



ISO/IEC 17025:2017

מעבדות כיוול

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

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 European co-operation for Accreditation (EA).

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 02/06/2024

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Name and Address:

Organization name	QCC Hazorea Calibration Technologies (A.C.S) Ltd.
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E-mail (contact person)	sales@mba.co.il

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		
23	A	T		(32.99999 V to 329.999 V]	26 μV/V		
24	A	T		(329.9999 V to 1000 V]	26 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		
25	A	P;T	DC Current.	זרם ישר, מחוללים	0 μA	0.51 nA	MetCal	Datron 1281
26	A	P;T	Sources		[10 nA to 200 μA]	7.3 μA/A	Automated Calibration Software	Fluke 8508A
27	A	P;T			(200 μA to 2 mA]	8.1 μA/A		Fluke 8588A
28	A	P;T			(2 mA to 20 mA]	4.5 μA/A		
29	A	P;T			(20 mA to 200 mA]	11 μA/A	Manufacturer instructions WI-C100	
30	A	P;T			(200 mA to 2 A]	14 μA/A		
31	A	P;T			(2 A to 20 A]	48.7 μA/A		
32	A	P;T			(20 A to 500 A]	5 mA + 40 μA/A		
33	A	P;T			(500 A to 2000 A]	20 mA + 40 μA/A		TA1000 Fluke 5730A Fluke 8588A Fluke 5522A
34	A	P;T	DC Current,	זרם ישר, מכשירי מדידת זרם	0 μA	0.52 nA	MetCal	Fluke 5520A
35	A	P;T	Measuring Instruments		[2 nA to 220 μA]	8 μA/A	Automated Calibration Software	Fluke 5522A
36	A	P;T			(220 μA to 2.2 mA]	10 μA/A	Manufacturer instructions WI-C100	Fluke 5730A
37	A	P;T			(2.2 mA to 22 mA]	6 μA/A		Fluke 5725A
38	A	P;T			(22 mA to 220 mA]	14 μA/A		Current Coils
39	A	P;T			(220 mA to 2.2 A]	16 μA/A	WI-C101	
40	A	P;T			(2.2 A to 20 A]	480 μA/A		
41	A	P;T			(20 A to 500 A]	5 mA + 40 μA/A		TH0530A
42	A	P;T			(500 A to 2000 A]	20 mA + 40 μA/A		TA1000 Fluke 5730A Fluke 8588A Fluke 5522A



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		
43	A	P;T	DC Current, Current clamp	זרם ישר, צבת זרם	(1 A to 3000 A]	100 μA/A	WI-C101	TH0530A TA1000 Fluke 5730A Fluke 8588A Fluke 5522A
44	A	P;T	AC Voltage, Sources	מתח חילופין מחוללים מתח	(0.22 mV to 200 mV]		MetCal Automated Calibration Software Manufacturer instructions WI-C100	Datron 1281 FLUKE 8508A Fluke 8588A
					[1 Hz to 10 Hz]	46 μV/V		
45	A	P;T			(10 Hz to 100 Hz]	45 μV/V		
46	A	P;T			(100 Hz to 2 kHz]	57 μV/V		
47	A	P;T			(2 kHz to 10 kHz]	40 μV/V		
48	A	P;T			(10 kHz to 30 kHz]	41 μV/V		
49	A	P;T			(30 kHz to 1 MHz]	60 μV/V		
					(200 mV to 2 V]			
50	A	P;T			[1 Hz to 10 Hz]	26 μV/V		
51	A	P;T			(10 Hz to 40 Hz]	24 μV/V		
52	A	P;T			(40 Hz to 100 Hz]	20 μV/V		
53	A	P;T			(100 Hz to 2 kHz]	18 μV/V		
54	A	P;T			(2 kHz to 30 kHz]	20 μV/V		
55	A	P;T			(30 kHz to 100 kHz]	22 μV/V		
56	A	P;T			(100 kHz to 300 kHz]	140 μV/V		
57	A	P;T			(300 kHz to 1 MHz]	620 μV/V		
					(2 V to 20V]			
58	A	P;T	[1 Hz to 10 Hz]	38 μV/V				
59	A	P;T	(10 Hz to 40 Hz]	28 μV/V				
60	A	P;T	(40 Hz to 100 Hz]	21 μV/V				



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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		
61	A	P;T			(100 Hz to 2 kHz]	20 μV/V		
62	A	P;T			(2 kHz to 10 kHz]	22 μV/V		
63	A	P;T			(10 kHz to 30 kHz]	25 μV/V		
64	A	P;T			(30 kHz to 1 MHz]	192 μV/V		
					(20V to 200V]			
65	A	P;T			[1 Hz to 10 Hz]	38 μV/V		
66	A	P;T			(10 Hz to 40 Hz]	35 μV/V		
67	A	P;T			(40 Hz to 100 Hz]	36 μV/V		
68	A	P;T			(100 Hz to 2 kHz]	27 μV/V		
69	A	P;T			(2 kHz to 100 kHz]	33 μV/V		
70	A	P;T			(100 kHz to 1 MHz]	54 μV/V		
					(200 V to 1050 V]			
71	A	P;T			[1 Hz to 100 Hz]	51 μV/V		
72	A	P;T			(100 Hz to 1 kHz]	50 μV/V		
73	A	P;T			(1 kHz to 100 kHz]	40 μV/V		
74	A	P;T	AC Voltage. Measuring Instruments	מתח חילופין מכשירי מדידת מתח	(0.22 mV to 220 mV]		MetCal	Fluke 5520A
					[10Hz to 20 Hz]	56 μV/V	Automated Calibration Software Manufacturer instructions WI-C100	Fluke 5522A
75	A	P;T			(20 Hz to 40 Hz]	55 μV/V		FLUKE 5730A
76	A	P;T			(40 Hz to 1 kHz]	69 μV/V		
77	A	P;T			(1 kHz to 20 kHz]	50 μV/V		
78	A	P;T			(20 kHz to 50 kHz]	49 μV/V		
79	A	P;T			(50 kHz to 500 kHz]	72 μV/V		
80	A	P;T			(500 kHz to 1 MHz]	73 μV/V		



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Calibration – Electrical Quantities - DC and LF						כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
81	A	P;T			(220 mV to 2.2 V] [10Hz to 20 Hz]	31 μV/V		
82	A	P;T			(20 Hz to 40 Hz]	30 μV/V		
83	A	P;T			(40 Hz to 20 kHz]	24 μV/V		
84	A	P;T			(20 kHz to 100 kHz]	27 μV/V		
85	A	P;T			(100 kHz to 500 kHz]	168 μV/V		
86	A	P;T			(500 kHz to 1 MHz]	745 μV/V		
87	A	P;T			(2.2 V to 22 V] [10Hz to 20 Hz]	53 μV/V		
88	A	P;T			(20 Hz to 40 Hz]	34 μV/V		
89	A	P;T			(40 Hz to 50 kHz]	31 μV/V		
90	A	P;T			(50 kHz to 500 kHz]	230 μV/V		
91	A	P;T			(500 kHz to 1 MHz](22 V to 220 V]	750 μV/V		
92	A	P;T			[10Hz to 20 Hz]	46 μV/V		
93	A	P;T			(20 Hz to 40 Hz]	43 μV/V		
94	A	P;T			(40 Hz to 20 kHz]	39 μV/V		
95	A	P;T			(20 kHz to 100 kHz]	40 μV/V		
96	A	P;T			(100 kHz to 1 MHz]	65 μV/V		
97	A	P;T			(220 V to 1100 V] (15 Hz to 50 Hz]	79 μV/V		
98	A	P;T			(50 Hz to 1kHz]	51 μV/V		
99	A	P;T	AC Current Sources	זרם חילופין מחוללי זרם	Up to 200 μA] [1 Hz to 100 Hz]	67 μA/A	MetcalAutomated Calibration Software	Datron 1281
100	A	P;T			(100 Hz to 500 Hz]	60 μA/A	Manufacturer Instruction	Fluke 8508A
101	A	P;T			(500 Hz to 1 kHz]	91 μA/A	WI-C100	Fluke 8588A
102	A	P;T			(1 kHz to 5 kHz]	150 μA/A		



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Calibration – Electrical Quantities - DC and LF						ביול – גדלים חשמליים - זרם ישר ותדר נמוך		
103	A	P;T			(5 kHz to 10 kHz] (200 µA to 2 mA]	400 µA/A		
104	A	P;T			[1 Hz to 100 Hz]	72 µA/A		
105	A	P;T			(100 Hz to 1 kHz]	60 µA/A		
106	A	P;T			(1 kHz to 5 kHz]	80 µA/A		
107	A	P;T			(5 kHz to 100 kHz] (2 mA to 20 mA]	110 µA/A		
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] (20 mA to 200 mA]	73 µA/A		
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] (200 mA to 2 A]	51 µA/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] (2 A to 5 A]	220 µA/A		
122	A	P;T			(1 Hz to 50 Hz]	1.2 mA/A		
123	A	P;T			[50 Hz to 400 Hz]	0.25 mA + 150 µA/A		



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Calibration – Electrical Quantities - DC and LF						כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
124	A	P;T			(400 Hz to 2 kHz]	1.2 mA/A	WI-C101	TH0530A
125	A	P;T			(2 kHz to 10 kHz]	3.2 mA/A		TA1000
					(5 A to 20 A]			Fluke 5730A
126	A	P;T			(1 Hz to 50 Hz]	1.2 mA/A		Fluke 8588A
127	A	P;T			[50 Hz to 400 Hz]	1 mA + 150 µA/A		Fluke 5522A
128	A	P;T			(400 Hz to 2 kHz]	1.2 mA/A		
129	A	P;T			(2 kHz to 10 kHz]	3.2 mA/A		
					(20 A to 500 A]			
130	A	P;T			[50 Hz to 400 Hz]	25 mA + 150 µA/A		
					(500 A to 2000 A]			
131	A	P;T			[50 Hz to 400 Hz]	100 mA + 150 µA/A		
			AC Current Measuring Instruments	זרם חילופין מכשירי מדידה	(0.1 µA to 220 µA]		MetCal Automated Calibration Software Manufacturer instructions WI-C100	Fluke 5520A
132	A	P;T			[1 Hz to 100 Hz]	132 µA/A		Fluke 5522A
133	A	P;T			(100 Hz to 500 Hz]	87 µA/A		Fluke 5725A
134	A	P;T			(500 Hz to 1 kHz]	110 µA/A		Fluke 5730A
135	A	P;T			(1 kHz to 5 kHz]	161 µA/A		Current Coils
136	A	P;T			(5 kHz to 10 kHz]	415 µA/A		
137	A	P;T			(220 µA to 2.2 mA]			
					[1 Hz to 100 Hz]	93 µA/A		
138	A	P;T			(100 Hz to 500 Hz]	85 µA/A		
139	A	P;T			(500 Hz to 1 kHz]	84 µA/A		
140	A	P;T			(1 kHz to 5 kHz]	99 µA/A		
141	A	P;T			(5 kHz to 10 kHz]	610 µA/A		
					(2.2 mA to 22 mA]			
142	A	P;T			[1 Hz to 100 Hz]	110 µA/A		
143	A	P;T			(100 Hz to 500 Hz]	71 µA/A		



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Calibration – Electrical Quantities - DC and LF						כיוול – גדלים חשמליים - זרם ישר ותדר נמוך		
144	A	P;T			(500 Hz to 1 kHz]	76 μA/A		
145	A	P;T			(1 kHz to 5 kHz]	150 μA/A		
146	A	P;T			(5 kHz to 10 kHz]	110 μA/A		
					(22 mA to 220 mA]			
147	A	P;T			[1 Hz to 100 Hz]	110 μA/A		
148	A	P;T			(100 Hz to 500 Hz]	65 μA/A		
149	A	P;T			(500 Hz to 1 kHz]	73 μA/A		
150	A	P;T			(1 kHz to 5 kHz]	75 μA/A		
151	A	P;T			(5 kHz to 10 kHz]	135 μA/A		
					(220 mA to 2 A]			
152	A	P;T			[1 Hz to 100 Hz]	270 μA/A		
153	A	P;T			(100 Hz to 500 Hz]	170 μA/A		
154	A	P;T			(500 Hz to 1 kHz]	220 μA/A		
155	A	P;T			(1 kHz to 5 kHz]	150 μA/A		
156	A	P;T			(5 kHz to 10 kHz]	450 μA/A		
157	A	P;T			(2 A to 5 A]			
					[1 Hz to 50 Hz]	560 μA/A		
158	A	P;T			[50 Hz to 400 Hz]	0.25 mA + 150 μA/A		
159	A	P;T			(400 Hz to 1 kHz]	560 μA/A		
160	A	P;T			(1 kHz to 5 kHz]	1.2 mA/A		
161	A	P;T			(5 kHz to 10 kHz]	4.3 mA/A		
					(5 A to 20 A]			
162	A	P;T			[50 Hz to 400 Hz]	1 mA + 150 μA/A		
163	A	P;T			(400 Hz to 1 kHz]	7.6 mA/A		
164	A	P;T			(1 kHz to 5 kHz]	41 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		
165	A	P;T			(20 A to 500 A] [50 Hz to 400 Hz]	25 mA + 150 μA/A		
166	A	P			(500 A to 720 A] [50 Hz to 400 Hz]	100 mA + 150 μA/A		
167	A	T			(500 A to 2000 A] [50 Hz to 400 Hz]	100 mA + 150 μA/A		
168	A	P,T	AC Current, Current clamp	זרם חילופין, צבת זרם	(1 A to 3000 A]	1300 μA/A	WI-C101	TH0530A TA1000 Fluke 5730A Fluke 8588A Fluke 5522A
169	A	P;T	DC Resistance, Shunts	התנגדות זרם ישר, מיצד זרם	[0.0001Ω÷0.5 Ω] (2 A to 5 A]	10 μ Ω / 5 Ω + 50 μ Ω / Ω	Manufacturer instructions WI-C100 WI-C101	Low currents Fluke 5730A Fluke 5725A Fluke 8508A Fluke 8588A
170	A	P;T			(5 A to 20 A]	10 μ Ω / 20 Ω + 50 μ Ω / Ω		High currents
171	A	P;T			(20 A to 500 A]	10 μ Ω / 500 Ω + 50 μ Ω / Ω		Std. Shunt
172	A	P			(500 A to 600 A]	10 μ Ω / 2000 Ω + 50 μ Ω / Ω		7.5 digit DMM
173	A	T			(500 A to 2000 A]	10 μ Ω / 2000 Ω + 50 μ Ω / Ω		TH0530A TA1000
174	A	P	DC Resistance, Sources	התנגדות זרם ישר, מחוללים	0 Ω (0 Ω to 2 Ω]	1.6 μΩ 4 μΩ/Ω	MetCal	Datron 1281 FLUKE 8508A
175	A	P			(2 Ω to 20 Ω]	4.1 μΩ/Ω	Automated Calibration Software	Fluke 8588A
176	A	P			(20 Ω to 200 Ω]	3.9 μΩ/Ω	Manufacturer instructions	
177	A	P			(200 Ω to 2 kΩ]	5 μΩ/Ω	WI-C100	
178	A	P			(2 kΩ to 20 kΩ]	4.1 μΩ/Ω		
179	A	P						



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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						ביול – גדלים חשמליים - זרם ישר ותדר נמוך		
180	A	P			(20 kΩ to 200 kΩ]	3.4 μΩ/Ω		
181	A	P			(200 kΩ to 2 MΩ]	8.5 μΩ/Ω		
182	A	P			(2 MΩ to 20 MΩ]	19 μΩ/Ω		
183	A	P			(20 MΩ to 200 MΩ]	140 μΩ/Ω		
184	A	P			(200 MΩ to 2 GΩ]	190 μΩ/Ω		
185	A	P			(2 GΩ to 20 GΩ]	120 μΩ/Ω		
186	A	T			0 Ω	4 μΩ		
187	A	T			(0 Ω to 2 Ω]	17 μΩ/Ω		
188	A	T			(2 Ω to 20 Ω]	9 μΩ/Ω		
189	A	T			(20 Ω to 200 Ω]	8.98 μΩ/Ω		
190	A	T			(200 Ω to 2 kΩ]	9.29 μΩ/Ω		
191	A	T			(2 kΩ to 20 kΩ]	9.22 μΩ/Ω		
192	A	T			(20 kΩ to 200 kΩ]	9.41 μΩ/Ω		
193	A	T			(200 kΩ to 2 MΩ]	11.5 μΩ/Ω		
194	A	T			(2 MΩ to 20 MΩ]	313 μΩ/Ω		
195	A	T			(20 MΩ to 200 MΩ]	6.9 mΩ/Ω		
196	A	T			(200 MΩ to 2 GΩ]	0.18%		
197	A	T			(2 GΩ to 100 GΩ]	0.18%		
198	A	P	DC Resistance, Measuring Instruments	התנגדות זרם ישר, מכשירי מדידה	0 Ω	3.6 μΩ	MetCal	FLUKE 5730A
199	A	P			1 Ω	4.3 μΩ/Ω	Automated Calibration Software	
200	A	P			1.9 Ω	4.3 μΩ/Ω	Manufacturer instructions	
201	A	P			10 Ω	4.4 μΩ/Ω	WI-C100	
202	A	P			19 Ω	4.4 μΩ/Ω	WI-C101	
203	A	P			100 Ω	4.2 μΩ/Ω		
204	A	P			190 Ω	4.2 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		
205	A	P			1 kΩ	5.4 μΩ/Ω		
206	A	P			1.9 kΩ	5.4 μΩ/Ω		
207	A	P			10 kΩ	4.4 μΩ/Ω		
208	A	P			19 kΩ	4.4 μΩ/Ω		
209	A	P			100 kΩ	3.7 μΩ/Ω		
210	A	P			190 kΩ	3.7 μΩ/Ω		
211	A	P			1 MΩ	9.1 μΩ/Ω		
212	A	P			1.9 MΩ	9.1 μΩ/Ω		
213	A	P			10 MΩ	20 μΩ/Ω		
214	A	P			19 MΩ	20 μΩ/Ω		
215	A	P			100 MΩ	150 μΩ/Ω		
216	A	P;T			0 Ω	3.6 μΩ	MetCal Automated Calibration Software Manufacturer instructions WI-C100 WI-C101	Fluke5522A Fluke5520A Fluke5730A
217	A	P;T			(1 μΩ to 10 Ω]	21 μΩ/Ω		
218	A	P;T			(10 Ω to 100 Ω]	9 μΩ/Ω		
219	A	P;T			(100 Ω to 10 kΩ]	20 μΩ/Ω		
220	A	P;T			(10 kΩ to 100 kΩ]	8 μΩ/Ω		
221	A	P;T			(100 kΩ to 1 MΩ]	6 μΩ/Ω		
222	A	P;T			(1 MΩ to 10 MΩ]	30 μΩ/Ω		
223	A	P;T			(10 MΩ to 100 MΩ]	199 μΩ/Ω		
224	A	P;T			(100 MΩ to 1 GΩ]	517 μΩ/Ω		
225	A	P;T			(10 GΩ to 100 GΩ]	8.4 mΩ/Ω		
226	A	P;T	AC Resistance, Shunts	התנגדות זרם חליפין, מיצד זרם	(1 A to 100 A] (50 Hz to 400 Hz]	25 mA + 150 μA/A	WI-C101	TH0530A TA1000 Fluke 5730A Fluke 8588A Fluke 5522A



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		
227	A	P;T	Air Standard Resistors	נגדי אוויר סטנדרטיים	1 Ω	4.5 μΩ/Ω	Manufacturer instructions WI-C100 WI-C101	Standard resistors
228	A	P;T			10 Ω	6 μΩ/Ω		
229	A	P;T			100 Ω	6 μΩ/Ω		
230	A	P;T			1 kΩ	6 μΩ/Ω		
231	A	P;T			10 kΩ	1 μΩ/Ω		
232	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
233	A	P;T	Capacitance, Measuring Instruments	קיבול מכשירי מדידה	[100 pF to 1.1uF)	0.5 %	MetCal Automated Calibration Software Manufacturer instructions WI-C100	FLUKE 5520A FLUKE 5522A Standard capacitors and Decade
234	A	P;T			[1.1 μF to 11 μF)	0.34 %		
235	A	P;T			[11 μF to 33 μF)	0.49 %		
236	A	P;T			[33 μF to 1 mF]	0.54 %		
237	A	P;T			0.001 μF	0.02 %		
238	A	P;T			0.005 μF	0.024 %		
239	A	P;T			0.01 μF	0.013 %		
240	A	P;T			0.05 μF	0.024 %		
241	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		
242	A	P;T	Capacitance,	קיבול, [100 pF to 1 nF]	0.3 %	MetCal	Fluke 8588A
243	A	P;T	Capacitors	קבלים [1 nF to 10 nF]	0.1 %	Automated	LCR Meter
244	A	P;T		[10 nF to 100 nF]	0.06 %	Calibration Software	Tonghui TH2829A
245	A	P;T		[100 nF to 10 μ F]	0.05 %	Manufacturer instructions	
246	A	P;T		[10 μ F to 1 mF]	0.07 %	WI-C100	
247	A	P;T		[1 mF to 10 mF]	0.08 %		
248	A	P;T		[10 mF to 100 mF]	0.11 %		
249	A	P	Phase angle, Measurement	זווית מופע (0° to 90°)	0.58°	Manufacturer Instructions WI-C108	FLUKE 5520AFLUKE 5522A Electrical test Equipment CALIBRATOR
250	P		Phase angle meters	מכשירי מדידה מדי זווית מופע Frequency: [45 Hz to 65 Hz] 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°		
251	A	P,T	AC Power, Measurement	הספק מתח חילופין [1mW to 20 kW] מדי הספק Power factor: [0– 1] Frequency: [45 Hz to 65Hz]	3.5 %	MetCal Automated Calibration Software	Fluke 5520A Fluke 5522A Electrical Test Equipment calibrator
252	A	P,T	Power factor, Measurement	מקדם הספק [0– 1] מדידה מדי הספק Power: [1mW to 20 kW] Frequency: [45 Hz to 65Hz]	0.14	Manufacturer instruction WI-C108	
253	A	P,T	DC Power, Measurement	הספק מתח ישר [10 mW to 20 kW] מדי הספק	0.5 %		



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Calibration – Electrical Quantities - DC and LF						כיוול – גדלים חשמליים - זרם ישר ותדר נמוך			
254	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	
255	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 Calibrator HV Probe 80K-40 DMM Electrical safety tester	
256	A	P,T			[20 Ω to 200 Ω)	1.2%			
257	A	P,T			[200 Ω to 2 kΩ]	1.2%			
258	A	P,T	Continuity current Current measuring instruments	זרם רציפות מכשירי מדידת זרם	(0 mA to 320 mA]	4%			
259	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	
260	A	P,T			5 MΩ to 2 GΩ	3.6 %			
261	A	P,T			2 G Ω to 10 GΩ	5.8 %			
262	A	P,T			10 GΩ to 1 TΩ	5.8 %			
263	A	P,T	Residual current AC Residual Current, Sensing Devices (RCD)	זרם חילופין שיוירי (מכשירי חישה (RCD)	(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	
264	A	P,T			10.1 mA to 100 mA	1.39 mA/A			
265	A	P,T			101 mA to 1 A	7.81 mA/A			
266	A	P,T			1.01 A to 3 A	34.8 mA/A			
267	A	P,T			(< 190 m Sec.] 3 mA to 10mA	6 mA/A			
268	A	P,T				10.1 mA to 100 mA			6.5 mA/A
269	A	P,T				101 mA to 1 A			5 mA/A
270	A	P,T				1.01 A to 3A			5.6 mA/A



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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		
271	A	P,T	Residual current duration	0.05 Ω	0.0075 Ω	MetCal	TRANSMILLE 3200
272	A	P,T	AC Loop Resistance	0.1 Ω	0.0079 Ω	Automated Calibration	Electrical Test
273	A	P,T	Loop Testing Devices.	0.22 Ω	0.0087 Ω	Software	Equipment
274	A	P,T		0.33 Ω	0.0097 Ω	Manufacturer instructions	Calibrator
275	A	P,T		0.5 Ω	0.011 Ω	WI-C107	Electrical safety tester
276	A	P,T		1 Ω	0.017 Ω		
277	A	P,T		5 Ω	0.067 Ω		
278	A	P,T		10 Ω	0.13 Ω		
279	A	P,T		100 Ω	1.3 Ω		
280	A	P,T		1 k Ω	13 Ω		
281	A	P,T	Auto Loop Resistance	1 Ω	0.06Ω	MetCal	TRANSMILLE 3200
			AC Auto Loop Resistance.			Automated Calibration	Electrical Test
			Loop Testing devices.			Software	Equipment
282	A	P,T	Earth Bond Resistance	0.05 Ω	0.0049 Ω	Manufacturer instructions	Calibrator
283	A	P,T	Bond Resistance	0.1 Ω	0.0053 Ω	WI-C107	Electrical safety tester
284	A	P,T	PAT (Portable Appliance	0.22 Ω	0.0059 Ω		
285	A	P,T	Tester)	0.33 Ω	0.0065 Ω		
286	A	P,T		0.5 Ω	0.0076 Ω		
287	A	P,T		1 Ω	0.010 Ω		
288	A	P,T		5 Ω	0.033 Ω		
289	A	P,T		10 Ω	0.062 Ω		
290	A	P,T		100 Ω	0.582 Ω		
291	A	P,T		1 k Ω	5.77 Ω		
292	A	P,T	Earth Bond Current	100.0 mA	9.3 mA		
293	A	P,T	Bond current,	10.00 A	0.24 A		
294	A	P,T	PAT (Portable Appliance	30.00 A	0.59 A		
			Tester)				



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		
295	A	P,T	Insulation Resistance	0 MΩ	0.0074 MΩ		
296	A	P,T	Resistance, PAT (Portable Appliance Tester)	0.01 MΩ to 5 MΩ	3 %		
297	A	P,T		5MΩ to 2 GΩ	3.5 %		
298	A	P,T	Leakage Current, PAT (Portable Appliance Tester)	2.000 mA	0.038 mA	MetCal Automated Calibration Software	TRANSMILLE 3200 Electrical Test Equipment
299	A	P,T		4.700 mA	0.084 mA	Manufacturer instructions	Calibrator
300	A	P,T		7.700 mA	0.136 mA		Electrical safety tester
301	A	P,T	Flash Voltage PAT (Portable Appliance Tester)	Class 1 (1.5 kV) (1 kV to 1.8 kV]	57 V	WI-C107	
302	A	P,T		1000 V	81 V	WI-C100	
303	A	P,T		Class 2 (3 kV) (2 kV to 3 kV]	151 V		
				3000 V			
304	A	P,T	Flash Current PAT (Portable Appliance Tester)	[1 mA to 3 mA]	0.06 mA		
				1.00 mA			
305	A	P,T	Line Voltage Measurement of line voltage	(200 V (rms)) to 260 V(rms)]	1.2 %		
306	A	P,T	Breakdown/Hipot Measurement & source of high voltage – AC voltage	(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
307	A	T		(5 kV to 35 kV] @ 50/60 Hz	0.3 %O.R		The voltage source will be provided by the customer
308	A	P,T	Measurement of current at high voltage	1 kV AC @ 50 Hz 200 μA	1.7 μA	Manufacturer instructions WI-C107	HV Probe 80K-40 DMM



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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		
309	A	P,T			2.00 mA	0.04 mA		TRANSMILLE 3200
310	A	P,T			20.00 mA	0.16 mA		
311	A	P,T			1 kV DC			
312	A	P,T			200 µA	1.7 µA		
313	A	P,T			2.00 mA	0.04 mA		
314	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		
315	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
316	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)
317	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
318	A	P	Frequency. Counters	תדר, מוני תדר	[0.1 Hz to 100 MHz]	4.8×10 ⁻⁹ (0.3 h)	WI-C102 WI-C105 WI-C106	With Ref. Locked to 910R
319	A	P			[100 MHz to 3 GHz]	4.8×10 ⁻¹⁰ (0.3 h)		With Ref. Locked to 910R (with 9500 + 9530)
320	A	T			[0.1 Hz to 3 GHz]	1.4×10 ⁻⁵ (0.3 h)		With Internal Reference
321	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
322	A	T			[1 sec to 24 hr]	0.04 sec		שיטת צילום Casio HS-70W
323	A	P;T			[1 sec to 24 hr]	0.001 sec		שיטת צילום H.P.5248 M H.P.52132 A



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Calibration – Electrical Quantities - RF Frequency, Time						כיוול – גדלים חשמליים - תדר גבוה, זמן		
324	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
325	A	P;T	Oscilloscope Amplitude Square Wave	ציר אנכי במשקף תנודות	Input impedance 1 MΩ Peak to peak amplitude (40 μV to 1 mV]	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
326	A	P;T			(1 mV to 200 V]	1 mV/V + 10 μV		
327	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]	10 mV/V + 10 μV	MetCal Software WI-C102 WI-C105 WI-C106	Wavetek 9500
328	A	P;T			(1 mV to 5 V pk-pk]	1 mV/V + 10 μV		
329	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
330	A	P;T	Oscilloscope	רוחב סרט של משקף תנודות	[0.1 Hz to 300 MHz]	0.23 db	MetCal Software WI-C102	Wavetek 9500
331	A	P;T	Bandwidth:		[300 MHz to 550 MHz]	0.23 db	WI-C105	
332	A	P;T			[550 MHz to 1.1GHz]	0.29 db	WI-C106	
333	A	P;T			[1.1 GHz to 3.2 GHz]	0.36 db		
334	A	P;T	Oscilloscope	מישוריות האות כתלות בתדר	[0.1 Hz to 300 MHz]	2.3 %	MetCal Software WI-C102	Wavetek 9500 Leveled Sine Wave
335	A	P;T	Flatness	ביחס לתדר הייחוס	(300 MHz to 550 MHz]	3.8 %		Amplitude



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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						גיוול – גדלים חשמליים - תדר גבוה, זמן		
336	A	P;T			(550 MHz to 1.1 GHz]	4.9 %	WI-C105 WI-C106	50 kHz Ref
337	A	P;T			(1.1 GHz to 3.2 GHz]	6.0 %		
338	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		
339	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	<i>M</i> is projector magnification and <i>P</i> is pitch in mm
340	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	<i>M</i> is projector magnification and <i>P</i> is pitch in mm
341	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
342	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		
343	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)
344	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	גשש אורך
345	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
346	A	P	Flatness, Parallels מקבילים, מישוריות	Up to 50*100*400 mm]	2 μm	DIN 6346 DIN 876 WI-C048	גששי אורך
347	A	P	Parallelism, Parallels מקבילים, מקבילות	Up to 50*100*400 mm]	2 μm	WI-C052	
348	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
349	A	P		(300 mm to 600 mm]	5 μm		
350	A	P	Parallelism Square, blade type מקבילות זוויתנים	Up to 300 mm]	3 μm		גששי אורך
351	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		
352	A	P	Flatness,	מישוריות	Up to 300 mm]	3 µm		
353	A	p	Square, blade type	זוויתיים	(300 mm to 600 mm]	5 µm		
354	A	P	Perpendicularity, Cylinder	גליל ניצבות	Up to 600 mm]	2 µm	JIS B 7539	
355	A	P	Perpendicularity,	ניצבות	Up to 100 mm]	3 µm	DIN 875-1	
356	A	p	Universal Box Angles	אבזור דפינה אוניברסאלי	(100 mm to 300 mm]	5 µm	DIN 875-2DIN 876	
357	A	P			(300 mm to 600 mm]	8 µm		
358	A	P	Flatness,	מישוריות	Up to 100 mm]	3 µm	DIN 875-1	
359	A	p	Universal Box Angles	אבזור דפינה אוניברסאלי	(100 mm to 300 mm]	5 µm	DIN 875-2DIN 876	
360	A	P			(300 mm to 600 mm]	8 µm		
361	A	P	Parallelism	מקבילות	Up to 100 mm]	3 µm	DIN 875-1	
362	A	p	Universal Box Angles	אבזור דפינה אוניברסאלי	(100 mm to 300 mm]	5 µm	DIN 875-2	
363	A	P			(300 mm to 600 mm]	8 µm	DIN 876	
364	A	P	Squareness Right angle and box angle plate	ברך, קובייה ניצבות	Up to 600 mm]	[3 + 1 per 100 mm] µm	DIN 875-1 DIN 875-2 DIN 876 BS 5535 WI-C050	מד ניצבות
365	A	P	Parallelism Right angle and box angle plate	ברך, קובייה מקבילות	Up to 600 mm]	[1 + (1 per 100 mm)] µm	WI-C050	מד ניצבות
366	A	P	Perpendicularity Square master	מד ניצבות 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		
367	A	P	Perpendicularity Vee blocks	פריזמות ניצבות	Up to 150 mm]	2.1 µm	BS 3731 JIS B 7540 DIN 2274 WI-C021	Grade 00 גששי אורך גליליים
368	A	P	Flatness, Vee blocks	פריזמות מישוריות	Up to 150 mm]	2.1 µm		
369	A	P	Parallelism Vee blocks	פריזמות מקבילות	Up to 150 mm]	2.1 µm		
370	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
371	A	P	Angle Level	פלס	± 5 °	0.5 "	DIN 887 BS 958 WI-C022	מייצר זוויות קטנות
372	A	P	Angle Clinometer	קלינומטר	Up to 90 °]	10 "	DIN 887 BS 958 DIN 2274 DIN 2276-1,2 WI-C022	מייצר זוויות קטנות שולחן סובב
373	A	P	Angle Bevel protractor	מד זווית מתכוון	up to 360 °	3 ´	BS 1685WI-C017	בלוק זוויתי גששי אורך מד ניצבות
374	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
375	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
376	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		
377	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 ודיוק אנקודר
378	A	P;T	Radius gauge	מד רדיוס עלים	[0.1mm to 100 mm]	0.03 %O.R. + 17 µm	Manufacturer instructions WI-C030	
379	A	P;T	Angle measurement	מדידת זווית	[0 ° to 90 °]	0.12 °	Customer requirements WI-C081	
380	A	P;T			(90 ° to 180 °]	0.15 °		
381	A	P;T			(180 ° to 270 °]	0.19 °		
382	A	P;T			(270 ° to 360 °]	0.23 °		



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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		
383	A	P;T	Rockwell hardness testing machine	מכשירים למדידת קשיות בשיטת רוקוול	HRA [20 to 95]	0.45 HRA	ASTM E18 ISO 6508-2 WI-C058	Indirect verification השוואה לחומר יחוס סטנדרטי
384	A	P;T			HRBW [10 to 100]	1.0 HRBW		
385	A	P;T			HRC [10 to 70]	0.45 HRC		
386	A	P;T			HRFW [69 to 97]	0.4 HRFW		
387	A	P;T			HREW [70 to 100]	0.7 HREW		
388	A	P;T			HR15N [70 to 94]	0.5 HR15N		
389	A	P;T			HR30N [42 to 86]	0.6 HR30N		
390	A	P;T			HR45N [20 to 77]	0.5 HR45N		
391	A	P;T			HR15TW [67 to 93]	0.7 HR15TW		
392	A	P;T			HR30TW [29 to 82]	0.7 HR30TW		
393	A	P;T			HR45TW [10 to 72]	1.0 HR45TW		
394	A	P;T	Brinell hardness testing machine	מכשירים למדידת קשיות בשיטת ברינל	HBW 2.5 / 187.5	2% HBW	ASTM E10 WI-C058	Indirect verification השוואה לחומר יחוס סטנדרטי
395	A	P;T			HBW 2.5 / 62.5	2% HBW		
396	A	P;T			HBW 2.5 / 31.25	2% HBW		
397	A	P;T	Vickers hardness testing machine	מכשירים למדידת קשיות בשיטת וויקס	(0.1 to 0.5) HV	1.5% HV	ASTM E384 ASTM E92 ISO 6507-2 WI-C058	Indirect verification השוואה לחומר יחוס סטנדרטי
398	A	P;T			(1 to 100) 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		
399	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
400	A	P			(0 to 100) Shore	0.4 Shore		
401	A	P			100 Shore	0.1 Shore		
402			Geometrical parameters					
403	A	P	Indenter extension	אורך החודרן	[0.1 to 5] mm	0.01 mm		
404	A	P	Indenter diameter	קוטר החודרן	[0.7 to 12] mm	0.01 mm		
405	A	P	Indenter angle	זווית החודרן	[29° to 36°]	0.05°		
406	A	P	Indenter Horn diameter/radius	קוטר/רדיוס חוד החודרן	[0.1 –11] mm	0.008 mm		
407	A	P	Presser foot Hole diameter	קוטר קדח הבסיס	[0.9 – 13] mm	0.01 mm		
408	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						כיוול – גדלים מכניים - אורך			
409	A	P	Gauge Blocks Comparator	מערכת כיוול מקבילונים	Up to 100 mm	0.05µm		Euramet cg-2 WI-C042	Gauge blocks
410	A	P	Length, Gauge Blocks (by Comparison)	אורך, מקבילונים	Up to 10 mm}	Class (see note) C D		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
411	A	P			(10 mm to 25 mm]	0.08 µm 0.10 µm	0.10 µm 0.13 µm		
412	A	P			Sizes: 30, 40, 50	0.12 µm	0.17 µm		
413	A	P			Sizes : 60, 70, 75	0.15 µm	0.21 µm		
414	A	P			Sizes : 80, 90, 100	0.18 µm	0.25 µm		
415	A	P			Up to 0.4 in}	3 µin	4 µin		
416	A	P			(0.4 to 1 in]	4 µin	5 µin		
417	A	P			2 in	5 µin	7 µin		
418	A	P			3 in	6 µin	8 µin		
419	A	P			4 in	7 µin	10 µin		
420	A	P	Length Gauge Block accessories	אורך, אביזרים מקבילונים	160 mm	2 µm		JIS B7506WI-C029	מכונת מדידה SIP / TRIMOS 305M
421	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 תקניים (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		
422	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 זחוניים, קצה מעוגל (כדי) Length bar Length in m
423	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
424	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
425 426	A A	P,T P	Length, Plain Plug Gauges	אורך, מדידי תקע חלק Up to 25.4] mm (25.4 mm to 100] mm	1 μm 1.5 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
427 428 429	A A A	P P P	Diameter Plain Rings	טבעות חלקות [1.75 mm to 100 mm] (100 mm to 150 mm] (150 mm to 220 mm]	0.4 μm 1.5 μm 2 μm	DIN 2250-1 DIN 7151-2 WI-C023	מכונת מדידה SIP / TRIMOS 305M calibration by comparison to standard plain ring provides lower uncertainties
430	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

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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		
431	A	P	Pitch Diameter	מדיד הברגה זכר – מקביל	Plug Diameter Up to 100 mm]	3 µm	F-STD-H-28	כיוול זווית השן מדיד הברגה זכר מקביל – ראה בטכנולוגיה כיוול – גדלים מכניים – צורה, זווית
	A	P	Screw Plug Gauges (parallel) including check and setting Plug		(100 mm to 305 mm]	5 µm	ISO 228/1-2 ISO 1502 ISO 2903/4 ISO 7/1,29	
433	A	P	Pitch	פסיעת התברג 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	
434	A	P	Pitch Diameter	מדיד הברגה זכר - קוני	Plug Diameter Up to 100 mm]	3 µm	DIN 103/9	כיוול זווית השן מדיד הברגה זכר קוני – ראה בטכנולוגיה כיוול – גדלים מכניים – צורה, זווית
435	A	P	Screw Plug Gauges (taper)		(100 mm to 305 mm]	5 µm	DIN 405-1 DIN 405-2	
436	A	P	Pitch	פסיעת התברג מדיד הברגה זכר קוני	Plug Diameter Up to 305 mm]	1.5 µm	DIN 405-3 DIN EN 10226-3 ASME B.1.2 B.N.A.e A-A-59158 WI-C020	
437	A	P	Pitch Diameter	טבעות הברגה – מקבילה	Ring diameter [1.2 mm to 3 mm]	Not relevant	F-STD-H 28	Go no go test by means of check plug מכונת מדידה SIP / TRIMOS 305M
438	A	P	Thread rings (parallel)		(3 mm to 100 mm]	4 µm	ISO 228/1-2 ISO 1502	



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		
439	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	
440	A	P	Standard sphere	כדור מדויק	(2 mm to 100 mm]	1 µm	WI-C091	מכונת מדידה
441	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
442	A	T			Up to 600 mm]	[1.2 + 5×length in m] µm		
443	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
444	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
445	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						כיוול – גדלים מכניים - אורך		
446	A	T			Up to 600 mm]	[1.2 + 5×length in m] μm	ASME B89.1.13 JIS B 7502 WI-C006	
447	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
448	A	P			(50 mm to 250 mm]	5 μm		
449	A	P	Micrometer head	ראש מיקרומטר	Up to 50 mm]	2 μm	Manufacturer;s instructions WI-C006	
450	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
451	A	P	Riser Block	בסיס הגבהה למד גובה מיקרומטרי	Up to 150 mm]	2.5 μm	WI-C005	
452	A	P			(150 to 300 mm]	5 μm		
453	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
454	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
455	A	P	Micrometer Heads Dial testers	מערכת כיוול חוגגים	Up to 100 mm	0.2 μm	WI-C028	Gauge blocks
456	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		
457	A	P;T	Dial Indicator	Up to 3 mm]	0.3 µm	DIN 878	בודק חוגנים
458	A	P;T	Length gauge	(3-60] mm	1 µm	DIN 879	מכונת מדידה
459	A	P;T		(60-100] mm	1.5 µm	JIS B 7503	
460	A	P;T		(100-300] mm	4 µm	JIS B 7509	
						JIS B 7536	
						ANSI B89.1.10M	
						NF E 11-056	
						ISO 13102	
						ISO 463	
						WI-C003	
						WI-C027	
						WI-C033	
						WI-C036	
						WI-C053	
461	A	P;T	Lever type dial indicator	Up to 3 mm]	0.3 µm	BS 2795 PT.1	בודק חוגנים
			Lever type gauge			DIN 2270	
						ANSI B.89.1.10.M	
						JIS B 7533	
						JIS B 7536	
						ISO 9493	
						ISO 13102	
						WI-C004	
462	A	P;T	Thickness gauge	Up to 50 mm	2 µm	Manufacturer	מקבילוני אורך
						Instructions	Gauge blocks
						WI-C037	
463	A	P;T	Dial caliper gage (external type)	Up to 150 mm	10 µm	Manufacturer	מקבילוני אורך
						Instructions	Gauge blocks
						WI-C037	

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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		
464	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
465	A	P;T	Elcometer	מד עובי ציפוי	[22 µm to 2000 µm]	2 µm	Manufacturer Instructions WI-C049	
466	A	P	Feeler/Thread Gauge	מד מרווח/מסרק עלים	Up to 1 mm]	4 µm	WI-C032 WI-C054	מיקרומטר
467	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
468	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
469	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
470	A	P	Bore comparators Cylinder gauge	פין מפציל	[1 mm to 50 mm]	2 µm	נתוני יצרן CID A-A-58070 WI-C011	
471	A	P	Optical scale	סרגל אופטי	Up to 1 mm]	0.5 µm	JIS B 7541 Manufacturer	מכונת מדידה TRIMOS/ SIP 305M
472	A	P			(1 mm – 300 mm)	1 µm	Instructions WI-C039	
473	A	P	Tape and ruler measuring system	כיוול סרגלי וסרטי מדידה	Up to 1000 mm]	8 µm	Manufacturer	סרגל אופטי מוטות אורך
474	A	P			(1000 mm – 2000 mm]	15 µm	Instructions WI-C085	
475	A	P	Measuring rule	סרגל מדידה	Up to 2000] mm	42 µm	DIN 866	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						כיוול – גדלים מכניים - אורך		
							JIS-B 7516 Manufacturer Instructions WI-C078	כיוול סרגלי וסרטי מדידה Measuring microscope Scale and Tape Calibration Unit.
476	A	P	Measuring tape	סרט מדידה	Up to 50] m	$42 \cdot \sqrt{(n/2)} \mu m$	OIML-R-35 BS 4484-1 DIN 866 JIS B 7516 Manufacturer Instructions WI-C043 WI-C064 WI-C078	כיוול סרגלי וסרטי מדידה Scale and Tape Calibration Unit. (n/2) rounded up to integer n in meters
477	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
478	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
479	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	
480	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.
481	A	P			(0.2 mm to 1 mm]	0.005 mm		
482	A	P			(1 mm to 5 mm]	0.010 mm		
483	A	P			(5 mm to 15 mm]	0.020 mm		
484	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						כיוול – גדלים מכניים - אורך		
485	A	P			(Above 30 mm	0.10 mm		
486	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
487	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
488	A	P;T	Length measurements	מידת אורך	Up to 125 mm]	0.003 mm	Customer requirements WI-C081	
489	A	P;T			(125 mm to 200 mm]	0.005 mm		
490	A	P;T			(200 mm to 600 mm]	0.007 mm		
491	A	P;T			(600 mm to 2000 mm]	0.05 mm		
492	A	P;T			(2 m to 10 m]	4.6 mm		
493	A	P;T			(10 m to 30 m]	6.8 mm		
494	A	P;T	Laser distance meter	מד טווח לייזר	Up to 50 mm	5 µm	ISO 16331-1 Manufacturer Instructions WI-C083	
495	A	P			(0.05 m to 0.5 m]	5 µm		
496	A	P			(0.5 m to 10 m]	0.74 mm		
497	A	P			(2 m to 10 m]	2 mm		
498	A	P			(10 m to 30 m]	2.5 mm		

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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		
499	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 μ W 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
500	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	
501	A	P,T	Light emitting devices and Meters מכשיר פולט אור ומד קרינה אופטית	Energy אנרגיה 20 μ J to 4 KJ at 193 to 10600 nm	5% of Reading	In house procedure Based on: IEC 60825 ISO 13694 WI-C203	
502	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	
503	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
504	A	P,T	Beam profiler מנתח קרן	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	
505	A	P,T	Uniformity אחידות	3 nW to 150 W at 193 nm to 10600 nm	0.8 %O.R.		
506	A	P,T	Linearity ליניאריות	Up to 300 mm	0.35 %O.R.		



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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		
507	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°
508	A	P,T			(500 GU to 2200 GU]	20 GU + 0.5 %O.R.		
509	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°
510	A	P,T			(500 GU to 2200 GU]	20 GU + 0.5 %O.R.		
511	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	
512	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.
513	A	P,T	Light emitting devices and Meters Luminance	מכשיר פולט אור ומד אור	Visible Light אור נראה 1.85 cd/m2 to 6000 cd/m2	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		
514	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%
515	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	
516	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
517	A	P;T			(1 MN to 2.3 MN]	2.4 N/kN of verification force		
518	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
519	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%
520	A	P;T	Force calibration in compression, Force gauge	כיוול כח בלחיצה, מד כוח מערכת כוח	[0.1 kN to 1 MN]	2.0 N/kN of verification force		
521	A	P;T	Force gauge Force system		(1 MN to 2.3 MN]	2.4 N/kN of verification force		
522	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
523	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
524	A	P		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		
525	A	P	Force calibration in compression,	כיוול כח בלחיצה	[20 kN to 1 MN]	1.0 N/kN of verification force	
526	A	P	Proving devices	תאי (טבעות) כוח	[1 MN to 2.3 MN]	2.0 N/kN of verification force	
527	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	
528	A	P,T	Torque Torque wrenches and drivers Electric & pneumatic screwdrivers	מומנט ידית 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 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.
529	A	P	Torque	מומנט	[0.001 Nm to 0.01 Nm]	0.25 % OR	
530	A	P	Mechanical and Electronic torque calibration equipment	מכשירים למדידת מומנט (מכאניים ואלקטרוניים)	[0.01 Nm to 1000 Nm]	0.1 % OR Manufacturer's instructions WI-C061 WI-C041	
531	A	T	Torque	מומנט	[0.001 Nm to 0.01 Nm]	0.4 % OR	
532	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		
533	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.
534	A	P	RH data loggers	(25 %rh to 65 %rh]	1.2 %rh		
535	A	P	RH probes	(65 %rh 95 %rh]	1.6 %rh		
536	A	P	RH transducers	10 °C to 20 °C [5 %rh to 25 %rh]	0.8 %rh		
537	A	P		(25 %rh to 65 %rh]	1.0 %rh		
538	A	P		(65 %rh 95 %rh]	1.3 %rh		
539	A	P		20 °C to 50 °C [5 %rh to 55 %rh]	0.8 %rh		
540	A	P		(55 %rh to 75 %rh]	1.0 %rh		
541	A	P		(75 %rh to 95 %rh]	1.3 %rh		
542	A	P		50 °C to 90 °C [5 %rh to 45 %rh]	0.6 %rh		
543	A	P		(45 %rh to 75 %rh]	0.8 %rh		
544	A	P		(75 %rh to 95 %rh]	1.0 %rh		
545	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
546	A	P;T	Relative humidity RH probes	23°C ± 2 °C 5% rh	0.3 % rh		Salt solutions in ampoules as humidity standards.
547	A	P;T		10% rh	0.4 % rh		
548	A	P;T		11.3% rh	0.4 % rh		
549	A	P;T		35% rh	0.45 % rh		



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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		
550	A	P;T			50% rh	0.65 % rh		
551	A	P;T			75% rh	0.75 % rh		
552	A	P;T			80% rh	0.75 % rh		
553	A	P;T			95% rh	0.85 % rh		
554	A	P;T	Dew point	נקודת טל	[-40 °C to 60 °C]	0.11 °C		Chilled mirror hygrometer היגרומטר מד נקודת טל.
555	A	P;T	RH meters	לחות יחסית				
			RH transducers	מדי לחות מתמרי לחות	(60 °C to 90 °C]	0.15 °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		
556	A	P, T	Flowrate	ספיקה	[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
557	A	P, T	Gas flowmeters	מדי ספיקה גזיים	(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.
558	A	P, T			(1 L/min to 5 L/min)	0.4 %O.R. + 0.02 L/min		STP conditions:
559	A	P, T			(5 L/min to 50 L/min)	0.4 %O.R. + 0.2 L/min		25°C
560	A	P, T			(50 L/min to 500 L/min)	0.4 %O.R. + 2 L/min		1 atm (14.696 psi)



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		
561	A	P	Mass	מסה	0.001 g	0.0008 mg	OIML R 111-1	מאזני השוואה
562	A	P	Weights	משקולות	0.002 g	0.0009 mg	OIML R 52	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.
563	A	P			0.005 g	0.001 mg	ASTM-E-617	
564	A	P			0.01 g	0.0012 mg	WI-C045	
565	A	P			0.02 g	0.0014 mg		
566	A	P			0.05 g	0.0016 mg		
567	A	P			0.1 g	0.0023 mg		
568	A	P			0.2 g	0.003 mg		
569	A	P			0.5 g	0.0036 mg		
570	A	P			1 g	0.0046 mg		
571	A	P			2 g	0.0053 mg		
572	A	P			5 g	0.0068 mg		
573	A	P			10 g	0.017 mg		
574	A	P			20 g	0.018 mg		
575	A	P			50 g	0.021 mg		
576	A	P			100 g	0.033 mg		
577	A	P			200 g	0.049 mg		
578	A	P			500 g	0.23 mg		
579	A	P			1000 g	0.31 mg		
580	A	P			2000 g	0.47 mg		
581	A	P			5000 g	1.9 mg		
582	A	P	10000 g	3 mg				
583	A	P	20000 g	10 mg				
584	A	P			(20 kg to 60 kg]	21 mg		משקולות סטנדרטיות מעל 50 kg ייתן לכייל מדרגת M2 ומטה או מקביל.
585	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						יול – גדלים פיזיקליים - מסה		
586	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 E1weights can be provided on demand. 3. res - resolution
587	A	P;T			(10 mg to 100 mg]	2.6 µg + 0.6res		
588	A	P;T			(100 mg to 500 mg]	3.6 µg + 0.6res		
589	A	P;T			(500 mg to 2 g]	7.4 µg + 0.6res		
590	A	P;T			(2 g to 5 g]	8.9 µg + 0.6res		
591	A	P;T			(5 g to 10 g]	18 µg + 0.6res		
592	A	P;T			(10 g to 20 g]	24 µg + 0.6res		
593	A	P;T			(20 g to 50 g]	29 µg + 0.6res		
594	A	P;T			(50 g to 120 g]	0.65 µg/g + 0.6res		
595	A	P;T			(120 g to 620 g]	0.4 µg/g + 0.6res		
596	A	P;T			(620 g to 110 kg]	1.5 µg/g + 0.6res		
597	A	P;T			(110 kg to 550 kg]	24 µg/g + 0.6res		
598	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		
599	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%
600	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
601	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
602	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
603	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
604	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		
605	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 Manufacturer instructions WI-C047	Druck 610 Druck 603 Druck 104
606	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		
607	A	T	Hydraulic pressure (gauge) Pressure indicating instruments and gauges	לחץ הידראולי מדידי לחץ	[0.6 MPa to 70 MPa]	1.0 Pa/kPa		
608	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		
609	A	P	Liquid in glass thermometers	תרמומטרים נוזל בזכוכית	[- 80 °C to – 30 °C]	0.15 °C	ISO 1770	אמבטיות כיוול תרמומטר אב PRT
610	A	P			(- 30 °C to 0 °C]	0.1 °C	ISO 1771	
611	A	P			(0 °C to 250 °C]	0.08 °C	ISO 386	
612	A	P			(250 °C to 550 °C]	0.5 °C	ASTM E563	
613	A	T			[-40 °C to 150 °C]	1.0 °C	ASTM E77	
614	A	T			(150 °C to 250 °C]	2.0 °C	BS 593 BS 1704 Manufacturer instructions WI-C063	
615	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 PRT may calibrated with its indicator. The uncertainty will be dependent on the indicator performance. כולל סעיף 10.3 מתוך נוהל משרד הבריאות מס' 126 Calibration of SPRT/PRT/Thermistors etc. מערכות למדידת טמפרטורה By WTP
616	A	P			[- 100 °C to -80 °C)	0.2 °C	ASTM E 644	
617	A	P			[- 80 °C to 250 °C]	0.02 °C	ASTM E 344	
618	A	P			(250 °C to 550 °C]	0.05 °C	IEC 751	
619	A	P			(550 °C to 661 °C]	0.3 °C	IEC60751	
							ITS-90	
					Manufacturer instructions WI-C065			
620	A	P			0.01 °C	0.006 °C		
621	A	T	PRT Measurement by comparison	גששי טמפרטורה התנגדות	-196 °C	0.1 °C		
622	A	T			(- 196 °C to – 100 °C)	0.5 °C		
623	A	T			[- 100 °C to – 40 °C)	0.1 °C		
624	A	T			[- 40 °C to 140 °C]	0.1 °C		
625	A	T			(140 °C to 250 °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		
626	A	T			(250 °C to 661 °C]	0.5 °C		כולל סעיף 10.3 מתוך נוהל משרד הבריאות מס' 126 Calibration of SPRT/PRT/Thermistors etc. מערכות למדידת טמפרטורה
627	A	P	TC base metal	צמידים תרמיים מתכות בסיסיות	-196 °C	0.14 °C	ASTM-E-230	Liquid nitrogen/ air or other gas/ Ethanol/ Dry block TC may calibrated with its indicator. The uncertainty will be dependent on the indicator performance.
628	A	P	Measurement by comparison		[- 100 °C to -80 °C)	0.2 °C	ASTM-E-220	
629	A	P			[- 80 °C to 250 °C]	0.14 °C	ITS-90	
630	A	P			(250 °C to 550 °C]	0.4 °C	Manufacturer instructions	
631	A	P			(550 °C to 1100 °C]	1 °C	WI-C065	
632	A	P			(1100°C to 1300 °C]	2.2 °C		
633	A	T			-196 °C	0.3 °C		
634	A	T			(- 196 °C to – 100 °C)	0.5 °C		
635	A	T			[- 100 °C to -40 °C)	0.2 °C		
636	A	T			[- 40 °C to 250 °C]	0.2 °C		כולל סעיף 10.3 מתוך נוהל משרד הבריאות מס' 126 כולל סעיפים, 3.3.1, 3.3.2, מתוך תקן ישראלי 1291
637	A	T			(250 °C to 550 °C]	0.5 °C		
638	A	T			(550 °C to 1100 °C]	1.5 °C		
639	A	T			(1100 °C to 1300 °C]	2.3 °C		
640	A	P	TC noble metal	צמידים תרמיים מתכות אצילות	[0 °C to 250 °C]	0.14 °C	ASTM-E-230	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
641	A	P	Measurement by comparison		(250 °C to 550 °C]	0.4 °C	ASTM-E-220	
642	A	P			(550 °C to 1100 °C]	1 °C	ITS-90	
643	A	P			(1100°C to 1300 °C]	1.6 °C	Manufacturer instructions	
644	A	T			[0 °C to 250 °C]	0.3 °C	WI-C065	
645	A	T			(250 °C to 550 °C]	0.5 °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		
646	A	T			(550 °C to 1100 °C]	1.5 °C		will be dependent on the indicator performance.
647	A	T			(1100 °C to 1300 °C]	1.8 °C		
648	A	P;T	Temperature controlled chambers Furnaces, Freezers, Incubators, Autoclaves Including uniformity	תאים מבוקרי טמפרטורה מקפאים, אינקובטורים אוטוקלבים, תנורים 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
649	A	P;T			[-100 °C to -45 °C)	0.5 °C		
650	A	P;T			[-45 °C to 70 °C)	0.25 °C		
651	A	P;T			[70 °C to 151 °C)	0.5 °C		
652	A	P;T			[151 °C to 300 °C)	0.7 °C		
653	A	P;T			(300 °C to 550 °C)	1 °C		
654	A	P;T			(550 °C to 1100 °C)	2.5 °C		
655	A	P;T			[1100 °C to 1300 °C]	3.5 °C		
656	A	P;T	Bathes	אמבט	[-196 °C to 251 °C]	0.03 °C	Manufacturer instructions WI-C062	SPRT, PRT
657	A	P;T	Including uniformity	כולל בדיקת אחידות	(251 °C to 550 °C]	0.09 °C		
658	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
659	A	P;T			(300 °C to 550 °C]	0.2 °C		
660	A	P,T			(550°C to 661°C]	0.3 °C		
661	A	P;T			(661 °C to 1000 °C]	0.7 °C		
662	A	P;T			(1000 °C to 1300 °C]	2 °C		
663	A	P;T	Tube furnace Including uniformity	תנור כיוול צינורי כולל בדיקת אחידות	[300 °C to 661 °C]	0.2 °C	Manufacturer instructions WI-C062	PRT,TC
664	A	P;T			(661 °C to 1100 °C]	1.2 °C		
665	A	P;T			(1100 °C to 1300 °C]	2.5 °C		
666	A	P;T	Temperature indicators, controllers, recorders and simulators for the resistance sensors	מד, רשמי ומדמי טמפרטורה עבור מדי התנגדות	-200 °C to 800 °C	0.01 °C	EURAMET cg-11 Manufacturer instructions WI-C067 WI-C100	Calibration by means of electrical calibration,



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		
667	A	P;T	Temperature indicators, controllers, recorders and simulators for the base metal thermocouples	מדִי, רשמי ומדמי טמפרטורה עבור צמדִים תרמיים מתכות בסיסיות	-200 °C to 1380 °C	0.2 °C	EURAMET cg-11 Manufacturer instructions WI-C067 WI-C100	Calibration by means of electrical calibration, including cold junction compensation
668	A	P;T	Temperature indicators, controllers, recorders and simulators for the noble metal thermocouples	מדִי, רשמי ומדמי טמפרטורה עבור צמדִים תרמיים מתכות אצילות	0 °C to 500 °C	0.5 °C	EURAMET cg-11 Manufacturer instructions	Calibration by means of electrical calibration, including cold junction compensation
669	A	P;T			500 °C to 1800 °C	0.3 °C	WI-C067 WI-C100	
670	A	T	Temperature, Infrared Thermometers,	טמפרטורה מדִי טמפרטורת קרינה	[-20 °C to 30 °C]	0.5 °C	ASTM E2847 Manufacturer instructions WI-C080	IR Calibrator כיוול מדִי טמפרטורה ללא מגע בבית הלקוח יבוצעו אל מול גוף שחור שיסופק על ידי הלקוח
671	A	P;T			[30 °C to 100 °C]	0.4 °C		
672	A	P;T			(100 °C to 200 °C]	0.65 °C		
673	A	P;T			(200 °C to 350 °C]	1.0 °C		
674	A	P;T			(350 °C to 500 °C]	1.4 °C		
675	A	P;T			(500 °C to 750 °C]	3 °C		
676	A	P;T			(750 °C to 1000 °C]	3.5 °C		
677	A	P,T	Temperature Black Body Calibration	טמפרטורה כיוול גופים שחורים	[-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
678	A	P,T			(100 °C to 300 °C]	1.1 °C		
679	A	P,T			(300 °C to 500 °C]	1.9 °C		
680	A	P,T			(500 °C to 750 °C]	2.8 °C		
681	A	P,T			(750 °C to 1000 °C]	3.3 °C		
682	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		
683	A	P	Liquid volume, Piston-operated volumetric apparatus	Nominal value		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
684	A	P		Up to 1µl	0.020 µl		
685	A	P		2 µl	0.025 µl		
686	A	P		5 µl	0.030 µl		
687	A	P		10 µl	0.040 µl		
688	A	P		20 µl	0.060 µl		
689	A	P		50 µl	0.12 µl		
690	A	P		100 µl	0.15 µl		
691	A	P		200 µl	0.3 µl		
692	A	P		500 µl	0.6 µl		
693	A	P		1000 µl	1.0 µl		
694	A	P		2000 µl	3.0 µl		
695	A	P		5000 µl	6.0 µl		
696	A	P		10000 µl	10 µl		
697	A	P		20000 µl	20 µl		
698	A	P		25000 µl	25 µl		
699	A	P		50000 µl	30 µl		
	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						כיוול – גדלים כימיים - מדי pH		
700	A	P;T	PH meters Calibration using standard solutions	מדי PH (ערך הגבה) כיוול בהשוואה 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			
701	A	P;T	Conductivity meters	מדי מוליכות	1.3 μs/cm	7.7 %O.R.	ASTM D1225	Standard Solution
702	A	P;T	Calibration using standard solutions	כיוול בהשוואה לתמיסות	5 μs/cm	2 %O.R.	ISO 7888	Values may differ slightly due to temperature variations
703	A	P;T			84 μs/cm	1 %O.R.	Manufacturer instructions	
704	A	P;T			1413 μs/cm	1 %O.R.	WI-C087	
705	A	P;T			12880 μs/cm	1 %O.R.		
706	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
707	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		
708	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
709	A	P			(5 m/s to 10 m/s]	0.3 m/s	EURAMET CG-24 ISO 16622	
710	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						כיול - גדלים כימיים - גלאי גזים באוויר								
711	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.- Off Reading כיול גלאי גזים אל מול גז ייחוס או באווירה מבוקרת (הצמדה / הזרמה בטר) 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 כיול 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*						
712	A	P;T			50 µmol/mol	2 %O.R.								
713	A	P;T			100 µmol/mol	0.2 %O.R.								
714	A	P;T			[25 µmol/mol to 100 µmol/mol]	5 %O.R.								
715	A	P;T	Gas detector O2 (Oxygen)	גלאי גז O2 (חמצן)	12 %	2 %O.R								
716	A	P;T			18 %	0.5 % O.R								
717	A	P;T			20.9 %	0.25 %O.R.								
718	A	P;T			[12 % to 20.9 %]	5 %O.R.								
719	A	P;T	Gas detector CH4 (Methane)	גלאי גז CH4 (מתאן)	2.2 % (44 % LEL)	0.8 %O.R.								
720	A	P;T			2.5 % (50 % LEL)	1 %O.R.								
721	A	P;T	Gas detector C3H8 (Propane)	גלאי גז C3H8 (פרופאן)	62 % LEL	4 %O.R.								
722	A	P;T	Gas Detector C4H10 (Butane & N-Butane)	גלאי גז C4H10 (בוטאן ואן-בוטאן)	78 % LEL	4 %O.R.								
723	A	P;T	Gas Detector C4H8 (Iso Butane)	גלאי גז C4H8 (איזו-בוטאן)	62 % LEL	4 %O.R.								
724	A	P;T	Gas Detector C2H4 (Ethylene)	גלאי גז C2H4 (אתילן)	62 % LEL	4 %O.R.								
725	A	P;T	Gas Detector C2H6 (Ethane)	גלאי גז C2H6 (אתאן)	62 % LEL	4 %O.R.								
726	A	P;T	Gas Detector C2H6O (Ethanol)	גלאי גז C2H6O (אתאנול)	500 µmol/mol	2 %O.R.								
727	A	P;T	Gas detector H2S (Hydrogen sulfide)	גלאי גז H2S (מימן גופרי)	10 µmol/mol	1.4 %O.R.								
728	A	P;T			20 µmol/mol	1 %O.R.								
729	A	P;T			25 µmol/mol	2 %O.R.								
730	A	P;T			[10 µmol/mol to 25 µmol/mol]	5 %O.R.								
731	A	P;T	Gas detector NO (Nitrous oxide)	גלאי גז NO (חנקן חמצני)	200 µmol/mol	1 %O.R.								
732	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		
733	A	P;T			[200 μmol/mol to 1000 μmol/mol]	5 %O.R.		
734	A	P;T	Gas detector NO2 (Nitrous dioxide)	גלאי גז NO2 (חנקן דו-חמצני)	100 μmol/mol	2 %O.R.		
735	A	P;T	Gas detector SO2 (Sulfur dioxide)	גלאי גז SO2 (גופרית דו-חמצנית)	80 μmol/mol	0.6 %O.R.		
736	A	P;T			100 μmol/mol	0.3 %O.R.		
737					[80 μmol/mol to 100 μmol/mol]	5 %O.R.		
738	A	P;T	Gas detector CO2 (Carbon dioxide)	גלאי גז CO2 (פחמן דו-חמצני)	1 %	1 %O.R.		
739	A	P;T			4 %	0.6 %O.R.		
740	A	P;T			10 %	2 %O.R.		
741	A	P;T			[1 % to 10 %]	5 %O.R.		
742	A	P;T	Gas detector NH3 (Ammonia)	גלאי גז NH3 (אמוניה)	80 μmol/mol	2.1 %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 - Determination of gas concentration in the cylinder						כיוול - גדלים כימיים - קביעת ריכוז גז בגליל		
743	A	P	Gas concentration in cylinder CO (Carbon monoxide)	ריכוז גז בגליל CO (פחמן חד-חמצני)	28* μmol/mol	1.4 %O.R.	ISO 12963 Manufacturer instructions WI-C090	O.R.- Of Reading
744	A	P			50* μmol/mol	2 %O.R.		* Nominal value. Actual value may be in the margins of ±10% of nominal value
745	A	P			95* μmol/mol	0.57 %O.R.		
746	A	P			[20 μmol/mol to 100 μmol/mol]	14 %O.R.		
747	A	P	Gas concentration in cylinder O2 (Oxygen)	ריכוז גז בגליל O2 (חמצן)	12* %	2 %O.R		
748	A	P			18* %	0.5 % O.R		
749	A	P			20.9* %	0.34 %O.R.		
750	A	P			[10.5 % to 20.9 %]	8.5 %O.R.		
751	A	P	Gas concentration in cylinder CH4 (Methane)	ריכוז גז בגליל CH4 (מתאן)	2.2* % (44 % LEL)	2.6 %O.R.		
752	A	P			2.5* % (50 % LEL)	1.7 %O.R.		
753	A	P			[1.8 % to 2.5 %]	12 %O.R.		
754	A	P	Gas concentration in cylinder C2H6O (Ethanol)	ריכוז גז בגליל C2H6O (אתאנול)	500* μmol/mol	2 %O.R.		
755	A	P			[350 μmol/mol to 500 μmol/mol]	13 %O.R.		
756	A	P	Gas concentration in cylinder H2S (Hydrogen sulfide)	ריכוז גז בגליל H2S (מימן גופרי)	10* μmol/mol	2 %O.R.		
757	A	P			21* μmol/mol	1 %O.R.		
758	A	P			26* μmol/mol	2.1 %O.R.		
759	A	P			[8 μmol/mol to 26 μmol/mol]	15 %O.R.		
760	A	P	Gas concentration in cylinder NO (Nitrous oxide)	ריכוז גז בגליל NO (חנקן חמצני)	200* μmol/mol	0.82 %O.R.		
761	A	P			1000* μmol/mol	2 %O.R.		
762	A	P			[150 μmol/mol to 1000 μmol/mol]	30 %O.R.		
763	A	P	Gas concentration in cylinder NO2 (Nitrous dioxide)	ריכוז גז בגליל NO2 (חנקן דו-חמצני)	100* μmol/mol	2 %O.R.		
764	A	P			[80 μmol/mol to 100 μmol/mol]	13 %O.R.		
765	A	P	Gas concentration in cylinder SO2 (Sulfur dioxide)	ריכוז גז בגליל SO2 (גופרית דו-חמצנית)	80* μmol/mol	2.1 %O.R.		
766	A	P			90* μmol/mol	0.78 %O.R.		
767	A	P			1000* μmol/mol	0.39 %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 - Determination of gas concentration in the cylinder						כיוול - גדלים כימיים - קביעת ריכוז גז בגליל		
768	A	P			[50 μmol/mol to 1000 μmol/mol]	28 %O.R.		
769	A	P	Gas concentration in cylinder CO2 (Carbon dioxide)	ריכוז גז בגליל	1* %	0.89 %O.R.		
770	A	P		CO2 (פחמן דו-חמצני)	4* %	1.4%O.R.		
771	A	P			10* %	2 %O.R.		
772	A	P			[0.85 % to 10 %]	10 %O.R.		
773	A	P	Gas concentration in cylinder NH3 (Ammonia)	ריכוז גז בגליל	80* μmol/mol	2 %O.R.		
774	A	P		NH3 (אמוניה)	[65 μmol/mol to 80 μmol/mol]	12 %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 %.