43	A	P;T	AC Voltage, Sources	(0.22 mV to 200 mV]		1 MHz	Datron 1281
				[1 Hz to 10 Hz]	46 μ V/V		FLUKE 8508A
44	A	P;T		(10 Hz to 100 Hz]	45 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		
45	A	P;T		(100 Hz to 2 kHz]	57 μV/V		
46	A	P;T		(2 kHz to 10 kHz]	40 μV/V		
47	A	P;T		(10 kHz to 30 kHz]	41 μV/V		
48	A	P;T		(30 kHz to 1 MHz]	60 μV/V		
			(200 mV to 2 V]				
49	A	P;T		[1 Hz to 10 Hz]	26 μV/V		
50	A	P;T		(10 Hz to 40 Hz]	24 μV/V		
51	A	P;T		(40 Hz to 100 Hz]	20 μV/V		
52	A	P;T		(100 Hz to 2 kHz]	18 μV/V		
53	A	P;T		(2 kHz to 30 kHz]	20 μV/V		
54	A	P;T		(30 kHz to 100 kHz]	22 μV/V		
55	A	P;T		(100 kHz to 300 kHz]	140 μV/V		
56	A	P;T		(300 kHz to 1 MHz]	620 μV/V		
			(2 V to 20V]				
57	A	P;T		[1 Hz to 10 Hz]	38 μV/V		
58	A	P;T		(10 Hz to 40 Hz]	28 μV/V		
59	A	P;T		(40 Hz to 100 Hz]	21 μV/V		
60	A	P;T		(100 Hz to 2 kHz]	20 μV/V		
61	A	P;T		(2 kHz to 10 kHz]	22 μV/V		
62	A	P;T		(10 kHz to 30 kHz]	25 μV/V		
63	A	P;T		(30 kHz to 1 MHz]	192 μV/V		
			(20V to 200V]				
64	A	P;T		[1 Hz to 10 Hz]	38 μV/V		
65	A	P;T		(10 Hz to 40 Hz]	35 μV/V		



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Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
66	A	P;T		(40 Hz to 100 Hz]	36 μV/V		
67	A	P;T		(100 Hz to 2 kHz]	27 μV/V		
68	A	P;T		(2 kHz to 100 kHz]	33 μV/V		
69	A	P;T		(100 kHz to 1 MHz]	54 μV/V		
				(200 V to 1050 V]			
70	A	P;T		[1 Hz to 100 Hz]	51 μV/V		
71	A	P;T		(100 Hz to 1 kHz]	50 μV/V		
72	A	P;T		(1 kHz to 100 kHz]	40 μV/V		
73	A	P;T	AC Voltage. Measuring Instruments	(0.22 mV to 220 mV]		MetCal	Fluke 5520A
			מתח חילופין מכשירי מדידת מתח	[10Hz to 20 Hz]	56 μV/V	Automated Calibration Software	Fluke 5522A
74	A	P;T		(20 Hz to 40 Hz]	55 μV/V	Manufacturer instructions	FLUKE 5730A
75	A	P;T		(40 Hz to 1 kHz]	69 μV/V	WI-C100	
76	A	P;T		(1 kHz to 20 kHz]	50 μV/V		
77	A	P;T		(20 kHz to 50 kHz]	49 μV/V		
78	A	P;T		(50 kHz to 500 kHz]	72 μV/V		
79	A	P;T		(500 kHz to 1 MHz]	73 μV/V		
				(220 mV to 2.2 V]			
80	A	P;T		[10Hz to 20 Hz]	31 μV/V		
81	A	P;T		(20 Hz to 40 Hz]	30 μV/V		
82	A	P;T		(40 Hz to 20 kHz]	24 μV/V		
83	A	P;T		(20 kHz to 100 kHz]	27 μV/V		
84	A	P;T		(100 kHz to 500 kHz]	168 μV/V		
85	A	P;T		(500 kHz to 1 MHz]	745 μV/V		
				(2.2 V to 22 V]			
86	A	P;T		[10Hz to 20 Hz]	53 μV/V		



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Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
87	A	P;T		(20 Hz to 40 Hz]	34 μ V/V		
88	A	P;T		(40 Hz to 50 kHz]	31 μ V/V		
89	A	P;T		(50 kHz to 500 kHz]	230 μ V/V		
90	A	P;T		(500 kHz to 1 MHz]	750 μ V/V		
				(22 V to 220 V]			
91	A	P;T		[10Hz to 20 Hz]	46 μ V/V		
92	A	P;T		(20 Hz to 40 Hz]	43 μ V/V		
93	A	P;T		(40 Hz to 20 kHz]	39 μ V/V		
94	A	P;T		(20 kHz to 100 kHz]	40 μ V/V		
95	A	P;T		(100 kHz to 1 MHz]	65 μ V/V		
				(220 V to 1100 V]			
96	A	P;T		(15 Hz to 50 Hz]	79 μ V/V		
97	A	P;T		(50 Hz to 1kHz]	51 μ V/V		
98	A	P;T	AC Current Sources	Up to 200 μ A]		MetcalAutomated Calibration Software Manufacturer Instruction WI-C100	Datron 1281 Fluke 8508A
				[1 Hz to 100 Hz]	67 μ A/A		
99	A	P;T		(100 Hz to 500 Hz]	60 μ A/A		
100	A	P;T		(500 Hz to 1 kHz]	91 μ A/A		
101	A	P;T		(1 kHz to 5 kHz]	150 μ A/A		
102	A	P;T		(5 kHz to 10 kHz]	400 μ A/A		
				(200 μ A to 2 mA]			
103	A	P;T		[1 Hz to 100 Hz]	72 μ A/A		
104	A	P;T		(100 Hz to 1 kHz]	60 μ A/A		
105	A	P;T		(1 kHz to 5 kHz]	80 μ A/A		
106	A	P;T		(5 kHz to 100 kHz]	110 μ A/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		
107	A	P;T		(2 mA to 20 mA) [1 Hz to 100 Hz]	38 μ A/A		
108	A	P;T		(100 Hz to 500 Hz)	36 μ A/A		
109	A	P;T		(500 Hz to 1 kHz)	35 μ A/A		
110	A	P;T		(1 kHz to 5 kHz)	55 μ A/A		
111	A	P;T		(5 kHz to 100 kHz)	73 μ A/A		
112	A	P;T		(20 mA to 200 mA) [1 Hz to 100 Hz]	28 μ A/A		
113	A	P;T		(100 Hz to 500 Hz)	27 μ A/A		
114	A	P;T		(500 Hz to 1 kHz)	39 μ A/A		
115	A	P;T		(1 kHz to 5 kHz)	45 μ A/A		
116	A	P;T		(5 kHz to 100 kHz)	51 μ A/A		
117	A	P;T		(200 mA to 2 A) [1 Hz to 500 Hz]	160 μ A/A		
118	A	P;T		(500 Hz to 1 kHz)	150 μ A/A		
119	A	P;T		(1 kHz to 5 kHz)	130 μ A/A		
120	A	P;T		(5 kHz to 100 kHz)	220 μ A/A		
121	A	P;T		(2 A to 20 A) (1 Hz to 2 kHz)	1.2 mA/A		
122	A	P;T		(2kHz to 10kHz)	3.2mA/A		
123	A	P;T	AC Current Measuring Instruments	(0.1 μ A to 220 μ A) [1 Hz to 100 Hz]	132 μ A/A	MetCal	Fluke 5520A
124	A	P;T		(100 Hz to 500 Hz)	87 μ A/A	Automated Calibration Software	Fluke 5522A Fluke 5725A
125	A	P;T		(500 Hz to 1 kHz)	110 μ A/A	Manufacturer instructions	Fluke 5730A Current Coils
126	A	P;T		(1 kHz to 5 kHz)	161 μ A/A	WI-C100	



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Calibration – Electrical Quantities - DC and LF					כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
127	A	P;T		(5 kHz to 10 kHz)	415 μA/A		
128	A	P;T		(220 μA to 2.2 mA)			
				[1 Hz to 100 Hz]	93 μA/A		
129	A	P;T		(100 Hz to 500 Hz)	85 μA/A		
130	A	P;T		(500 Hz to 1 kHz)	84 μA/A		
131	A	P;T		(1 kHz to 5 kHz)	99 μA/A		
132	A	P;T		(5 kHz to 10 kHz)	610 μA/A		
				(2.2 mA to 22 mA)			
133	A	P;T		[1 Hz to 100 Hz]	110 μA/A		
134	A	P;T		(100 Hz to 500 Hz)	71 μA/A		
135	A	P;T		(500 Hz to 1 kHz)	76 μA/A		
136	A	P;T		(1 kHz to 5 kHz)	150 μA/A		
137	A	P;T		(5 kHz to 10 kHz)	110 μA/A		
				(22 mA to 220 mA)			
138	A	P;T		[1 Hz to 100 Hz]	110 μA/A		
139	A	P;T		(100 Hz to 500 Hz)	65 μA/A		
140	A	P;T		(500 Hz to 1 kHz)	73 μA/A		
141	A	P;T		(1 kHz to 5 kHz)	75 μA/A		
142	A	P;T		(5 kHz to 10 kHz)	135 μA/A		
				(220 mA to 2.2 A)			
143	A	P;T		[1 Hz to 100 Hz]	270 μA/A		
144	A	P;T		(100 Hz to 500 Hz)	170 μA/A		
145	A	P;T		(500 Hz to 1 kHz)	220 μA/A		
146	A	P;T		(1 kHz to 5 kHz)	150 μA/A		
147	A	P;T		(5 kHz to 10 kHz)	450 μA/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		
148	A	P;T		(2.2 A to 11 A) [1 Hz to 1 kHz]	558 μ A/A		
149	A	P;T		(1 kHz to 5 kHz)	1.2 mA/A		
150	A	P;T		(5 kHz to 10 kHz)	4.3 mA/A		
151	A	P;T		(11 A to 20.5 A) [45 Hz to 100 Hz]	7.23 mA/A		
152	A	P;T		(100Hz to 1 kHz)	7.6 mA/A		
153	A	P;T		(1 kHz to 5 kHz)	41 mA/A		
154	A	P;T		(20 A to 32 A) [10 Hz to 440 Hz]	8.2 mA/A		
155	A	P;T		(32 A to 160 A) [10 Hz to 100 Hz]	39 mA/A		
156	A	P;T		(160 A to 200 A) [10 Hz to 440 Hz]	68 mA/A		
157	A	P;T		(200 A to 1000 A) [10 Hz to 50 Hz]	195 mA/A		
158	A	P;T	DC Resistance,	[0.0001 Ω ÷0.5 Ω] @ [1A÷10A]	0.047%	Manufacturer instructions	Low currents
159	A	P;T	Shunts	[0.0001 Ω ÷0.5 Ω] @ (10A÷50A)	0.085%	WI-C100	Fluke 5730A
160	A	P;T		[0.0001 Ω ÷0.5 Ω] @ [50A÷141A)	0.021%	WI-C101	Fluke 5725A
161	A	P;T		[0.0005 Ω ÷0.5 Ω] @ [141A÷224A)	0.01%		Fluke 8508A
162	A	P;T		[0.0005 Ω ÷0.5 Ω] @ [224A÷300A)	0.0064%		High currents
163	A	P;T		[0.0005 Ω ÷0.5 Ω] @ 300A	0.0054%		Std. Shunt 7.5 digit DMM
164	A	P	DC Resistance,	0 Ω	1.6 μ Ω		Datron 1281
165	A	P	Sources	(0 Ω to 2 Ω)	4 μ Ω / Ω	MetCal	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		
166	A	P			(2 Ω to 20 Ω]	4.1 μΩ/Ω	Automated Calibration Software Manufacturer instructions WI-C100	
167	A	P			(20 Ω to 200 Ω]	3.9 μΩ/Ω		
168	A	P			(200 Ω to 2 kΩ]	5 μΩ/Ω		
169	A	P			(2 kΩ to 20 kΩ]	4.1 μΩ/Ω		
170	A	P			(20 kΩ to 200 kΩ]	3.4 μΩ/Ω		
171	A	P			(200 kΩ to 2 MΩ]	8.5 μΩ/Ω		
172	A	P			(2 MΩ to 20 MΩ]	19 μΩ/Ω		
173	A	P			(20 MΩ to 200 MΩ]	140 μΩ/Ω		
174	A	P			(200 MΩ to 2 GΩ]	190 μΩ/Ω		
175	A	P			(2 GΩ to 20 GΩ]	120 μΩ/Ω		
176	A	T			0 Ω	4 μΩ		
177	A	T			(0 Ω to 2 Ω]	17 μΩ/Ω		
178	A	T			(2 Ω to 20 Ω]	9 μΩ/Ω		
179	A	T			(20 Ω to 200 Ω]	8.98 μΩ/Ω		
180	A	T			(200 Ω to 2 kΩ]	9.29 μΩ/Ω		
181	A	T			(2 kΩ to 20 kΩ]	9.22 μΩ/Ω		
182	A	T			(20 kΩ to 200 kΩ]	9.41 μΩ/Ω		
183	A	T			(200 kΩ to 2 MΩ]	11.5 μΩ/Ω		
184	A	T			(2 MΩ to 20 MΩ]	313 μΩ/Ω		
185	A	T			(20 MΩ to 200 MΩ]	6.9 mΩ/Ω		
186	A	T			(200 MΩ to 2 GΩ]	0.18%		
187	A	T			(2 GΩ to 100 GΩ]	0.18%		
188	A	P	DC Resistance, Measuring Instruments	התנגדות זרם ישר, מכשירי מדידה	0 Ω	3.6 μΩ	MetCal	FLUKE 5730A
189	A	P			1 Ω	4.3 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		
190	A	P		1.9 Ω	4.3 μΩ/Ω	Automated Calibration Software	
191	A	P		10 Ω	4.4 μΩ/Ω	Manufacturer instructions	
192	A	P		19 Ω	4.4 μΩ/Ω	WI-C100	
193	A	P		100 Ω	4.2 μΩ/Ω	WI-C101	
194	A	P		190 Ω	4.2 μΩ/Ω		
195	A	P		1 kΩ	5.4 μΩ/Ω		
196	A	P		1.9 kΩ	5.4 μΩ/Ω		
197	A	P		10 kΩ	4.4 μΩ/Ω		
198	A	P		19 kΩ	4.4 μΩ/Ω		
199	A	P		100 kΩ	3.7 μΩ/Ω		
200	A	P		190 kΩ	3.7 μΩ/Ω		
201	A	P		1 MΩ	9.1 μΩ/Ω		
202	A	P		1.9 MΩ	9.1 μΩ/Ω		
203	A	P		10 MΩ	20 μΩ/Ω		
204	A	P		19 MΩ	20 μΩ/Ω		
205	A	P		100 MΩ	150 μΩ/Ω		
206	A	P;T		0 Ω	3.6 μΩ	MetCal	Fluke5522A
207	A	P;T		(1 μΩ to 10 Ω]	21 μΩ/Ω	Automated Calibration Software	Fluke5520A
208	A	P;T		(10 Ω to 100 Ω]	9 μΩ/Ω	Manufacturer instructions	Fluke5730A
209	A	P;T		(100 Ω to 10 kΩ]	20 μΩ/Ω	WI-C100	
210	A	P;T		(10 kΩ to 100 kΩ]	8 μΩ/Ω	WI-C101	
211	A	P;T		(100 kΩ to 1 MΩ]	6 μΩ/Ω		
212	A	P;T		(1 MΩ to 10 MΩ]	30 μΩ/Ω		
213	A	P;T		(10 MΩ to 100 MΩ]	199 μΩ/Ω		
214	A	P;T		(100 MΩ to 1 GΩ]	517 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		(10 GΩ to 100 GΩ]	8.4 mΩ/Ω			
216	A	P;T	Air Standard Resistors	נגדי אוויר סטנדרטיים	1 Ω	4.5 μΩ/Ω	Manufacturer instructions	Standard resistors
217	A	P;T		10 Ω	6 μΩ/Ω	WI-C100		
218	A	P;T		100 Ω	6 μΩ/Ω	WI-C101		
219	A	P;T		1 kΩ	6 μΩ/Ω			
220	A	P;T		10 kΩ	1 μΩ/Ω			
221	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
222	A	P;T	Capacitance, Measuring Instruments	קיבול מכשירי מדידה	[100 pF – 1.1μF)	0.05 %	MetCal Automated Calibration Software Manufacturer instructions WI-C100	FLUKE 5520A FLUKE 5522A Standard capacitors and Decade
223	A	P;T			[1.1 μF – 11 μF)	0.34 %		
224	A	P;T			[11 μF – 33 μF)	0.49 %		
225	A	P;T			[33 μF – 1 mF]	0.54 %		
226	A	P;T			0.001 μF	0.02 %		
227	A	P;T			0.005 μF	0.024 %		
228	A	P;T			0.01 μF	0.013 %		
229	A	P;T			0.05 μF	0.024 %		
230	A	P;T		0.1 μF	0.013 %			



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	Capacitance,	[10 pF – 52 pF]	2.07 %	MetCal	LCR Meter
232	A	P;T	Capacitors	[52 pF – 150 pF]	0.66 %	Automated	Tonghui TH2829A
233	A	P;T		[150 pF – 257 pF]	0.25 %	Calibration Software	
234	A	P;T		[257 pF – 500 pF]	0.1 %	Manufacturer instructions	
235	A	P;T		[0.5 nF – 10 μF]	0.05 %	WI-C100	
236	A	P;T		[10 μF – 50 μF]	0.1 %		
237	A	P;T		[50 μF – 1 mF]	0.25 %		
238	A	P	Phase angle, Measurement Phase angle meters	(0° to 90°) Frequency: [45 Hz to 65 Hz]	0.58°	Manufacturer Instructions	FLUKE 5520A FLUKE 5522A
239		P		Frequency: [65 Hz to 500 Hz] 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	0.21°	WI-C108	Electrical test Equipment CALIBRATOR
240	A	P;T	AC Power, Measurement Power Meters	[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
241	A	P;T	Power factor, Measurement Power Meters	[0– 1] Power: [1mW to 20 kW] Frequency: [45 Hz to 65Hz]	0.14	Manufacturer instruction WI-C108	
242	A	P;T	DC Power, Measurement Power Meters	[10 mW to 20 kW]	0.5 %		



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		
243	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
244	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
245	A	P,T		[20 Ω to 200 Ω]	1.2%		
246	A	P,T		[200 Ω to 2 kΩ]	1.2%		
247	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
248	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
249	A	P,T		5 MΩ to 2 GΩ	3.6 %		
250	A	P,T		2 G Ω to 10 GΩ	5.8 %		
251	A	P,T		10 GΩ to 1 TΩ	5.8 %		
252	A	P,T	Residual current AC Residual Current, Sensing Devices (RCD)	זרם חילופין שיורי (RCD) מכשירי חישה	(Up to 5 Sec.]		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			3.00 mA to 10.00 mA	2 mA/A	
254	A	P,T			10.1 mA to 100 mA	1.39 mA/A	
255	A	P,T			101 mA to 1 A	7.81 mA/A	
256	A	P,T			1.01 A to 3 A	34.8 mA/A	
257	A	P,T			(< 190 m Sec.]		
258	A	P,T			3 mA to 10mA	6 mA/A	
259	A	P,T			10.1 mA to 100 mA	6.5 mA/A	
259	A	P,T			101 mA to 1 A	5 mA/A	
259	A	P,T	1.01 A to 3A	5.6 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		
260	A	P,T	Residual current duration AC Loop Resistance	0.05 Ω	0.0075 Ω	MetCal Automated Calibration Software	TRANSMILLE 3200 Electrical Test Equipment Calibrator
261	A	P,T	Loop Testing Devices.	0.1 Ω	0.0079 Ω		
262	A	P,T		0.22 Ω	0.0087 Ω		
263	A	P,T		0.33 Ω	0.0097 Ω	Manufacturer instructions WI-C107	Electrical safety tester
264	A	P,T		0.5 Ω	0.011 Ω		
265	A	P,T		1 Ω	0.017 Ω		
266	A	P,T		5 Ω	0.067 Ω		
267	A	P,T		10 Ω	0.13 Ω		
268	A	P,T		100 Ω	1.3 Ω		
269	A	P,T		1 k Ω	13 Ω		
270	A	P,T	Auto Loop Resistance AC Auto Loop Resistance. Loop Testing devices.	1 Ω	0.06Ω	MetCal Automated Calibration Software Manufacturer instructions WI-C107	TRANSMILLE 3200 Electrical Test Equipment Calibrator Electrical safety tester
271	A	P,T	Earth Bond Resistance	0.05 Ω	0.0049 Ω		
272	A	P,T	Bond Resistance	0.1 Ω	0.0053 Ω		
273	A	P,T	PAT (Portable Appliance Tester)	0.22 Ω	0.0059 Ω		
274	A	P,T		0.33 Ω	0.0065 Ω		
275	A	P,T		0.5 Ω	0.0076 Ω		
276	A	P,T		1 Ω	0.010 Ω		
277	A	P,T		5 Ω	0.033 Ω		
278	A	P,T		10 Ω	0.062 Ω		
279	A	P,T		100 Ω	0.582 Ω		
280	A	P,T		1 k Ω	5.77 Ω		
281	A	P,T	Earth Bond Current Bond current,	100.0 mA	9.3 mA		
282	A	P,T		10.00 A	0.24 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		
283	A	P,T	PAT (Portable Appliance Tester)	30.00 A	0.59 A		
284	A	P,T	Insulation Resistance Resistance, התנגדות בידוד, מכשירי PAT (Portable Appliance Tester)	0 MΩ	0.0074 MΩ		
285	A	P,T		0.01 MΩ to 5 MΩ	3 %		
286	A	P,T		5MΩ to 2 GΩ	3.5 %		
287	A	P,T	Leakage Current, זליגת זרם להארקה	2.000 mA	0.038 mA	MetCal Automated Calibration Software	TRANSMILLE 3200 Electrical Test Equipment
288	A	P,T	PAT (Portable Appliance Tester) מכשירי PAT	4.700 mA	0.084 mA		
289	A	P,T		7.700 mA	0.136 mA	Manufacturer instructions	Calibrator
290	A	P,T	Flash Voltage מתח פריצת בידוד מכשירי PAT (Portable Appliance Tester)	Class 1 (1.5 kV) (1 kV to 1.8 kV]		WI-C107	Electrical safety tester
291	A	P,T		1000 V	57 V	WI-C100	
292	A	P,T		Class 2 (3 kV) (2 kV to 3 kV]			
	A	P,T		3000 V	151 V		
293	A	P,T	Flash Current זרם פריצת בידוד מכשירי PAT (Portable Appliance Tester)	(1 mA to 3 mA] 1.00 mA	0.06 mA		
294	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 %		
295	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
296	A	T		(5 kV to 35 kV] @ 50/60 Hz	0.3 % O.R		The voltage source will be provided by the customer



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		
297	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
298	A	P,T			2.00 mA	0.04 mA	
299	A	P,T			20.00 mA	0.16 mA	
300	A	P,T		1 kV DC	200 μA	1.7 μA	
301	A	P,T			2.00 mA	0.04 mA	
302	A	P,T			20.00 mA	0.16 mA	
303	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.	Manufacturer instructions WI-C107 SPELLMAN SL40P2000 HV Probe 80K-40 DMM VITREK 4700 Including HV probes	



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		
304	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
305	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)
306	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
307	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
308	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)
309	A	T		[0.1 Hz to 3 GHz]	1.4×10^{-5} (0.3 h)		With Internal Reference
310	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
311	A	T		[1 sec to 24 hr]	0.04 sec		שיטת צילום Casio HS-70W
312	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		
313	A	P;T	Oscilloscope Time markers function: Square wave, Pulse, Narrow Triangle	ציר אופקי במשקף תנודות [0.45 ns to 55 sec]	0.038 μ s/s	Software MetCal Software WI-C102	Wavetek 9500 Fluke 910R External reference input in the range 1 MHz to 20 MHz
314	A	P;T	Oscilloscope Amplitude Square Wave	ציר אנכי במשקף תנודות Input impedance 1 M Ω Peak to peak amplitude (40 μ V to 1 mV] (1 mV to 200 V]	10 mV/V + 10 μ V	MetCal Software WI-C102 WI-C105 WI-C106	Wavetek 9500 Fluke 910R External reference input in the range 1 MHz to 20 MHz
315	A	P;T		1 mV/V + 10 μ V			
316	A	P;T	Oscilloscope Amplitude Square Wave	ציר אנכי במשקף תנודות Input impedance 50 Ω Peak to peak amplitude (40 μ V to 1 mV pk-pk] (1 mV to 5 V pk-pk]	10 mV/V + 10 μ V	MetCal Software WI-C102 WI-C105 WI-C106	Wavetek 9500
317	A	P;T		1 mV/V + 10 μ V			
318	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
319	A	P;T	Oscilloscope Bandwidth:	רוחב סרט של משקף תנודות [0.1 Hz to 300 MHz]	0.23 db	MetCal Software WI-C102 WI-C105 WI-C106	Wavetek 9500
320	A	P;T		[300 MHz to 550 MHz]	0.23 db		
321	A	P;T		[550 MHz to 1.1GHz]	0.29 db		
322	A	P;T		[1.1 GHz to 3.2 GHz]	0.36 db		
323	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
324	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		
325	A	P;T			(550 MHz to 1.1 GHz]	4.9 %	WI-C105	50 kHz Ref
326	A	P;T			(1.1 GHz to 3.2 GHz]	6.0 %	WI-C106	
327	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			
328	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
329	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
330	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	FED-GG-0-635 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
331	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					כיוול – גדלים מכניים - צורה, זווית		
332	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 8152 P1,2 GGG-P-463-C BS 817 WI-C038 WI-C060	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)
333	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
334	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
335	A	P	Flatness, Parallels מקבילים, מישוריות	Up to 50*100*400 mm]	2 μm	DIN 6346 DIN 7151 WI-C048	גששי אורך
336	A	P	Parallelism, Parallels מקבילים, מקבילות	Up to 50*100*400 mm]	2 μm		
337	A	P	Perpendicularity, Square, blade type ניצבות, זוויתנים	Up to 300 mm] (300 mm to 500 mm]	3 μm 5 μm	DIN-875-1DIN 875-2 JIS B 7526 WI-C016	גששי אורך מד ניצבות
339	A	P	Parallelism Square, blade type מקבילות זוויתנים	Up to 300 mm] (300 mm to 500 mm]	3 μm 5 μm		גששי 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 - Form, Angle					כיוול – גדלים מכניים - צורה, זווית		
341	A	P	Flatness, מישוריות	Up to 300 mm]	3 μm		
342	A	P	Square, blade type זוויתנים	(300 mm to 500 mm]	5 μm		
343	A	P	Perpendicularity, Cylinder גליל ניצבות	Up to 600 mm]	2 μm	JIS B 7539	
344	A	P	Perpendicularity, ניצבות	Up to 100 mm]	3 μm	DIN 875-1	
345	A	P	Universal Box Angles אביזר דפינה אוניברסאלי	(100 mm to 300 mm]	5 μm	DIN 875-2DIN 876	
346	A	P		(300 mm to 600 mm]	8 μm		
347	A	P	Flatness, מישוריות	Up to 100 mm]	3 μm	DIN 875-1	
348	A	P	Universal Box Angles אביזר דפינה אוניברסאלי	(100 mm to 300 mm]	5 μm	DIN 875-2DIN 876	
349	A	P		(300 mm to 600 mm]	8 μm		
350	A	P	Parallelism מקבילות	Up to 100 mm]	3 μm	DIN 875-1	
351	A	P	Universal Box Angles אביזר דפינה אוניברסאלי	(100 mm to 300 mm]	5 μm	DIN 875-2 DIN 876	
352	A	P		(300 mm to 600 mm]	8 μm		
353	A	P	Squareness Right angle and box angle plate ברך, קוביה	Up to 600 mm]	[3 + 1 per 100 mm] μm	DIN 875-1 DIN 875-2 DIN 876 BS 5535 WI-C050	מד ניצבות
354	A	P	Parallelism Right angle and box angle plate ברך, קוביה	Up to 600 mm]	[1 + (1 per 100 mm)] μm	WI-C050	מד ניצבות
355	A	P	Perpendicularity Square master מד ניצבות	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		
356	A	P	Perpendicularity Vee blocks	פריזמות Up to 150 mm]	2.1 μm	BS 3731 JIS B 7540 WI-C021	Grade 00 גששי אורך גלייים
357	A	P	Flatness, Vee blocks	פריזמות Up to 150 mm]	2.1 μm	WI-C021	
358	A	P	Parallelism Vee blocks	פריזמות Up to 150 mm]	2.1 μm		
359	A	P	Angle Sines bars and tables	זווית סרגלים ושולחנות סינוס Up to 500 mm]	2 "	BS 3064 GGG-B 121b DIN 2273 WI-C025	Angle is estimated by measuring distance מקבילונים בלוק זוויתי
360	A	P	Angle Level	פלס ± 5 °	0.5 "	DIN 887 BS 958 WI-C022	מייצר זווית קטנות
361	A	P	Angle Clinometer	קלינומטר Up to 90 °]	10 "	DIN 887 BS 958 WI-C022	מייצר זווית קטנות
362	A	P	Angle Bevel protractor	מד זווית מתכווין up to 360 °)	3 ´	BS 1685WI-C017	בלוק זוויתי גששי אורך מד ניצבות
363	A	P;T	Rotational Speed Mechanical tachometer	מהירות סיבוב (סלי"ד) מד סלי"ד מכני [1 to 8000] RPM	0.01 %OR or 0.01 RPM Whichever is greater	Manufacturer instructions WI-C069	Counter מונה
364	A	P;T	Rotational Speed Optical tachometer	מהירות סיבוב (סלי"ד) מד סלי"ד אופטי [1 to 2500] RPM	0.02 % OR or 1 resolution Whichever is greater		Function generator מחולל אותות
365	A	P;T	Rotational Speed Optical tachometer	מהירות סיבוב (סלי"ד) מד סלי"ד אופטי [2500 to 99999] RPM	0.005 %O.R.		Function generator מחולל אותות
366	A	P;T	Radius gauge	מד רדיוס עלים [0.1mm to 100 mm]	0.03 %O.R. + 17 μm	Manufacturer instructions WI-C030	



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		
367	A	P;T	Angle measurement	מדידת זווית	[0 ° to 90 °]	0.12 °	Customer requirements WI-C081	
368	A	P;T			(90 ° to 180 °]	0.15 °		
369	A	P;T			(180 ° to 270 °]	0.19 °		
370	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			
371	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	
372	A	P;T			HRBW [10 to 100]			0.45 HRA 1.0 HRBW
373	A	P;T			HRC [10 to 70]			0.45 HRC
374	A	P;T			HREW [70 to 100]			0.7 HREW
375	A	P;T			HR15N [70 to 94]			0.5 HR15N
376	A	P;T			HR30N [42 to 86]			0.6 HR30N
377	A	P;T			HR45N [20 to 77]			0.5 HR45N
378	A	P;T			HR15TW [67 to 93]			0.7 HR15TW
379	A	P;T			HR30TW [29 to 82]			0.7 HR30TW
380	A	P;T			HR45TW [10 to 72]			1.0 HR45TW
381	A	P;T	Brinell hardness testing machine	מכשירים למדידת קשיות בשיטת ברינל	HBW 2.5 / 187.5	ASTM E10	Indirect verification השוואה לחומר יחוס סטנדרטי	
382	A	P;T	Vickers hardness testing machine	מכשירים למדידת קשיות בשיטת וויקס	(0.1 to 0.5) HV	ASTM E384	Indirect verification השוואה לחומר יחוס סטנדרטי	
383	A	P;T			(1 to 100) HV	1.5% HV 1.2% HV		ISO 6507-2



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						כיול – גדלים מכניים - מדי קושיות		
384	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 כיול 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
385	A	P			(0 to 100) Shore	0.4 Shore		
386	A	P			100 Shore	0.1 Shore		
Geometrical parameters								
387	A	P	Indenter extension	אורך החודרן	[0.1 to 5] mm	0.01 mm		
388	A	P	Indenter diameter	קוטר החודרן	[0.7 to 12] mm	0.01 mm		
389	A	P	Indenter angle	זווית החודרן	[29° to 36°]	0.05°		
390	A	P	Indenter Horn diameter/radius	קוטר/רדיוס חוד החודרן	[0.1 –11] mm	0.008 mm		
391	A	P	Presser foot Hole diameter	קוטר קדח הבסיס	[0.9 – 13] mm	0.01 mm		
392	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				
393	A	P	Gauge Blocks Comparator	מערכת כיול מקבילונים	Up to 100 mm	0.05µm	Euramet cg-2 WI-C042	Gauge blocks	
394	A	P	Length, Gauge Blocks (by Comparison)	אורך, מקבילונים	Class (see note)		DIN EN ISO 3650 BS 4311-1 NF E11-010 BS 888 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	
395	A	P			Up to 10 mm }	0.08 µm			0.10 µm
396	A	P			(10 mm to 25 mm]	0.10 µm			0.13 µm
397	A	P			Sizes: 30, 40, 50	0.12 µm			0.17 µm
398	A	P			Sizes : 60, 70, 75	0.15 µm			0.21 µm
399	A	P			Sizes : 80, 90, 100	0.18 µm			0.25 µm
400	A	P			Up to 0.4 in }	3 µin			4 µin
401	A	P			(0.4 to 1 in]	4 µin			5 µin
402	A	P			2 in	5 µin			7 µin
403	A	P	3 in	6 µin	8 µin				
404	A	P	4 in	7 µin	10 µin				
405	A	P	Length Gauge Block accessories	אורך, אביזרים מקבילונים	160 mm	2 µm	JIS B7506WI-C029	מכונת מדידה SIP / TRIMOS 305M	
406	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	



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		
407	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 לכיול זחונים, קצה מעוגל (כדי) Length bar Length in m
408	A	P	Length, Step Gauge	אורך, מקבילונים מדורגים Up to 600 mm]	$[0.1 + 2.5 \times \text{length in m}] \mu\text{m}$	נתוני יצרן WI-C019	Length bar Length in m
409	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-C002 WI-C076	Length bar Length in m
410	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
411	A	P		(25.4 mm to 100] mm	1.5 μm		
412	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 by comparison to gauge block in clamp calibration by comparison to standard plain ring provides lower uncertainties
413	A	P		(100 mm to 150 mm]	1.5 μm		
414	A	P		(150 mm to 220 mm]	2 μm		
415	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		
416	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	F-STD-H-28 ISO 228/1-2 ISO 1502	כיוול זווית השן מדיד הברגה זכר מקביל – ראה בטכנולוגיה כיוול – גדלים מכניים – צורה, זווית
417	A	P		(100 mm to 305 mm]	5 μm	ISO 2903/4 ISO 7/1,2,9	
418	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	BS 919/1,2,3 BS 849 BS 3409/1,2 BS 4377/2 BS EN 10226-1	
419	A	P	Pitch Diameter Screw Plug Gauges (taper)	מדיד הברגה זכר - קוני Plug Diameter Up to 100 mm]	3 μm	DIN 103/9 DIN 405-1	כיוול זווית השן מדיד הברגה זכר קוני – ראה בטכנולוגיה כיוול – גדלים מכניים – צורה, זווית
420	A	P		(100 mm to 305 mm]	5 μm	DIN 405-2 DIN 405-3	
421	A	P	Pitch Screw Plug Gauges (taper)	פסיעת התבריג מדיד הברגה זכר קוני Plug Diameter Up to 305 mm]	1.5 μm	DIN EN 10226-3 ASME B.1.2 B.N.A.e A-A-59158WI-C020	
422	A	P	Pitch Diameter Thread rings (parallel)	טבעות הברגה – מקבילה Ring diameter [1.2 mm to 3 mm]	Not relevant	F-STD-H 28 ISO 228/1-2	Go no go test by means of check plug
423	A	P		(3 mm to 100 mm]	4 μm	ISO 1502	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		(100 mm to 305 mm)	5 µm	ISO 2903/2904 BS 919/1,23 BS 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		
425	A	P	Micrometer External	מיקרומטר חיצוני	Up to 2000 mm]	Heads 2.0 µm Setting and extension rods: [1 + 5×length in m] µm	ISO 3611 DIN 863 ASME B89.1.13 JIS B 7502 WI-C006	מקבילונים מוטות אורך
426	A	T			Up to 600 mm]	Minimum 1.5 µm		
427	A	P,T	Micrometer Internal	מיקרומטר פנים	Up to 300 mm] extension rod to 1000 mm]	Heads 2.0 µm Setting and extension rods [1 + 5×length in m] µm Minimum 1.5 µm	DIN 863 ASME B89.1.13 WI-C026 WI-C027	טבעות חלקות מכונת מדידה
428	A	P;T	Micrometer Depth	מיקרומטר עומק	Up to 350 mm]	2.0 µm	DIN 863 ASME B89.1.13 WI-C007	מקבילונים
429	A	P	Micrometers (indicating digital and electronic)	מיקרומטר (כולל דיגיטלי)	Up to 2000 mm]	[1 + 5×length in m] µm Minimum 1.5 µm	ISO 3611 DIN 863 ASME B89.1.13 JIS B 7502 WI-C006	מקבילונים מוטות אורך
430	A	T			Up to 600 mm]	[1 + 5×length in m] µm Minimum 3.0 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 - Length					כיול – גדלים מכניים - אורך			
431	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
432	A	P			(50 mm to 250 mm)	5 μm		
433	A	P	Micrometer head	ראש מיקרומטר	Up to 50 mm]	2 μm	Manufacturer;s instructions WI-C006	
434	A	P	Height setting micrometer	מד גובה מיקרומטרי	Up to 300 mm]	Heads 1.0 μm between any two points. Stepped column 2.5 μm Overall performance 3.0 μm	ISO 7863 WI-C014	מקבילונים, מוטות אורך
435	A	P	Riser Block	בסיס הגבהה למד גובה מיקרומטרי	Up to 150 mm]	2.5 μm	WI-C005	
436	A	P			(150 to 300 mm)	5 μm		
437	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 JIS B 7507 WI-C001	מקבילונים, מוטות אורך, בודק זחונים
438	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 JIS B 7507 WI-C001	מקבילונים, מוטות אורך, בודק זחונים
439	A	P	Micrometer Heads Dial testers	מערכת כיול חוגנים	Up to 100 mm	0.2 μm	WI-C028	Gauge blocks
440	A	P;T	Height Gauge Electronic microprocessor Controlled height Gauge	מד גובה	Up to 1000 mm]	[1 + 5× length in m] μm	ISO 13225JIS B 7517 WI-C005	
441	A	P;T	Dial Indicator	חיוג	Up to 3 mm]	0.3 μm	DIN 878	בודק חוגנים מכונת מדידה



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		
442	A	P;T	Length gauge	גשש אורך (3-60] mm	1 μm	DIN 879	
443	A	P;T		(60-100] mm	1.5 μm	JIS B 7503 JIS B 7509 JIS B 7536 ANSI B89.1.10M NF E 11-056 ISO 13102 ISO 463 WI-C003 WI-C033 WI-C053	
444	A	P;T	Lever type dial indicator Lever type gauge	חוגן מנופי גשש מנופי Up to 3 mm]	0.3 μm	BS 2795 PT.1 DIN 2270 ANSI B.89.1.10.M JIS B 7533 JIS B 7536 ISO 9493 ISO 13102 WI-C004	בודק חוגנים
445	A	P;T	Thickness gauge	מד עובי Up to 50 mm	2 μm	Manufacturer Instructions WI-C037	מקבילוני אורך Gauge blocks
446	A	P;T	Dial caliper gage (external type)	מד עובי זרועות Up to 150 mm	10 μm	Manufacturer Instructions WI-C037	מקבילוני אורך Gauge blocks
447	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



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		
448	A	P;T	Elcometer מד עובי ציפוי	[22 µm to 2000 µm]	2 µm	Manufacturer Instructions WI-C049	
449	A	P	Feeler/Thread Gauge מד מרווח/מסרק עלים	Up to 1 mm]	4 µm	DIN 2275 WI-C032 WI-C054	מיקרומטר
450	A	P;T	Measuring microscope מיקרוסקופ מדידה	Up to 500 mm	[2 + (25/M)] µm	נתוני יצרן JIS B 7153 WI-C034	סרגל אופטי M is total magnification
451	A	P;T	Profile projectors מטול פרופילים	Up to 500 mm	[2 + (25/M)] µm	נתוני יצרן JIS B 7184 WI-C034	סרגל אופטי M is total magnification
452	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
453	A	P	Bore comparators Cylinder gauge פין מפציל	[1 mm to 50 mm]	2 µm	נתוני יצרן CID A-A-58070 WI-C011	
454	A	P	Optical scale סרגל אופטי	Up to 1 mm]	0.5 µm	JIS B 7541 Manufacturer Instructions WI-C039	מכונת מדידה TRIMOS/ SIP 305M
455	A	P		(1 mm – 300 mm)	1 µm		
456	A	P	Tape and ruler measuring system כייל סרגלי וסרטי מדידה	Up to 1000 mm]	8 µm	Manufacturer Instructions WI-C085	סרגל אופטי מוטות אורך
457	A	P		(1000 mm – 2000 mm]	15 µm		
458	A	P	Measuring rule סרגל מדידה	Up to 2000] mm	42 µm	DIN 866, JIS-B 7516	מיקרוסקופ מדידה



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		
						Manufacturer Instructions WI-C078	כייל סרגלי וסרטי מדידה Measuring microscope Scale and Tape Calibration Unit.
459	A	P	Measuring tape סרט מדידה	Up to 50] m	$42 \cdot \sqrt{(n/2)} \mu\text{m}$	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
460	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
461	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
462	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	
463	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.
464	A	P		(0.2 mm to 1 mm]	0.005 mm		
465	A	P		(1 mm to 5 mm]	0.010 mm		
466	A	P		(5 mm to 15 mm]	0.020 mm		
467	A	P		(15 mm to 30 mm]	0.050 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			
468	A	P		(Above 30 mm)	0.10 mm			
469	A	P:T	Extensometer	מד התארכות	[0.01 mm to 50 mm]	ASTM E83 BS ISO 5893 +A1 ISO 9513 ISO 5893 WI-C075	Extensometer calibrator	
470	A	P:T	Extensometer (displacement)	מד התארכות	[0.01 mm to 1000 mm]	Manufacturer Instructions WI-C075	High precision dial gauge, Length gauge	
471	A	P:T	Length measurements	מדידת אורך	Up to 125 mm]	Customer requirements WI-C081		
472	A	P:T			(125 mm to 200 mm]			0.005 mm
473	A	P:T			(200 mm to 600 mm]			0.007 mm
474	A	P:T			(600 mm to 2000 mm]			0.05 mm
475	A	P:T			(2 m to 10 m]			4.6 mm
476	A	P:T			(10 m to 30 m]			6.8 mm
477	A	P	Laser distance meter	מד טווח לייזר	Up to 2 m	ISO 16331-1		
478	A	P			(2 m to 10 m]	2 mm	Manufacturer Instructions	
479	A	P			(10 m to 30 m]	2.5 mm	WI-C083	



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		
480	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
481	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	
482	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	
483	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	
484	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
485	A	P,T	Beam profiler Uniformity	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	
486	A	P,T	Linearity	לינאריות	3 nW to 150 W at 193 nm to 10600 nm	0.8 % O.R.		
487	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			
488	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°
489	A	P,T			(500 GU to 2200 GU)	20 GU + 0.5 % O.R.		
490	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°
491	A	P,T			(500 GU to 2200 GU)	20 GU + 0.5 % O.R.		
492	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	
493	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 WI-C201	Calibration can be given in other units as required.
494	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.		



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		
495	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	מתמר כח Force load cell Calibration can be given in other units as required. 1 N/kN = 0.1%
496	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	
497	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
498	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	
499	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)	0.15 %O.R. or 0.6res. whichever is greater	משקולות res - resolution
500	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	מתמר כח Force load cell Calibration can be given in other units as required. 1 N/kN = 0.1%
501	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	
502	A	P;T	Force calibration in compression, Force gauge Force system	כיוול כח בלחיצה, מד כוח מערכת כוח	(1 MN to 2.3 MN)	2.4 N/kN of verification force	
503	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)	0.15 %O.R. or 0.6res. whichever is greater	משקולות res - resolution
504	A	P	Force calibration in tension and compression, Proving devices	כיוול כח בלחיצה ומתיחה	[0.005 N to 1.2 kN]	0.15 %O.R. or 0.6res. whichever is greater	משקולות, מתמר כח res - resolution
505	A	P	Force calibration in tension and compression, Proving devices	תאי (טבעות) כוח	[1 kN to 20 kN]	0.7 N/kN of verification force	



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		
506	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	
507	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	
508	A	P	Torque Torque wrenches and drivers	מומנט ידיית מומנט, מברגת מומנט	[0.01 Nm to 1000 Nm]	0.5 % OR	מתמרי מומנט קורות כיוול ומשקולות Calibration can be given in other units as required
509	A	P,T	Torque	מומנט	[0.001 Nm to 0.01 Nm]	0.25 % OR	
510	A	P	Mechanical and Electronic torque calibration equipment	מכשירים למדידת מומנט (מכאניים ואלקטרוניים)	[0.01 Nm to 1000 Nm]	0.1 % OR	OR – Of Reading
511	A	P	Torque	מומנט	[0.001 Nm to 0.01 Nm]	0.4 % 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.
512	A	T	Mechanical and Electronic torque calibration equipment	מכשירים למדידת מומנט (מכאניים ואלקטרוניים)	[0.01 Nm to 500 Nm]	0.15 % OR	
513	A	T					



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			
514	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.	
515	A	P	RH data loggers	(25 %rh to 65 %rh)	1.2 %rh			
516	A	P	RH probes	(65 %rh to 95 %rh)	1.6 %rh			
517	A	P	RH transducers	10 °C to 20 °C [5 %rh to 25 %rh]	0.8 %rh			
518	A	P		(25 %rh to 65 %rh)	1.0 %rh			
519	A	P		(65 %rh to 95 %rh)	1.3 %rh			
520	A	P		20 °C to 50 °C [5 %rh to 55 %rh]	0.8 %rh			
521	A	P	(55 %rh to 75 %rh)	1.0 %rh				
522	A	P	(75 %rh to 95 %rh)	1.3 %rh				
523	A	P	RH transducers	50 °C to 90 °C [5 %rh to 45 %rh]	0.6 %rh			
524	A	P		(45 %rh to 75 %rh)	0.8 %rh			
525	A	P		(75 %rh to 95 %rh)	1.0 %rh			
526	A	T	Relative humidity RH probes RH chambers RH meters	0 °C to 90 °C [5 %rh to 95 %rh]	2.0 %rh			Humidity sensors, Humidity and temperature controlled Calibrator
527	A	P;T	Relative humidity RH probes	23°C ± 2 °C 5% rh	0.3 % rh			Salt solutions in ampoules as humidity standards.
528	A	P;T		10% rh	0.4 % rh			
529	A	P;T		11.3% rh	0.4 % rh			
530	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		
531	A	P;T		50% rh	0.65 % rh		
532	A	P;T		75% rh	0.75 % rh		
533	A	P;T		80% rh	0.75 % rh		
534	A	P;T		95% rh	0.85 % rh		
535	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.
536	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		
537	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 National measurement system - GOOD PRACTICE GUIDE THE CALIBRATION OF FLOW METERS WI-C079	Reference and UUT connected in series 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)
538	A	P, T	Gas flowmeters	(0.1 L/min to 1 L/min)	0.4 % O.R. + 0.004 L/min		
539	A	P, T		(1 L/min to 5 L/min)	0.4 % O.R. + 0.02 L/min		
540	A	P, T		(5 L/min to 50 L/min)	0.4 % O.R. + 0.2 L/min		
541	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			
542	A	P	Mass	0.001 g	0.0008 mg	OIML R 111-1	מאזני השוואה Calibration can be given in other units as required. Intermediate value can be calibrated with an uncertainty interpolated from the next higher and lower values in the table.	
543	A	P	Weights	0.002 g	0.0009 mg	OIML R 52		
544	A	P		0.005 g	0.001 mg	ASTM-E-617		
545	A	P		0.01 g	0.0012 mg	WI-C045		
546	A	P		0.02 g	0.0014 mg			
547	A	P		0.05 g	0.0016 mg			
548	A	P		0.1 g	0.0023 mg			
549	A	P		0.2 g	0.003 mg			
550	A	P		0.5 g	0.0036 mg			
551	A	P		1 g	0.0046 mg			
552	A	P		2 g	0.0053 mg			
553	A	P		5 g	0.0068 mg			
554	A	P		10 g	0.017 mg			
555	A	P		20 g	0.018 mg			
556	A	P		50 g	0.021 mg			
557	A	P		100 g	0.033 mg			
558	A	P		200 g	0.049 mg			
559	A	P		500 g	0.23 mg			
560	A	P		1000 g	0.31 mg			
561	A	P		2000 g	0.47 mg			
562	A	P		5000 g	1.9 mg			
563	A	P		10000 g	3 mg			
564	A	P		20000 g	10 mg			
565	A	P		(20 kg to 60 kg]	21 mg			משקולות סטנדרטיות מעל 50 kg ניתן לכייל מדרגת M2 ומטה או מקביל.
566	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		
567	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	1. Uncertainties depend on the performance of the weighting machine under calibration. 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. OIML Class E1 weights can be provided on demand. 3. res - resolution
568	A	P;T		(10 mg to 100 mg]	2.6 μg + 0.6res		
569	A	P;T		(100 mg to 500 mg]	3.6 μg + 0.6res		
570	A	P;T		(500 mg to 2 g]	7.4 μg + 0.6res		
571	A	P;T		(2 g to 5 g]	8.9 μg + 0.6res		
572	A	P;T		(5 g to 10 g]	18 μg + 0.6res		
573	A	P;T		(10 g to 20 g]	24 μg + 0.6res		
574	A	P;T		(20 g to 50 g]	29 μg + 0.6res		
575	A	P;T		(50 g to 120 g]	0.65 μg/g + 0.6res		
576	A	P;T		(120 g to 620 g]	0.4 μg/g + 0.6res		
577	A	P;T		(620 g to 110 kg]	1.5 μg/g + 0.6res		
578	A	P;T		(110 kg to 550 kg]	24 μg/g + 0.6res		
579	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		
580	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%
581	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
582	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 Including differential pressure
583	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
584	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
585	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		
586	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
587	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	ISO 81060-2 Manufacturer instructions WI-C047
588	A	T	Hydraulic pressure (gauge) Pressure indicating instruments and gauges	לחץ הידראולי מדידי לחץ	[0.6 MPa to 70 MPa]	1.0 Pa/kPa	
589	A	P;T	Blood pressure meter	מד לחץ דם	[30 mmHg to 280 mmHg]	1 mmHg	BHS-IP2 CONTEC MS200



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			
590	A	P	Liquid in glass thermometers	תרמומטרים נוזל בזכוכית	[- 80 °C to – 30 °C]	0.15 °C	ISO 1770	אמבטיות כיוול
591	A	P			(- 30 °C to 0 °C)	0.1 °C	ISO 1771	תרמומטר אב PRT
592	A	P			(0 °C to 250 °C)	0.08 °C	ISO 386	
593	A	P			(250 °C to 550 °C)	0.5 °C	JIS 7411	
594	A	T			[-40 °C to 150 °C]	1.0 °C	JIS 7412	
595	A	T			(150 °C to 250 °C)	2.0 °C	JIS 7542 ASTM E563 ASTM E77 BS 593 BS 1704 Manufacturer instructions WI-C063	
596	A	P	Resistance thermometers	גששי טמפרטורה התנגדות	-196 °C	0.02 °C	ASTM-E-1137	Liquid nitrogen/ air or other gas/ Ethanol/Water/Salt/ Dry block
597	A	P	PRT		[- 90 °C to -80 °C)	0.2 °C	ASTM-E-644	
598	A	P	Measurement by comparison		[- 80 °C to 250 °C]	0.02 °C	IEC 751	PRT may calibrated with its indicator. The uncertainty will be dependent on the indicator performance.
599	A	P			(250 °C to 550 °C)	0.05 °C	IEC60751	
600	A	P			(550 °C to 661 °C)	0.3 °C	ITS-90 Manufacturer instructions WI-C065	כולל סעיף 10.3 מתוך נוהל משרד הבריאות מס' 126
601	A	P			0.01 °C	0.006 °C		Calibration of SPRT/PRT/Thermistors etc. מערכות למדידת טמפרטורה By WTP
602	A	T	PRT	גששי טמפרטורה התנגדות	-196 °C	0.1 °C		Liquid nitrogen/ air or other gas/ Ethanol/Water/Salt/ Dry block
603	A	T	Measurement by comparison		(- 196 °C to – 90 °C)	0.5 °C		
604	A	T			[- 90 °C to – 40 °C]	0.1 °C		PRT may calibrated with its indicator. The uncertainty



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		
605	A	T			[- 40 °C to 140 °C]	0.1 °C		will be dependent on the indicator performance.
606	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
607	A	T			(250 °C to 661 °C)	0.5 °C		
608	A	P	TC base metal	צמידים תרמיים מתכות בסיסיות	-196 °C	0.14 °C	ASTM-E-230	
609	A	P	Measurement by comparison		[- 90 °C to -80 °C)	0.2 °C	ASTM-E-220	
610	A	P			[- 80 °C to 250 °C]	0.14 °C	ITS-90	
611	A	P			(250 °C to 550 °C)	0.4 °C	Manufacturer instructions	
612	A	P			(550 °C to 1100 °C)	1 °C	WI-C065	
613	A	P			(1100°C to 1300 °C)	2.2 °C		
614	A	T			-196 °C	0.3 °C		
615	A	T			(- 196 °C to - 90 °C)	0.5 °C		
616	A	T			[- 90 °C to -40 °C]	0.2 °C		
617	A	T			[- 40 °C to 250 °C]	0.2 °C		
618	A	T			(250 °C to 550 °C)	0.5 °C		כולל סעיף 10.3 מתוך נוהל משרד הבריאות מס' 126 כולל סעיפים 3.3.1, 3.3.2, מתוך תקן ישראלי 1291
619	A	T			(550 °C to 1100 °C)	1.5 °C		
620	A	T			(1100 °C to 1300 °C)	2.3 °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		
621	A	P	TC noble metal	[0 °C to 250 °C]	0.14 °C	ASTM-E-230 ASTM-E-220 ITS-90 Manufacturer instructions WI-C065	TC may calibrated with its indicator. The uncertainty will be dependent on the indicator performance. Liquid nitrogen/ air or other gas/ Ethanol/ Dry block TC may calibrated with its indicator. The uncertainty will be dependent on the indicator performance.
622	A	P	Measurement by comparison	(250 °C to 550 °C)	0.4 °C		
623	A	P		(550 °C to 1100 °C)	1 °C		
624	A	P		(1100°C to 1300 °C)	1.6 °C		
625	A	T		[0 °C to 250 °C]	0.3 °C		
626	A	T		(250 °C to 550 °C)	0.5 °C		
627	A	T		(550 °C to 1100 °C)	1.5 °C		
628	A	T		(1100 °C to 1300 °C)	1.8 °C		
629	A	P;T	Temperature controlled chambers	[-196 °C to -90 °C)	0.8 °C	DKD-R-5-7 DIN 12880 Manufacturer instructions WI-C062	TC, PRT, Data logger
630	A	P;T	Furnaces, Freezers, Incubators, Autoclaves	[-90°C to -45 °C)	0.5 °C		
631	A	P;T	Including uniformity	[-45 °C to 70 °C)	0.25 °C		
632	A	P;T		[70 °C to 151 °C)	0.5 °C		
633	A	P;T		[151 °C to 300 °C)	0.7 °C		
634	A	P;T		(300 °C to 550 °C)	1 °C		
635	A	P;T		(550 °C to 1100 °C)	2.5 °C		
636	A	P;T		[1100 °C to 1300 °C)	3.5 °C		
637	A	P;T	Bathes	[-196 °C to 251 °C]	0.03 °C	Manufacturer instructions WI-C062	SPRT, PRT
638	A	P;T	Including uniformity	(251 °C to 550 °C)	0.09 °C		
639	A	P;T	Dry block calibrator	[-110 °C to 300 °C]	0.05 °C	EURAMET cg-13 Manufacturer instructions WI-C062	PRT
640	A	P;T		(300 °C to 550 °C)	0.2 °C		
641	A	P;T		(550°C to 661°C)	0.3 °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		
642	A	P;T		(661 °C to 1000 °C)	0.7 °C		
643	A	P;T		(1000 °C to 1300 °C)	2 °C		
644	A	P;T	Tube furnace	[300 °C to 661 °C]	0.2 °C	Manufacturer instructions	PRT,TC
645	A	P;T	Including uniformity	(661 °C to 1100 °C)	1.2 °C	WI-C062	
646	A	P;T		(1100 °C to 1300 °C)	2.5 °C		
647	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,
648	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
649	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	Calibration by means of electrical calibration,
650	A	P;T		500 °C to 1800 °C	0.3 °C	WI-C067 WI-C100	including cold junction compensation
651	A	T	Temperature, Infrared Thermometers,	טמפרטורה מדי טמפרטורת קרינה	[-20 °C to 30 °C]	ASTM E2847 Manufacturer instructions	IR Calibrator
652	A	P;T		[30 °C to 100 °C]	0.4 °C	WI-C080	כיוול מדי טמפרטורה ללא מגע בבית הלקוח יבוצעו אל מול גוף שחור שישופק על ידי הלקוח
653	A	P;T		(100 °C to 200 °C)	0.65 °C		
654	A	P;T		(200 °C to 350 °C)	1.0 °C		
655	A	P;T		(350 °C to 500 °C)	1.4 °C		
656	A	P;T		(500 °C to 750 °C)	3 °C		
657	A	P;T		(750 °C to 1000 °C)	3.5 °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			
658	A	P,T	Temperature	טמפרטורה	[-20 °C to 100 °C]	0.4 °C	ASTM E2847 Manufacturer instructions WI-C080	Radiometric calibration Thermometric calibration for black body sensor - according to sensor's type & scope
659	A	P,T	Black Body Calibration	כיוול גופים שחורים	(100 °C to 300 °C]	1.1 °C		
660	A	P,T			(300 °C to 500 °C]	1.9 °C		
661	A	P,T			(500 °C to 750 °C]	2.8 °C		
662	A	P,T			(750 °C to 1000 °C]	3.3 °C		
663	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 – כיוול מכשירים וולומטריים – נפחים קטנים עד 2 ליטר		
664	A	P	Liquid volume, Piston-operated volumetric apparatus	Nominal value נפח נוזלים כיוול מכשירים וולומטריים בהנע בוכנה Up to 1µl	0.030 µl	ISO 8655- Part 1,2,3,4,5,6 ISO/TR 20461 Manufacturer instructions WI-C074	מתקן נפח מופעל בוכנה POVA Intermediate volumes may be calibrated with uncertainty as for the higher volume value
665	A	P		2 µl	0.040 µl		
666	A	P		5 µl	0.050 µl		
667	A	P		10 µl	0.060 µl		
668	A	P		20 µl	0.080 µl		
669	A	P		50 µl	0.21 µl		
670	A	P		100 µl	0.27 µl		
671	A	P		200 µl	0.72 µl		
672	A	P		500 µl	1.3 µl		
673	A	P		1000 µl	1.8 µl		
674	A	P		2000 µl	5.4 µl		
675	A	P		5000 µl	9.6 µl		
676	A	P		10000 µl	15 µl		
677	A	P		20000 µl	20 µl		
678	A	P		25000 µl	25 µl		
679	A	P		50000 µl	35 µl		
680	A	P		100000 µl	50 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					כיוול – גדלים כימיים - מדי pH		
681	A	P;T	PH meters Calibration using standard solutions	מדי PH (ערך הגבה) כיוול בשוואה 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			
682	A	P;T	Conductivity meters Calibration using standard solutions	מדי מוליכות כיוול בהשוואה לתמיסות	[1 to 13,000] $\mu\text{s/cm}$	1% O.R.	ASTM D1225 ISO 7888 Manufacturer instructions WI-C087	Standard Solution
683	A	P;T	Conductivity meters Calibration by comparison to a conductivity meter	מדי מוליכות כיוול בהשוואה למד מוליכות	[0.1 to 13,000] $\mu\text{s/cm}$	1.5% O.R. or 0.1 $\mu\text{s/cm}$ whichever is greater	ASTM D1225 ISO 7888 Manufacturer instructions WI-C087	Calibration of conductivity meter adjacent to a reference meter which is calibrated using solutions and resistors
684	A	P	Conductivity meters Calibration by comparison to a known resistance	מדי מוליכות כיוול בהשוואה לנגדים	[0.05 to 5] $\mu\text{s/cm}$	1% O.R. or 0.05 $\mu\text{s/cm}$ whichever is greater	ASTM D1225 ISO 7888 Manufacturer instructions WI-C087	Calibration using resistors to establish linearity in comparison to measured values using solutions



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		
685	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
686	A	P			(5 m/s to 10 m/s]	0.3 m/s	EURAMET CG-24 ISO 16622	
687	A	P			(10 m/s to 30 m/s]	0.4 m/s	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	
688	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 (הצמדה / 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. 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*
689	A	P;T		50 µmol/mol	2 % O.R.		
690	A	P;T		100 µmol/mol	0.2 % O.R.		
691	A	P;T		[25 µmol/mol to 100 µmol/mol]	5 % O.R.		
692	A	P;T	Gas detector O2 (Oxygen)	גלאי גז O2 (חמצן)	12 %	2 % O.R.	
693	A	P;T		18 %	0.5 % O.R.		
694	A	P;T		20.9 %	0.25 % O.R.		
695	A	P;T		[12 % to 20.9 %]	5 % O.R.		
696	A	P;T	Gas detector CH4 (Methane)	גלאי גז CH4 (מתאן)	2.2 % (44 % LEL)	0.8 % O.R.	
697	A	P;T		2.5 % (50 % LEL)	1 % O.R.		
698	A	P;T	Gas detector C3H8 (Propane)	גלאי גז C3H8 (פרופאן)	62 % LEL	4 % O.R.	
699	A	P;T	Gas Detector C4H10 (Butane & N-Butane)	גלאי גז C4H10 (בוטאן ואן-בוטאן)	78 % LEL	4 % O.R.	
700	A	P;T	Gas Detector C4H8 (Iso Butane)	גלאי גז C4H8 (איזו-בוטאן)	62 % LEL	4 % O.R.	
701	A	P;T	Gas Detector C2H4 (Ethylene)	גלאי גז C2H4 (אתילן)	62 % LEL	4 % O.R.	
702	A	P;T	Gas Detector C2H6 (Ethane)	גלאי גז C2H6 (אתאן)	62 % LEL	4 % O.R.	
703	A	P;T	Gas Detector C2H6O (Ethanol)	גלאי גז C2H6O (אתאנול)	500 µmol/mol	2 % O.R.	
704	A	P;T	Gas detector H2S (Hydrogen sulfide)	גלאי גז H2S (מימן גופרי)	10 µmol/mol	1.4 % O.R.	
705	A	P;T			20 µmol/mol	1 % O.R.	
706	A	P;T			25 µmol/mol	2 % O.R.	
707	A	P;T			[10 µmol/mol to 25 µmol/mol]	5 % O.R.	
708	A	P;T	Gas detector NO (Nitrous oxide)	גלאי גז NO (חנקן חמצני)	200 µmol/mol	1 % O.R.	
709	A	P;T			1000 µmol/mol	2 % O.R.	
710	A	P;T			[200 µmol/mol to 1000 µmol/mol]	5 % 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		
711	A	P;T	Gas detector NO ₂ (Nitrous dioxide)	גלאי גז NO ₂ (חנקן דו-חמצני)	100 µmol/mol	2 % O.R.		
712	A	P;T	Gas detector SO ₂ (Sulfur dioxide)	גלאי גז SO ₂ (גופרית דו-חמצנית)	80 µmol/mol	0.6 % O.R.		
713	A	P;T			100 µmol/mol	0.3 % O.R.		
714					[80 µmol/mol to 100 µmol/mol]	5 % O.R.		
715	A	P;T	Gas detector CO ₂ (Carbon dioxide)	גלאי גז CO ₂ (פחמן דו-חמצני)	1 %	1 % O.R.		
716	A	P;T			4 %	0.6 % O.R.		
717	A	P;T			10 %	2 % O.R.		
718	A	P;T			[1 % to 10 %]	5 % O.R.		
719	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 %.