



ISO/IEC 17025:2017

מעבדות כיוול

תעודת הסמכה מס' 0010 מעבדות הכיוול רפאל

כתובת אתר ייחוס: מחלקת אא"כ ואחזקה 78, ת.ד. 2250, חיפה, 3102102

עד יום: 23.06.2028

בתוקף מיום: 19.01.2026

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/ בדרישות המפורטים מעלה. דרישות התקנים הם לכשירות מקצועית ולמערכות ניהול, שהינן הכרחיות למתן תוצאות אמינות. הסמכה זו ניתנה בהתאם לכללי 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 רב צדדי (MLA) מול ארגון (EA) European Accreditation Cooperation.

תעודה זו אינה מהווה אישור לפי סעיף 12 לחוק התקנים.

תאריך הסמכה ראשון: 24.06.1996

אתי פלר
מנכ"ל
הרשות הלאומית להסמכת מעבדות



הרשות הלאומית להסמכת מעבדות
Israel Laboratory Accreditation Authority

Calibration Laboratories

ISO/IEC 17025:2017

Accreditation Certificate No. 0010
Rafael - Calibration Laboratories

Main site address: Quality and Maintenance Dept. 78, P.O.B. 2250, Haifa 3102102, Israel

Valid from: 19.01.2026

Until: 23.06.2028

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 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-MLA (European Accreditation Cooperation Multi-Lateral Agreement) signatory.

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

Date of first accreditation: 24.06.1996

Etty Feller
General Manager
Israel Laboratory Accreditation Authority

Date of signature 19/01/2026

Page No. 2 of: 49



Name and Address:

Organization name	Rafael - Calibration Laboratories
Address	Quality and Maintenance Dept.78 P.O.B. 2250 Haifa 31021, Israel
Phone	+972-73-335-4287
E- mail (contact person)	shlomol3@rafael.co.il

As declared by the Organization, following is a list of the permanent sites and the phones numbers at which accredited activities are performed.

- P Haifa +972-73-335-4287
- PI Leshem +972-73-335-4722

Site: 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, Measuring Instruments מכשירי מדידת מתח בורם ישר	±100 mV	4.5 μV/V	Manufacturer instructions SOP 10700	Standard cell: Fluke 732A UUT:Fluke DMM 8508A Main calibrator: Datron 4808
2	A	P		±1 V	1 μV/V		
3	A	P		±1.018 V	2.5 μV/V		
4	A	P		±10 V	1 μV/V		
5	A	P		±100 V	1.5 μV/V		
6	A	P		±1000 V	2.5 μV/V		
7	A	P		Short	340 nV		
8	A	P		[0 mV to 200 mV]	4.5μV		
9	A	P		(200 mV to 2 V]	4.5 μV/V		
10	A	P		(2 V to 20 V]	4.5 μV/V		
11	A	P		(20 V to 200 V]	4.5 μV/V		
12	A	P		(200 V to 1000 V]	5.5 μV/V		
13	A	T		Short	0.1 μV		
14	A	T		[0 to 200 mV]	4 μV		
15	A	T		(200 mV to 2 V]	8 μV/V		
16	A	T		(2 V to 20 V]	5 μV/V		
17	A	T		(20 V to 200 V]	5 μV/V		
18	A	T		(200 V to 1100 V]	3.5 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				
19	A	P	DC Voltage, High Voltage probe	פרוב מתח גבוה בזרם ישר	[1 kV to 40 kV]	0.1 %	Manufacturer instructions SOP 11400	High Voltage power supply DMM 6.5 digits	
20	A	P	DC Voltage, Sources	מחוללי מתח בזרם ישר	±100 mV	2 μV/V	Manufacturer instructions SOP 10500 SOP 10650	Standard cell: Fluke 732A DMM: Fluke 8508A Main Calibrator: Fluke 732A or Datron 4808	
21	A	P			±1 V	1 μV/V			
22	A	P			±1.018 V	1 μV/V			
23	A	P			±10 V	1 μV/V			
24	A	P			±100 V	1 μV/V			
25	A	P			±1000 V	1.9 μV/V			DMM: Wavetek MTS 4950
26	A	P			[0 to 200 mV]	1 μV			
27	A	P			(200 mV to 2 V)	3 μV/V			
28	A	P			(2 V to 20 V)	3 μV/V			
29	A	P			(20 V to 200 V)	3.5 μV/V			
30	A	P			(200 V to 1000 V)	3.5 μV/V			
31	A	T			[0 to 50 mV]	1 μV			DMM: Fluke 8508A
32	A	T			(50 mV to 200 mV)	17 μV/V			Main Calibrator: Datron 4808
33	A	T			(200 mV to 2 V)	4.5 μV/V			
34	A	T			(2 V to 20 V)	3.5 μV/V			
35	A	T			(20 V to 200 V)	3 μV/V			
36	A	T	(200 V to 1100 V)	5.5 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 ישיר ותדר נמוך				
37	A	P	DC Current, Measuring Instruments זרם ישיר, מכשירי מדידה	100 μ A	8.5 μ A/A	Manufacturer instructions SOP 10700	Standard resistors Fluke DMM 8508A Wavetek MTS 4950 Datron Calibrator 4808		
38	A	P		1 mA	4 μ A/A				
39	A	P		10 mA	4.5 μ A/A				
40	A	P		100 mA	3.5 μ A/A				
41	A	P		1 A	4.5 μ A/A				
42	A	P		10 A	29 μ A/A				
43	A	P		Open	0.1 nA				
44	A	P		[0 to 200 μ A]	1.5 nA				
45	A	P		(200 μ A to 2 mA]	8 nA				
46	A	P		(2 mA to 20 mA]	77 nA				
47	A	P		(20 mA to 200 mA]	1 μ A				
48	A	P		(200 mA to 2 A]	7 μ A				
49	A	P		(2 A to 11 A]	30 μ A/A				
50	A	T		Open	0.1 nA				Datron Calibrator 4808
51	A	T		[0 μ A to 20 μ A]	5 nA				
52	A	T		(20 μ A to 50 μ A]	1 nA				
53	A	T		(50 μ A to 200 μ A]	9 μ A/A				
54	A	T		(200 μ A to 1 mA]	4 nA				
55	A	T		(1 mA to 2 mA]	10 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		
56	A	T		(2 mA to 10 mA]	0.1 μ A		
57	A	T		(10 mA to 20 mA]	10 μ A/A		
58	A	T		(20 mA to 100 mA]	1 μ A		
59	A	T		(100 mA to 200 mA]	15 μ A/A		
60	A	T		(200 mA to 500 mA]	21 μ A		
61	A	T		(500 mA to 2 A]	21 μ A/A		
62	A	T		(2 A to 5 A]	1 mA		
63	A	T		(5 A to 10 A]	120 μ A/A		
64	A	P	DC Current, Sources	100 μ A	8.5 μ A/A	Manufacturer instructions	Standard resistors
65	A	P		1 mA	3.5 μ A/A	SOP 10560	Fluke DMM 8508A
66	A	P		10 mA	4.5 μ A/A	SOP 10650	Wavetek MTS 4950
67	A	P		100 mA	3.5 μ A/A		Datron 4808
68	A	P		1 A	4.5 μ A/A		Datron 9100
69	A	P		10 A	24 μ A/A		Current coils
70	A	P		[0 μ A to 200 μ A]	4 nA		Current clamp
71	A	P		(200 μ A to 2 mA]	17 μ A/A		
72	A	P		(2 mA to 20 mA]	17 μ A/A		
73	A	P		(20 mA to 200 mA]	50 μ A/A		
74	A	P		(200 mA to 2 A]	50 μ A/A		
75	A	P		(2 A to 11 A]	200 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			
76	A	T		[0 μ A to 10 μ A]	4 nA			
77	A	T		(10 μ A to 100 μ A]	1 nA			
78	A	T		(100 μ A to 200 μ A]	1 nA			
79	A	T		(200 μ A to 1 mA]	34 nA			
80	A	T		(1 mA to 2 mA]	34 nA			
81	A	T		(2 mA to 10 mA]	1 μ A			
82	A	T		(10 mA to 20 mA]	1 μ A			
83	A	T		(20 mA to 100 mA]	10 μ A			
84	A	T		(100 mA to 200 mA]	10 μ A			
85	A	T		(200 mA to 1 A]	74 μ A			
86	A	T		(1 A to 2 A]	74 μ A/A			
87	A	T		(2 A to 11 A]	182 μ A/A			
88	A	T		(11 A to 1000 A]	17 mA/A			
89	A	P	DC Resistance, Resistors	התנגדות זרם ישר, נגדים	0.001 Ω	75 $\mu\Omega/\Omega$	Manufacturer instructions SOP 10800	Standard resistors Datron 4808 Wavetek 9100 Fluke 8508A Wavetek 4950
90	A	P			0.01 Ω	20 $\mu\Omega/\Omega$		
91	A	P			0.1 Ω	10 $\mu\Omega/\Omega$		
92	A	P			1 Ω	1 $\mu\Omega/\Omega$		
93	A	P			10 Ω	2 $\mu\Omega/\Omega$		
94	A	P			25 Ω	4 $\mu\Omega/\Omega$		
95	A	P			50 Ω	4 $\mu\Omega/\Omega$		



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 ישיר ותדר נמוך		
96	A	P		100 Ω	3 μΩ/Ω		
97	A	P		200 Ω	4 μΩ/Ω		
98	A	P		400 Ω	8 μΩ/Ω		
99	A	P		1 kΩ	5 μΩ/Ω		
100	A	P		10 kΩ	10 μΩ/Ω		
101	A	P		100 kΩ	10 μΩ/Ω		
102	A	P		1 MΩ	10 μΩ/Ω		
103	A	P		10 MΩ	20 μΩ/Ω		
104	A	P		100 MΩ	50 μΩ/Ω		
105	A	P		1 GΩ	0.1 %		Keithley 5155
106	A	P		10 GΩ	2 mΩ/Ω		Keithley 5155
107	A	P		100 GΩ	1 mΩ/Ω		Keithley 5155
108	A	P		1000 GΩ	1 mΩ/Ω		Keithley 5155
109	A	P		(0 to 1Ω]	23 μΩ	Manufacturer instructions SOP 10650	Fluke 8508A
110	A	P		(1 Ω to 20 Ω]	5 μΩ/Ω		
111	A	P		(20 Ω to 200 Ω]	5 μΩ/Ω		
112	A	P		(200 Ω to 2 kΩ]	8 μΩ/Ω		
113	A	P		(2 kΩ to 20 kΩ]	10 μΩ/Ω		
114	A	P		(20 kΩ to 200 kΩ]	10 μΩ/Ω		
115	A	P		(200 kΩ to 2 MΩ]	10 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		
116	A	P		(2 MΩ to 20 MΩ]	40 μΩ/Ω		
117	A	P		(20 MΩ to 100 MΩ]	220 μΩ/Ω		
118	A	T		(0 to 1 Ω]	45 μΩ		
119	A	T		(1 Ω to 5 Ω]	43 μΩ/Ω		
120	A	T		(5 Ω to 20 Ω]	25 μΩ/Ω		
121	A	T		(20 Ω to 200 Ω]	18 μΩ/Ω		
122	A	T		(200 Ω to 2 kΩ]	18 μΩ/Ω		
123	A	T		(2 kΩ to 20 kΩ]	18 μΩ/Ω		
124	A	T		(20 kΩ to 200 kΩ]	19 μΩ/Ω		
125	A	T		(200 kΩ to 2 MΩ]	31 μΩ/Ω		
126	A	T		(2 MΩ to 20 MΩ]	95 μΩ/Ω		
127	A	T		(20 MΩ to 100 MΩ]	950 μΩ/Ω		
128	A	P	DC Resistance, Measuring Instruments	0.001 Ω	90 μΩ/Ω	Manufacturer Instructions SOP 10700	Standard resistors Wavetek 9100 Fluke 8508A G.R. Decade resistors Wavetek 4950
129	A	P		0.01 Ω	30 μΩ/Ω		
130	A	P		0.1 Ω	10 μΩ/Ω		
131	A	P		1 Ω	0.5 μΩ/Ω		
132	A	P		10 Ω	2 μΩ/Ω		
133	A	P		25 Ω	3 μΩ/Ω		
134	A	P		50 Ω	3 μΩ/Ω		
135	A	P		100 Ω	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 ישיר ותדר נמוך		
136	A	P		200 Ω	5 μΩ/Ω		
137	A	P		1 kΩ	5 μΩ/Ω		
138	A	P		10 kΩ	10 μΩ/Ω		
139	A	P		100 kΩ	10 μΩ/Ω		
140	A	P		1 MΩ	10 μΩ/Ω		
141	A	P		10 MΩ	30 μΩ/Ω		
142	A	P		100 MΩ	50 μΩ/Ω		
143	A	P		1 GΩ	0.1 %		Keithley 5155
144	A	P		10 GΩ	0.2 %		
145	A	P		100 GΩ	0.1 %		
146	A	P		1000 GΩ	0.1 %		
147	A	P		(0 to 5 Ω]	120 μΩ		
148	A	P		(5 Ω to 20 Ω]	22 μΩ/Ω		
149	A	P		(20 Ω to 200 Ω]	17 μΩ/Ω		
150	A	P		(200 Ω to 2 kΩ]	15 μΩ/Ω		
151	A	P		(2 kΩ to 20 kΩ]	23 μΩ/Ω		
152	A	P		(20 kΩ to 200 kΩ]	15 μΩ/Ω		
153	A	P		(200 kΩ to 2 MΩ]	37 μΩ/Ω		
154	A	P		(2 MΩ to 20 MΩ]	95 μΩ/Ω		
155	A	P		(20 MΩ to 100 MΩ]	250 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 ישיר ותדר נמוך		
156	A	T			(0 to 0.1 Ω)	10 μΩ	Manufacturer instructions	Wavetek 9100 G.R. Decade resistors
157	A	T			(0.1 to 5 Ω)	140 μΩ		
158	A	T			(5 Ω to 20 Ω)	28 μΩ/Ω		
159	A	T			(20 Ω to 200 Ω)	18 μΩ/Ω		
160	A	T			(200 Ω to 2 kΩ)	18 μΩ/Ω		
161	A	T			(2 kΩ to 20 kΩ)	23 μΩ/Ω		
162	A	T			(20 kΩ to 200 kΩ)	19 μΩ/Ω		
163	A	T			(200 kΩ to 2 MΩ)	37 μΩ/Ω		
164	A	T			(2 MΩ to 20 MΩ)	95 μΩ/Ω		
165	A	T			(20 MΩ to 100 MΩ)	950 μΩ/Ω		
166	A	P	Frequency, Sources	תדר, מחוללים	[100 kHz to 10 MHz]	130 μHz	Manufacturer instructions SOP 10907 SOP 10650	GPS 910R COUNTER -53132A Rubidium COUNTER -53132A
167	A	P;T			[100 Hz to 1 kHz]	1 μHz		
168	A	P			(1 kHz to 10 MHz)	1 mHz		
169	A	P			(10 MHz to 100 MHz)	6 mHz		
170	A	P			(100 MHz to 1 GHz)	65 mHz		
171	A	T			[100 Hz to 10 MHz]	1 mHz		
172	A	T			(10 MHz to 100 MHz)	25 mHz		
173	A	T			(100 MHz to 1 GHz)	65 mHz		
174	A	P	AC charge amplification. Charge amplifiers	הגברת מטען חשמלי. מגברי מטען	1 kHz Minimum input 10 pC RMS Maximum output 1 V RMS	0.2 %	Manufacturer instructions SOP 11300	Calibration of voltage output per charge input



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		
175	A	P	Magnetism, Measuring Instruments	[0.5 G to 10 G)	0.1 G	Manufacturer instructions	Helmutz Coil Reference Magnets (Transverse probes) O.R. – Of Reading
176	A	P	Gauss Meter, DC	[10 G to 60 G]	1% O.R.	SOP 11500	
177	A	P		500 G	1% O.R.		
178	A	P		1000 G	1% O.R.		
179	A	P		5000 G	1% O.R.		



Item	Scope Type	Site	Measurand Instrument, Gauge					Range	Uncertainty of Measurement ^{1,2}	Reference Documents	Remarks			
Calibration – Electrical Quantities - DC and LF											כיוול – גדלים חשמליים – זרם ישר ותדר נמוך			
180	A	P	AC Voltage, Sources	מתח חילופין, מחוללים					μV/V	Manufacturer instructions SOP 10650	Datron 4920/4950 Fluke 5730A			
Voltage		Frequency												
		10 Hz	40 Hz	1 kHz	5 kHz	20 kHz	30 kHz	50 kHz	60 kHz	100 kHz	200 kHz	500 kHz	700 kHz	1 MHz
100 mV			45	45	45	60	65	65	55					
300 mV		30	30	30	30	25	25	30	45	85	180	480	440	
1 V	25	20	20	20	20	20	20	30	30	50	90	300	340	
3 V	70	40	20	35	35	40	35	40	40	60	150	300	520	
5 V	60	45	25	35	35	40	35	40	40	60	160	300	555	
10 V	50	50	45	45	45	40	20	40	35	50	180	300	640	
20 V	45	40	40	40	40	35	25	35	35	50	85	300	355	
30 V	35	25	30	30	30	30	30	30	30	50				
100 V	35	35	35	35	35	30	25	35	45					
300 V		50	40	50	50	60	45	50	70					
500 V		50	40	50	50	55	105	115	135					
700 V		45	35	50	50	50	165							
1000 V		35	25	50	50	35								



Item	Scope Type	Site	Measurand Instrument, Gauge	Range	Uncertainty of Measurement ^{1,2}	Reference Documents	Remarks						
<p>Calibration – Electrical Quantities - DC and LF כיוול – גדלים חשמליים – זרם ישר ותדר נמוך</p>													
181	A	P	AC Voltage, Measuring Instruments	מתח חילופין, מכשירי מדידה	$\mu\text{V}/\text{V}$	Manufacturer instructions SOP 10700	Fluke 5730A						
Voltage		Frequency											
		40 Hz	1 kHz	5 kHz	20 kHz	30 kHz	50 kHz	60 kHz	100 kHz	200 kHz	500 kHz	700 kHz	1 MHz
10 mV	180	180	185	185	185	185	185	185	210	245	385	1200	2420
100 mV	60	50	55	55	55	65	70	70	70	125	265	485	815
300 mV	30	25	30	30	30	35	40	40	45	85	150	590	735
1 V	20	15	20	20	20	20	20	25	35	60	105	320	705
3 V	30	20	20	20	20	20	20	25	25	85	195	190	330
5 V	30	20	20	20	20	20	20	25	25	80	210	200	300
10 V	30	20	15	15	10	20	20	20	20	65	235	220	220
20 V	30	20	20	20	20	25	30	30	35	55	165	110	110
30 V	30	20	25	25	25	30	35	35	45	45			
100 V	30	20	30	30	30	30	35	35	50				
300 V	40	45	40	40	50	40	50	50	85				
500 V	50	55	55	55	60	40	50	50	70				
700 V	55	60	70	70	65	35							
1000 V	60	70	85	85	75								



Item	Scope Type	Site	Measurand Instrument, Gauge	Range	Uncertainty of Measurement ^{1,2}	Reference Documents	Remarks			
			כיול – גדלים חשמליים – זרם ישר ותדר נמוך							
182	A	T	AC Voltage, Measuring Instruments	מתח חילופין, מכשירי מדידה	mV/V	Manufacturer instructions SOP 10700	Fluke 5730A			
			Frequency							
			Voltage							
			40 Hz	30 kHz	100 kHz	200 kHz	300 kHz	500 kHz	1 MHz	
			0.01 V	3	3	3	3	7	7	7
			0.1 V	3	3	3	3	7	7	7
			1 V	2	2	2	3	3	4	4
			10 V	1	1	1	1	2	2	3
			100 V	1	1	1	1			
			1000 V	1	1					



Item	Scope Type	Site	Measurand Instrument, Gauge	Range	Uncertainty of Measurement ^{1,2}	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF							
כיוול – גדלים חשמליים – זרם ישר ותדר נמוך							
183	A	P	AC Current, Measuring Instruments	זרם חילופין, מכשירי מדידה	μA/A	Manufacturer instructions SOP 10700	Fluke 5730A Fluke 5725A AVMS Datron 4920 Shunt Adapter Datron 4921 Shunt adapter Rafael 4921R Current Shunt A40, A40A Datron Calibrator 4808 Datron 4600 Datron 9100 Current coils
Current			Frequency				
			10 Hz	300 Hz	1 kHz	5 kHz	
1 mA			250	100	100	140	
10 mA			350	30	20	20	
100 mA			350	70	20	20	
1 A			450	20	20	20	
10 A			400	80	90	90	
100 A			2600				
1 kA			4000				



Item	Scope Type	Site	Measurand Instrument, Gauge	Range	Uncertainty of Measurement ^{1,2}	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF			כיול – גדלים חשמליים – זרם ישר ותדר נמוך				
184	A	T	AC Current, Measuring Instruments	זרם חילופין, מכשירי מדידה	mA/A	Manufacturer instructions SOP 10700	Fluke 5730A Fluke 5725A Datron 4600 Datron 9100 Current coils
Current			Frequency				
			10 Hz	100 Hz	440 Hz	1 kHz	5 kHz
0.001	A		2	2	2	2	2
11	A		2.5	2.5	2.5	2.5	10
20	A		5	5	10		
200	A		5	5			
1000	A		5	5			



Item	Scope Type	Site	Measurand Instrument, Gauge	Range	Uncertainty of Measurement ^{1,2}	Reference Documents	Remarks	
Calibration – Electrical Quantities - DC and LF			כיוול – גדלים חשמליים – זרם ישר ותדר נמוך					
185	A	P	AC Current, Source	זרם חילופין, מחוללים	μA/A	Manufacturer instructions SOP 10700	Fluke 5730A Fluke 5725A Alternating Voltage Measurement, Datron 4920, Shunt Adapter Datron 4921, Shunt Adapter Rafael 4921R, Current Shunt A40, A40A, Wavetek MTS 4950, Datron Calibrator 4808, Datron 4600, Datron 9100, Current Clamp, Current coils	
Current			Frequency					
			10 Hz	50 Hz	100 Hz	300 Hz	1 kHz	5 kHz
1	mA		250	500	250	60	60	60
10	mA		300	350	300	60	60	60
100	mA		300		300	90	60	60
1	A		400		400	60	70	80
10	A		400		400	60	70	80
100	A		2600		2600	8000		
1	kA		4000		4000			



Item	Scope Type	Site	Measurand Instrument, Gauge	Range	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF			כיוול – גדלים חשמליים – זרם ישר ותדר נמוך				
186	A	P	AC Resistance, Measuring Instruments	התנגדות זרם חילופין, מכשירי מדידה	$\mu\Omega/\Omega$	Manufacturer instructions SOP 10980	HP AC Resistors
Resistance		Frequency					
		100 kHz		1 MHz		10 MHz	
10 Ω		1500		1500		2100	
100 Ω		1500		1500		3500	
1 k Ω		2300		2300		3500	
10 k Ω		2300		2300			
100 k Ω		3500					



Item	Scope Type	Site	Measurand Instrument, Gauge	Range	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF			כיול – גדלים חשמליים – זרם ישר ותדר נמוך				
187	A	P	AC Resistance, Resistors	התנגדות זרם חילופין, נגדים	$\mu\Omega/\Omega$	Manufacturer instructions SOP 10980	LCR, HP AC Resistors
Resistance			Frequency				
			100 kHz				
			1500				
10 Ω			1500				
100 Ω			2300				
1 k Ω			2300				
10 k Ω			3500				
100 k Ω							



Item	Scope Type	Site	Measurand Instrument, Gauge	Range	Uncertainty of Measurement ¹	Reference Documents	Remarks	
Calibration – Electrical Quantities - DC and LF			כיוול – גדלים חשמליים – זרם ישר ותדר נמוך					
188	A	P	Capacitance, Measuring Instruments	קיבול, מכשירי מדידה	μF/F	Manufacturer instructions SOP 10980	HP Standard Capacitors GR standard Capacitors	
Capacitance			Frequency					
			120 Hz	1 kHz	10 kHz	100 kHz	1 MHz	2 MHz
1 pF				1000		400	400	
10 pF				2000		2000		
100 pF				40		30	200	
1 nF				100		100	200	
10 nF			50	80	50	600		
100 nF			500	10	30	10		
1 μF			50000	50000	50000	100000		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range	Uncertainty of Measurement ¹	Reference Documents	Remarks		
Calibration – Electrical Quantities - DC and LF							כיוול – גדלים חשמליים – זרם ישר ותדר נמוך		
189	A	P	Capacitance, Capacitors	קיבול, קבלים	μF/F	Manufacturer instructions SOP 10980	LCR HP Standard Capacitors GR Capacitors		
Capacitance			Frequency						
			120 Hz	1 kHz	10 kHz	100 kHz	1 MHz	2 MHz	
1 pF							400	400	
10 pF							2000	2000	
100 pF							40	30	200
1 nF							100	100	200
10 nF	50	80	50	600					
100 nF	500	10	30	10					
1 μF	50000	50000	50000	100000					



Item	Scope Type	Site	Measurand Instrument, Gauge	Range	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF			כיוול – גדלים חשמליים – זרם ישר ותדר נמוך				
190	A	P	Inductance, Measuring Instruments	השראות, מכשירי מדידה	μH/H	Manufacturer instructions SOP 10980	GR Inductors
Inductance		Frequency					
		400 Hz			1 kHz		
100 μH					700		
1 mH					300		
10 mH					400		
100 mH					300		
1 H					600		
10 H		500					



Item	Scope Type	Site	Measurand Instrument, Gauge	Range	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - DC and LF							כיוול – גדלים חשמליים – זרם ישר ותדר גמוך
191	A	P	Inductance, Inductors	השראות, משרנים	μH/H	Manufacturer instructions SOP 10980	LCR, GR Tech Inductors
Inductance		Frequency					
		400 Hz			1 kHz		
100 μH					700		
1 mH					300		
10 mH					400		
100 mH					400		
1 H					700		
10 H		500					



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			
192	A	P;T	Frequency.	(80 MHz to 350 MHz)	15 mHz	Manufacturer instructions SOP 10910	SPECTRUM - PSA-N9030B GPS 910R COUNTER 53230A OR-Of Reading	
193	A	P;T	Sources	(350 MHz to 50 GHz)	1.2E-11 Hz/Hz OR+0.02 Hz			
194	A	P;T	Frequency.	[10 Hz to 100 kHz]	2.5 μHz	Manufacturer instructions SOP 10910	GENERATOR -33600A , E8257D GPS 910R Rubidium	
195	A	P;T	Measuring Instruments	(100 kHz to 350 MHz)	6 mHz			
196	A	P;T		(350 MHz to 6 GHz)	100 mHz			
197	A	P;T		(6 GHz to 15 GHz)	0.25 Hz			
198	A	T		[10 Hz to 100 kHz]	1 mHz			
199	A	P;T	DC Voltage Accuracy, oscilloscope	מדידת דיוק מתח ישר, משקף תנודות	1 mV to 100 V	Manufacturer instructions SOP 10974	FLUKE 9500 & active heads OR - of reading	
200	A	P;T	Bandwidth	מדידת רוחב פס של משקף תנודות	Up to 67 GHz	SOP 10974	NRPT67T, PSG - E8257D	
201	A	P;T	Input Resistance	מדידת התנגדות כניסה של משקף תנודות	50 Ω	Manufacturer instructions SOP 10974		
202	A	P;T			1 MΩ			0.026 mΩ/Ω
203	A	P;T	Rise Time,	מדידת זמן עליה	Input impedance 50 Ω	4 ps	Manufacturer instructions SOP 10975	Wavemaster 820ZI-B
204	A	P;T	Power,	הספק,	[50 MHz to 20 GHz]	0.17 dB	Manufacturer instructions SOP 10925	Reference Power Sensor Reference Power Meter (1mwatt)
205	A	P;T	Sources	מקורות	(20 GHz to 40 GHz)	0.22 dB		
206	A	P;T			(40 GHz to 50 GHz)	0.27 dB		
207	A	P;T	Power,	הספק,	50 MHz	0.052 dB	Manufacturer instructions SOP 10925	Reference Power Sensor
208	A	P;T	Measuring Instruments	מכשירי מדידה	(50 MHz to 25 GHz)	0.17 dB		



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		
209	A	P;T		(25 GHz to 30 GHz]	0.25 dB		
210	A	P;T		(30 GHz to 50 GHz]	0.36 dB		
211	A	P;T	Power,	[50 MHz to 10 GHz]	0.07 dB	Manufacturer instructions	Reference Power Sensor
212	A	P;T	Power Sensors Cal Factor	(10 GHz to 20 GHz]	0.13 dB	SOP 10945	
213	A	P;T		(20 GHz to 50 GHz]	0.19 dB		
214	A	P;T	Attenuation, Attenuators	[1 kHz to 100 MHz] [1 dB to 80 dB]	0.1 dB	Manufacturer instructions SOP 10928	436A-E40 Microwave Power Sensor System HP 8350B Sweep Generator HP 436A Power Meter HP 8481A, 8484 Power References Sensors
215	A	P;T		[0.1 GHz to 1 GHz] [1 dB to 80 dB]	0.015 dB		
216	A	P;T		(1 GHz to 8 GHz] [1 to 80 dB]	0.025 dB		
217	A	P;T		(8 GHz to 17 GHz] [1 dB to 80 dB]	0.035 dB		
218	A	P;T		(17 GHz to 40 GHz] [1 dB to 80 dB]	0.08 B		
219	A	P;T	Amplitude Modulation (AM), Depth of Signals	Carrier frequency: [sine 100 Hz to 50 GHz] Modulation frequency: [1 Hz to 250 kHz sine and square] Modulation depth: [5% to 95%] Ratio: Carrier/Rate [10 to 50·10 ⁹]	1 %	Manufacturer instructions SOP 10962	Agilent PSA spectrum Analyzer, model E4448A



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ^l	Reference Documents	Remarks
Calibration – Mechanical Quantities – Accelerometers					כיוול – גדלים מכניים – מדי תאוצה		
220	A	P	Acceleration Piezoelectric type accelerometer	מד תאוצה פייזואלקטרי	[5 m/s ² to 100 m/s ²] [2 Hz to 80 Hz]	ISO 16063-21 SOP 10040	PCB 9155C (Automated back-to-back calibration system)
221	A	P			[80 Hz – 5 kHz]		
222	A	P			[5 kHz to 10 kHz]		
223	A	P	Acceleration Piezoresistive type accelerometer	מד תאוצה פייזורזיסטיבי	[5 m/s ² to 100 m/s ²] [2 Hz to 80 Hz]	ISO 16063-21 SOP 10040	PCB 9155C (Automated back-to-back calibration system)
224	A	P			[80 Hz to 5 kHz]		
225	A	P			[5 kHz to 10 kHz]		
226	A	P	Acceleration Piezoelectric type accelerometer	מד תאוצה	[1000 m/s ² to 20 000 m/s ²]	ISO 16063-22 SOP 10040	PCB 9155C (Automated back-to-back calibration system)
227	A	P	Shock Calibration	כיוול הלם	(20 000 m/s ² to 100 000 m/s 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 – CMM Measuring Machines						כיוול – גדלים מכניים – מכשירי מדידה תלת ממדיים		
228	A	P,T	Length, CMM Measuring Machine	אורך, מכונת מדידה תלת ממדיות	20 mm to 2000 mm	$[0.2 \mu\text{m} + 1.4 \cdot L] \mu\text{m}$	ISO 10360-2 ISO 10360-5 SOP 10025	L in meters Check Master Accurate Ball Gauge
229	A	P,T			125 mm to 1000 mm	$[0.16 \mu\text{m} + 1.2 \cdot L] \mu\text{m}$	ISO 10360-2 SOP 10025	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 – Form, Angle					כיוול – גדלים מכניים – צורה, זווית		
230	A	P,T	Form, Flatness, Surface Plates	צורה, שטוחות, פלטת גרניט	Up to 2 mm	1 μm	DIN 876/1 JIS B 7513 ASME B89.3.7 ISO 8512/2 SOP 10032 Electronic Levels L in meters diagonal Granite, Cast Iron For surfaces up to 2000 mm in diagonal
231	A	P	Squares.	זווית.	Up to 0.02 mm	1.5 μm	BS 939 Electronic head,
232	A	P	Squareness, straightness, flatness, Base parallelism	ניצבות, ישרות, שטוחות, מקבילות הבסיס	Up to 500 mm	1.4 μm	DIN 875/1JIS B 7526 Manufacturer instructions SOP 9150113 Square master
233	A	P	Parallelism, Parallels, Steel and Granite	מקבילות, מקבילי פלדה וגרניט	Up to 400 mm	1.4 μm	DIN 6346 BS 906/1/2 SOP 9150122 Surface plate, electronic head
234	A	P	Angle, Vee Blocks Squareness, Flatness and Parallelism	זווית, פריזמה V ניצבות, שטוחות ומקבילות	Up to 200 mm	1.4 μm	DIN 2274 BS 3731 SOP 9150117 Accurate cylinders, surface plate, electronic head, square master
235	A	P	Parallelism of V-axis to the base	מקבילות ציר ה-V לבסיס	Up to 200 mm	2.2 μm	
236	A	P	Angle, Rotary table	זווית, שולחן מסתובב	Up to 360°	0.5"	Manufacturer instructions SOP 9150130 Autocollimator, polygon
237	A	P	Angle, Electronic Levels	זווית, פלאס אלקטרוני	Up to 360°	3.5'	Manufacturer instructions SOP 9150118 Rotary table Indication 0.1°
238	A	P				1.1'	Indication 0.01°
239	A	P	Inclinometer	מד שיפוע	Up to 90 °	6.5"	Manufacturer instructions SOP 10027 Rotary table, DVM



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			
240	A	T	Rockwell hardness scale, Rockwell hardness testing machines	HRC [20 to 65]	0.4 HRC	ASTM E-18 SOP 10018	Indirect verification, i.e. Calibration by comparison to reference materials.	
241	A	T		HRBW [40 to 100]	1.0 HRBW			
242	A	P	Shore hardness testing instruments - durometers. SHORE A	מכשירים למדידת קשיות בשיטת שור - דורמטרים. שור A	[0 to 100] Shore A	ASTM D-2240 ISO 48/9SOP 10028	Balance and device for durometer calibration CNC (MicroVu)	
243	A	P		אורך החודרן	[2.46 to 2.54] mm			0.045 mm
244	A	P		קטר החודרן	[0.76 to 0.82] mm			0.002 mm
245	A	P		[1.1 to 1.4] mm	0.002 mm			
246	A	P		זווית החודרן	[34.75° to 35.25°]			0.06°
247	A	P	Shore hardness testing instruments - durometers. SHORE D	מכשירים למדידת קשיות בשיטת שור - דורמטרים. שור D	[10 to 100] Shore D	ASTM D-2240 ISO 48/9SOP 10028	Balance and device for durometer calibration CNC (MicroVu)	
248	A	P		אורך החודרן	[2.46 to 2.54] mm			0.045 mm
249	A	P		קטר החודרן	[1.1 to 1.4] mm			0.002 mm
250	A	P		רדיוס החודרן	[0.088 to 0.112] mm			0.002 mm
251	A	P		זווית החודרן	[29.5° to 30.5°]			0.06°



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				
252	A	P	Length, Gauge Blocks (by Comparison)	אורך, מקבילונים [0.5 mm to 10 mm]	#A ##B 0.085 μm 0.15 μm	SOP 9150112 Based on ISO 3650	Gauge Block Comparator # Class A uncertainties apply to the measurement of length of gauges by comparison with grade K standards of a similar material ## Class B uncertainties apply to the measurement of length of gauges by comparison with grade 0 standards of a similar material ULM 1500 for gauge blocks above 125 mm		
253	A	P						(10 mm to 25 mm)	0.11 μm 0.18 μm
254	A	P						(25 mm to 60 mm)	0.14 μm 0.22 μm
255	A	P						(60 mm to 90 mm)	0.19 μm 0.27 μm
256	A	P						(90 mm to 100 mm)	0.25 μm 0.34 μm
257	A	P						[125 mm up to 1000 mm]	0.5 μm
258	A	P	Length, Gauge Blocks Comparators	אורך, קומפרטור למקבילונים [0.5 mm to 100 mm]	0.05 μm	SOP 10053 Based on EURAMET/cg-02	Set of 6 pairs of gauge blocks including 6 mm bridge shaped gauge block Grade K gauge blocks		
259	A	P	Length, Micrometer extension rod	אורך, מוטות הארכה למיקרומטר [25 mm to 1075 mm]	0.5 μm	ISO 3611 SOP 9150127	Gauge block, Measuring machines L in meters		
260	A	P	Diameter, Plain Ring Gauges, parallel	קוטר, מדידי טבעת חלקה [1.5 mm to 90 mm]	0.3 μm	SOP 9150123 Based on ASME B89.1.6	Setting rings Measuring machines		
261	A	P						(90 mm to 300 mm)	0.4 μm
262	A	P	Diameter, Plain Plug Gauges	אורך, (קוטר) מדידי תקע חלק [0.7 mm to 25 mm]	1.0 μm	SOP 10050 Based on JIS B 7420	Gauge Blocks Measuring machines		
263	A	P						(25 mm to 200 mm)	1.0 μm
264	A	P						[1 mm to 145 mm]	0.5 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 - Length					כיוול – גדלים מכניים - אורך			
265	A	P	Diameter, Measuring Pins	אורך (קוטר), מדידי קדח	[0.7 mm to 25.4 mm]	0.8 μm	Based on DIN 7164 JIS B 7420 SOP 10050	Length measuring machines
266	A	P	Measuring Pins	מדידי קדח	[1 mm to 25.4 mm]	0.5 μm	SOP 10050	Laser measuring machine
267	A	P	Diameter, Pitch. Thread Measuring Wires,	קוטר, תיילים למדידת הברגה	[0.1155 mm to 5.7735 mm]	0.3 μm	Based on ASME B89.1.17 SOP 10048	Measuring machine
268	A	P	Diameter, Pitch. Thread Plug Gauges, Parallel	קוטר, מדידי הברגה זכר מקביל	[0.8mm to 314 mm]	1.6 μm	ISO 228/1/2 ISO 1502 BS 84 BS 919/1/2/3/4 ASME B1.1, ASME B1.2 ASME B1.9 ISO 965/1/2 ISO 68/1 BS 1580 1/3 SOP 9150124	Gauge Blocks Measuring machine Measuring pins
269	A	P	Diameter, Pitch diameter, Major diameter Thread Plug gauges	קוטר, קוטר אפקטיבי, קוטר "גדול" מדידי הברגה זכר	[1 mm to 155 mm]	1.5 μm	ISO 228/1/2 ISO 1502 BS 84 BS 919/1/2/3/4	Master Scanner (IAC)
270	A	P	Diameter, Pitch diameter, Minor diameter Thread Ring gauges	קוטר, קוטר אפקטיבי, קוטר "קטן" מדידי הברגה טבעת	[4 mm to 160 mm]	1.5 μm	ASME B1.1, ASME B1.2 ASME B1.9	
271	A	P	Length, Pitch	אורך, פסיעה	[0.25 mm to 4 mm]	0.75 μm	ISO 965/1/2	
272	A	P	Angle, Thread Angle	זווית, זווית התברייג	[52° to 60°]	0.1°	ISO 68/1 BS 1580 1/3 ASME B1.5 ASME B1.20.1 ASME B89.1.6 SOP 10060	



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		
273	A	P	Diameter, Plain Plug gauge קוטר, מדיד תקע חלק	[1 mm to 155 mm]	1 µm	SOP 10060 DIN 7164 JIS B 7420	
274	A	P	Diameter, Plain Ring gauge קוטר, מדיד טבעת חלק	[2.5 mm to 160 mm]	1 µm	SOP 10060	
275	A	P	Diameter, Pitch Thread Ring gauges Parallel קוטר אפקטיבי, מדידי הברגה טבעת, מקביל	[5 mm to 314 mm]	1.8 µm	ISO 228/1/2 ISO 1502 BS 84 BS 919/1/2/3/4 ASME B1.1, ASME B1.2 ASME B1.9 ISO 965/1/2 ISO 68/1 BS 1580 1/3 SOP 9150128	Functional Inspection (GO-NOT GO) in the range up to 25.4 mm may be provided. Wear and setting plugs. Measuring machine, setting rings
276	A	P	Diameter, Internal Dial Bore Gauge, Built in קוטר פנימי, מד קדח, חוגן מובנה, אינטרטסט	Up to 150 mm	8.4 µm	Manufacturer instructions SOP 10014	Measuring machine Indicator Tester
277	A	P	Diameter, Internal, Dial bore gauge קוטר פנימי, מד קדח גשר	[4 mm to 400 mm]	0.9 µm	Manufacturer instructions SOP 9150111 Based on JIS B 7515	Electronic Gauge
278	A	P	Length, Vernier, Depth, Dial and Digital Caliper אורך, זחון וורניר, עומק, חוגן ודיגיטלי	Up to 300 mm]	5 µm	Based on JIS B 7507 ISO 13385-1/2 SOP 9150105	Check master; gauge blocks. The Uncertainty is defined as a Test Uncertainty and does not include UUT contributions, such as Repeatability and Resolution. TUR (Tolerance Uncertainty Ratio) is greater than 4. Test uncertainty is calculated according to ISO 13385-1,2
279	A	P		(300 mm to 2000 mm]	8 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					כיוול – גדלים מכניים - אורך		
280	A	P;T	Length, Height Gauge	אורך, מד גובה Up to 1000 mm]	(1.5 μm+1.7L) μm	Based on JIS B 7517 ISO 13225 SOP 10051	Check master; gauge blocks, indicator tester. CMC values stand for instruments that have resolution of 0.0001 mm. L in meter
281	A	P	Length, Micrometer External	אורך, מיקרומטר חיצוני [Up to 300mm]	1 μm	Based on JIS B 7502 JIS B 7520 ASME B89.1.13 ISO 3611 SOP 10052	Gauge blocks, micrometer setting rods. L in meters
282	A	P		[300 mm to 1000 mm]	2 μm		The Uncertainty is defined as a Test Uncertainty and does not include UUT contributions, such as Repeatability and Resolution. TUR (Tolerance Uncertainty Ratio) is greater than 4. Test uncertainty is calculated according to ISO 3611/ASME B89.1.13
283	A	P	Length, Micrometer Head	אורך, ראש מיקרומטרי Up to 50 mm]	0.5 μm	Based on JIS B 7502 BS 1734 ASME B89.1.13 DIN 863/2SOP 10021	Gauge blocks, Electronical gauge head L in meters The Uncertainty is defined as a Test Uncertainty and does not include UUT contributions, such as Repeatability and Resolution. TUR (Tolerance Uncertainty Ratio) is greater than 4. Test uncertainty is calculated according to ISO 3611/ASME B89.1.13



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		
284	A	P	Length, Micrometer Depth	אורך, מיקרומטר עומק Up to 300 mm]	1 µm	DIN 863/2 ASME B89.1.13SOP 9150106	Gauge Blocks L in meters The Uncertainty is defined as a Test Uncertainty and not included UUT contributions, such as Repeatability and Resolution. TUR (Tolerance Uncertainty Ratio) is greater than 4. Test uncertainty is calculated according to ISO 3611/ASME B89.1.13
285	A	P	Diameter, Internal	קוטר פנימי, Up to 90 mm]	1.7 µm	DIN 863/4 ASME B89.1.13SOP 9150129	Plain ring gauges Test uncertainty is calculated according to ISO 3611
286	A	P	Three-point internal micrometer	מיקרומטר פנימי 3 נקודות (90 mm to 200 mm]	1.9 µm		
287	A	P	Length, Inside micrometer	אורך, מיקרומטר פנימי Up to 100 mm]	1 µm	Based on DIN 863/4 ASME B89.1.13 SOP 10023	Setting rings The Uncertainty is defined as a Test Uncertainty and does not include UUT contributions, such as Repeatability and Resolution. TUR (Tolerance Uncertainty Ratio) is greater than 4. Test uncertainty is calculated according to ISO 3611/ASME B89.1.13
288	A	P	Length,	אורך, Up to 0.8 mm]	0.8 µm	Based on JIS B 7533	Indication 0.001 mm
289	A	P	Dial Gauge, lever	חוגן מנופי Up to 0.2 mm	1 µm	DIN EN ISO 9493 DIN 2270	Indication 0.002 mm
290	A	P		(0.8 mm to 3 mm]	1 µm	SOP 9150103	Indication 0.01 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		
291	A	P	Length, Dial indicator	אורך, חוּגוּן Up to 0.05 mm	0.4 μm	Based on DIN 879/1DIN 878	Indication 0.005 mm
292	A	P		Up to 5 mm	0.42 μm	JIS B 7503	Indication 0.001 mm
293	A	P		Up to 100 mm]	1 μm	BS EN ISO 463 ISO 13102	Indication 0.01 mm
294	A	P		(100 mm to 150 mm]	(0.85 μm + 5.5·L) μm	SOP 9150107	Indicator Tester L in meters
295	A	P	Length, Indicator Tester	אורך, בודק חוגניים Up to 25 mm	0.5 μm	Based on JIS B 7502 Manufacturer instructions SOP 9150134	Indication 0.001 mm Gauge blocks
296	A	P	Length, LVDT	אורך, מתמר אורך Up to 500 mm	10 μm	Manufacturer instructions SOP 10022	Indicator Tester DVM
297	A	P	Length Electronic probe	אורך גשש אלקטרוני Up to 60 mm	0.14 μm		Gauge blocks
298	A	P	Length, Horizontal Measuring Machine	אורך, מכונת מדידה Up to 1000 mm	(0.1 μm + 0.4·L) μm	Manufacturer instructions SOP 10029	Indication 0.00001 mm Measuring machine range up to 1000 mm L in meter Measuring pins
299	A	P	Laser measuring machine	מכונת מדידה לייזר Up to 25.4 mm	0.22 μm		
300	A	P	Length, Sieves	אורך, נפות אריג Up to aperture of 4.75 mm	1.5 μm	ASTM – E11 ISO 3310-1 SOP 10054	MicroVu
301	A	P	Length, Feeler gauge	אורך, מד מרווח Up to 1 mm	0.5 μm	JIS B 7524 DIN 2275 SOP 10055	Certo
302	A	P	Coating thickness gauge,	מד עובי ציפוי, (11 μm to 100 μm]	1.5 μm	SOP 10056	Foils
303	A	P	Thickness	עובי (100 μm to 1000 μm]	4.5 μm	ASTM D7091	



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		
304	A	P		(1000 µm to 1500 µm]	8 µm		
305	A	P		(1500 µm to 13000 µm]	26 µm		
306	A	P		(13000 µm to 30000 µm]	80 µm		
307	A	P	Foil	Up to 100 µm	0.5 µm	SOP 10056	CT60 Electronic length gauge
308	A	P		(100 µm to 2000 µm]	1.5 µm		
309	A	P		(2000 µm to 13000 µm]	24 µm		
310	A	P		(13000 µm to 25000 µm]	46 µm		
311	A	P, T	Torque arm	10"	0.045 mm	SOP 10058	CMM
312	A	P, T		40"	0.035 mm		
313	A	T	Profile projector, Magnification	Up to 100 M	0.0092 %	Manufacturer instructions JIS B 7184 SOP 10026	Glass scale M - Magnification Screen sizes up to 300 mm
314	A	T	Profile projector, Axis accuracy	Up to 300 mm	2 µm		Glass scale
315	A	T	Profile projector, Angle accuracy	1" to 90°	1.1'		Angle block gauges
316	A	P,T	CNC, video measuring system, length measurement	Up to 300 mm	1 µm		Glass scale
317	A	P,T	CNC, video measuring system, angle measurement	Up to 90°	0.002°		Angle block gauges
318	A	T	Length, Extensometer	[0.001 mm to 25 mm]	1.5 µm	ASTM E83 ISO 9513 SOP 10059	Calibrator Epsilon



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 – Physical Quantities - Force, Torque					כיוול – חזלים פיזיקליים - כח, מומנט		
319	A	P	Force, Load cell, dynamometers	[0.5 N to 2000 N]	0.1 %OR +0.05 N	Based on ISO 7500-1	Load cells OR-of reading
320	A	P	Tension and compression	(2 kN to 10 kN)	0.08%OR+0.007 kN	SOP 90150318	
321	A	P		(10 kN to 100 kN)	0.03%OR+0.035 kN		
322	A	P		(100 kN to 450 kN)	0.04%OR+0.1 kN		
323	A	T	Force, Material Testing Machines Presses Tension and compression	(50 N to 500 kN)	0.2 %OR+2 N	Based on ISO 7500-1 Manufacturer instructions SOP 90150318	Load cells
324	A	T	Force, Machines Presses, Compression	(500 kN to 5 MN)	0.6 %OR	Based on ISO 7500-1 Manufacturer instructions SOP 90150318	Load cells OR-of reading
325	A	P, P1	Torque, Torque Wrenches and drivers	[0.056 N·m to 1100 N·m]	1 %OR	Based on ISO 6789 SOP 10033	Torque Transducers
326	A	P	Torque, Torque tester Torque Transducer	[0.1 N·m to 10 N·m]	0.003 N·m	Good Practice Guide 107 Guide to the calibration and testing of torque transducers Manufacturer instructions SOP 90150320	Standard weights, arms, and hangers



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		
327	A	P	Relative Humidity	לחות יחסית (19 %rh to 24 %rh)	1.2 %rh	NPL-ISBN NO. 0-904457-24-9 Manufacturer instructions SOP 10152	Dew point mirror Humidity and temperature controller chamber
328	A	P	Relative Humidity transducers, Relative Humidity probes, Relative Humidity data loggers, Relative Humidity meter	מתמרי לחות יחסית רגשי לחות יחסית אוגרי נתונים מדי לחות יחסית [14.6 °C to 27 °C]	1.2 %rh		
329	A	P		[24 %rh to 29 %rh] [14.6 °C to 22 °C]	1.2 %rh		
330	A	P		(29 %rh to 36 %rh) [14.6 °C to 19 °C]	1.2 %rh		
331	A	P		(19 % rh to 76 % rh) [27 °C to 40 °C]	0.8 %rh		
332	A	P		(24 % rh to 29 % rh) [22 °C to 27 °C]	0.8 %rh		
333	A	P		(29 % rh to 36 % rh) [19 °C to 27 °C]	0.8 %rh		
334	A	P		(36 % rh to 76 % rh) [14.6 °C to 27 °C]	0.8 %rh		
335	A	P		(76 % rh to 96 % rh) [25 °C to 40 °C]	1.2 %rh		
336	A	P	Temperature, Relative Humidity/ Temperature Gauges	טמפרטורה רגשי לחות /טמפרטורה (15 °C to 40 °C)	0.2 °C		
337	A	P		(40 °C to 50 °C)	0.26 °C		
338	A	T	Relative Humidity, Humidity Chambers, Humidity Controller Climatic chambers	לחות יחסית, בקרים לתאי סביבה תאים אקלימים (25 %rh to 75 %rh) [15 °C to 35 °C]	1.5 %rh	Manufacturer instruction SOP 10152	Humidity/Temperature Sensor
339	A	T		[75 %rh to 96 %rh] [25 °C to 35 °C]	1.5 %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					כיוול – גדלים פיזיקליים - לחות		
340	A	T		[25 %rh to 61 %rh] [40 °C to 50 °C]	1.5 %rh		Humidity and temperature controller chamber
341	A	T		(75 %rh to 96 %rh) [40 °C to 60 °C]	1.5 %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 - Liquid and Air Flow					כיוול – גדלים פיזיקליים – זרימה, נוזל ואוויר		
342	A	P	Flowrate Gas flowmeters	ספיקה מדי ספיקה גזיים [0.005 L/min to 50 L/min]	0.4 %	Manufacturer instructions SOP 10007	Primary standard - Cal - Trak SL800 (*) Calibration gas is N ₂ . Volume flow rate may be presented in mass flow rate units at STP conditions, e.g. in SLPM. Max pressure for calibration at P - 4.5 bar.
343	A	P1;T1		(0.1 L/min to 200 L/min]	1.4 %	Manufacturer instructions SOP 10047	MFC – mass flow controller Max pressure for calibration at P1 - 413 bar.



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			
344	A	P;T	Mass Non-automatic weighing instruments Resolution 0.01 mg	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.01 mg	[1 mg to 50 g]	Based on Euramet cg 18 Manufacturer instructions SOP 90150319	The uncertainty quoted will depend on the performance of the weighing instrument under calibration and will depend on the calibration uncertainty of weights used. Available weights are: OIML Class E2 from 0.001 g to 5 kg OIML Class F1 from 0.001 g to 10 kg Weights 7 x 10 kg OIML Class F2, Weight 4 x 20 kg OIML Class M1, Weights 20 x 10 kg Test weight 50 kg Test weights 3 x 100 kg OIML class F1, Weights 5 x 500 kg Weight 1000 kg	
345	A	P;T			(50 g to 100 g)			0.025 mg
346	A	P;T			(100 g to 220 g)			0.08 mg
347	A	P;T	Mass Non-automatic weighing instruments Resolution 0.1 mg	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.1 mg	(Up to 100 g)			0.12 mg
348	A	P;T			(100 g to 220 g)			0.24 mg
349	A	P;T			(220 g to 520 g)			0.30 mg
350	A	P;T	Mass Non-automatic weighing instruments Resolution 0.001 g	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.001 g	(Up to 4.1 kg)			0.002 g
351	A	P;T	Mass Non-automatic weighing instruments Resolution 0.01 g	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.01 g	(Up to 8.1 kg)			0.014 g
352	A	P;T			(8.1 kg to 15 kg)			0.017 g
353	A	P;T	Mass Non-automatic weighing instruments Resolution 0.1 g	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.1 g	Up to 32.1 kg			0.12 g
354	A	P;T			(32.1 kg to 60 kg)	0.2 g		
355	A	P;T	Mass Non-automatic weighing instruments Resolution 0.2 g	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.2 g	Up to 6.1 kg]	0.2 g		
356	A	P;T	Mass Non-automatic weighing instruments Resolution 0.5 g	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.5 g	Up to 30 kg]	0.5 g		
357	A	P;T	Mass Non-automatic weighing instruments Resolution 1 g	מסה, מאזניים לא אוטומטיים כושר הפרדה 1 g	(Up to 150 kg)	1 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		
358	A	P;T	Mass Non-automatic weighing instruments Resolution 0.002 kg	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.002 kg	(Up to 150 kg]	2 g	
359	A	P;T	Mass Non-automatic weighing instruments Resolution 0.005 kg	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.005 kg	(Up to 200 kg]	6 g	
360	A	P;T	Mass Non-automatic weighing instruments Resolution 0.01 kg	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.01 kg	(Up to 500 kg]	20 g	
361	A	P;T	Mass Non-automatic weighing instruments Resolution 0.02 kg	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.02 kg	(Up to 500 kg]	20 g	
362	A	P;T	Mass Non-automatic weighing instruments Resolution 0.05 kg	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.05 kg	(Up to 2000 kg]	50 g	
363	A	P;T	Mass Non-automatic weighing instruments Resolution 0.1 kg	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.1 kg	(Up to 2500 kg]	100 g	
364	A	P;T	Mass Non-automatic weighing instruments Resolution 0.2 kg	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.2 kg	(Up to 2700 kg]	200 g	
365	A	P;T	Mass Non-automatic weighing instruments Resolution 0.5 kg	מסה, מאזניים לא אוטומטיים כושר הפרדה 0.5 kg	(Up to 2700 kg]	500 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 - Pressure					כיוול – גדלים פיזיקליים - לחץ		
366	A	P	Pneumatic pressure Absolute.	(0.1 kPa a to 350 kPa a]	15 Pa a	Based on Euramet cg 17 Manufacturer instructions SOP 90150314	DPC Druck, Pace 6000 PPC DHI model PPCH-G-70M Fluke 8370A
367	A	P	Pressure indicating instruments and gauges	(350 kPa a to 3.5 MPa a]	300 Pa a		
368	A	P		(3.5 MPa a to 10 MPa a]	900 Pa a		
369	A	P		(10 MPa a to 70 MPa a]	7.25 kPa a		
370	A	P1		(0.1 MPa a to 7.1 MPa a]	4.2 kPa a		
371	A	P1		(7.1 MPa a to 70 MPa a]	7.25 kPa a		
372	A	P	Pneumatic pressure Gauge	[-99.9 kPa to 250 kPa]	15 Pa	Based on Euramet cg 17 Manufacturer instructions SOP 90150314	DPC Druck, Pace 6000 PPC DHI model PPCH-G-70M Fluke 8370A
373	A	P	Pressure indicating instruments and gauges	(250 kPa to 3.5 MPa]	300 Pa		
374	A	P		(3.5 MPa to 10 MPa]	900 Pa		
375	A	P		(10 MPa to 70 MPa]	7.2 kPa		
376	A	P1		[0 MPa to 7 MPa]	4.2 kPa		
377	A	P1		(7 MPa to 70 MPa]	7.2 kPa		
378	A	P	Hydraulic pressure, Gauge.	(6.2 MPa to 41.37 MPa]	7.5 kPa	Based on EURAMET cg17 Manufacturer instruction SOP 10006	Comparison vs. DWT AREMECA BH4 - 4000B
379	A	P	Pressure indicating instruments and gauges	(41.37 MPa to 206.89 MPa]	24 kPa		
380	A	P		(206.89 MPa to 413.5 MPa]	50 kPa		
381	A	P	Hydraulic pressure, Gauge.	(0 MPa to 7 MPa]	5.5 kPa	Based on EURAMET cg17 SOP 90150314	Fluke EDWT
382	A	P	Pressure indicating instruments and gauges	(7 MPa to 200 MPa]	14 kPa		



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		
383	A	P	Absolute pressure, Vacuum gauge	(1.33 Pa to 1.33E+04 Pa]	0.75 %OR	Based on ISO 3567 SOP 90150316	Vacuum Gauges OR-of reading
384	A	P		(0.133 Pa to 1.33 Pa]	1 %OR		
385	A	P		(6.66E-04 Pa to 0.133 Pa]	6 %OR		
386	A	P		(1.33E-05 Pa to 6.66E-04 Pa]	8 %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 - Temperature					כיוול – גדלים פיזיקליים - טמפרטורה			
387	A	P	Temperature.	טמפרטורה	[-80 °C to -40 °C]	0.06 °C	IEC 60751	SPRT, PRT
388	A	P	Thermometers sensors with display with resistance sensors	מדי חום עם תצוגה עם רגש התנגדות	[-40 °C to 100 °C]	0.04 °C	Based on ITS-90	Isotech milliK
389	A	P			0.01 °C (Triple point of water)	0.04 °C	SOP 9015039	Isotech microK, TWP,
390	A	P			(100 °C to 200 °C)	0.05 °C		Calibration baths,
391	A	P			(200 °C to 600 °C)	0.45 °C		Thermocouple calibration furnace
392	A	P			(600 °C to 1000 °C)	1.0 °C		
393	A	P	Temperature.	טמפרטורה	(200 °C to 600 °C)	0.6 °C	Based on Euramet cg8	PRT, TC type S, Calibration
394	A	P	Thermocouples noble metal	צמדים תרמיים, מתכות אצילות	(600 °C to 1000 °C)	1.0 °C	Manufacturer instructions SOP 9015038	baths, Thermocouple calibration furnace
395	A	P	Temperature.	טמפרטורה	(-80 °C to 200 °C)	0.4 °C	Based on Euramet cg8	PRT, TC type S, Calibration
396	A	P	Thermocouples base metal	צמדים תרמיים מתכות בסיסיות	(200 °C to 600 °C)	0.6 °C	ITS-90	baths, Thermocouple calibration furnace
397	A	P	Type K,J,N	משוג N,J,K	(600 °C to 1000 °C)	1.0 °C	SOP 9015038	
398	A	P	Temperature.	טמפרטורה	(-80 °C to 200 °C)	0.4 °C	Based on Euramet cg8	PRT Calibration baths
399	A	P	Thermocouples base metal Type T	צמדים תרמיים מתכות בסיסיות משוג T	(200 °C to 315 °C)	0.6 °C	ITS-90 SOP 9015038	
400	A	T	Temperature,	טמפרטורה	[-25 °C to 140 °C]	0.4 °C	Manufacturer instructions	PRT with Display
401	A	T	Thermometers sensors with display	מדי חום עם תצוגה	(140 °C to 600 °C)	0.5 °C	SOP 9015039	Dry blocks calibrators
402	A	P	Temperature, Temperature indicators and simulators for Resistance sensors	טמפרטורה, מדי ומדמי טמפרטורה עבור מדי התנגדות	[-200 °C to 850 °C]	0.01 °C	EURAMET cg-11 IEC 60751	Calibration by means of electrical calibration,
403	A	T			[-200 °C to 850 °C]	0.1 °C	SOP 10752 SOP 10756 SOP 10650 SOP 10700	



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			
404	A	P	Temperature, Temperature indicators and simulators for Base metal thermocouples type K	טמפרטורה, מדי ומדמי טמפרטורה עבור צמדים תרמיים מתכות בסיסיות מסוג K	[-200 °C to 1370 °C]	0.2 °C	EURAMET cg-11 SOP 10754	Calibration by means of electrical calibration, cold junction compensation on
405	A	T	Base metal thermocouples type K		[-200 °C to 1370 °C]	0.4 °C	SOP 10650, SOP 10700	cold junction compensation off
406	A	P	Temperature, Temperature indicators and simulators for Base metal thermocouples type J	טמפרטורה, מדי ומדמי טמפרטורה עבור צמדים תרמיים מתכות בסיסיות מסוג J	[-200 °C to 1200 °C]	0.2 °C	EURAMET cg-11 SOP 10754	Calibration by means of electrical calibration, cold junction compensation on
407	A	T	Base metal thermocouples type J		[-200 °C to 1200 °C]	0.4 °C	SOP 10650, SOP 10700	cold junction compensation off
408	A	P	Temperature, Temperature indicators and simulators for Base metal thermocouples type T	טמפרטורה, מדי ומדמי טמפרטורה עבור צמדים תרמיים מתכות בסיסיות מסוג T	[-200 °C to 400 °C]	0.2 °C	EURAMET cg-11 SOP 10754	Calibration by means of electrical calibration, cold junction compensation on
409	A	T	Base metal thermocouples type T		[-200 °C to 400 °C]	0.4 °C	SOP 10650 SOP 10700	cold junction compensation off
410	A	P	Temperature, Temperature indicators and simulators for Base metal thermocouples type E	טמפרטורה, מדי ומדמי טמפרטורה עבור צמדים תרמיים מתכות בסיסיות מסוג E	[-200 °C to 1000 °C]	0.2 °C	EURAMET cg-11 SOP 10754	Calibration by means of electrical calibration, cold junction compensation on
411	A	T	Base metal thermocouples type E		[-200 °C to 1000 °C]	0.4 °C	SOP 10650 SOP 10700	cold junction compensation off
412	A	P	Temperature, Temperature indicators and simulators for Noble metal thermocouples type R,S	טמפרטורה, מדי ומדמי טמפרטורה עבור צמדים תרמיים מתכות אצילות מסוג S,R	[-20 °C to 1760 °C]	0.2 °C	EURAMET cg-11 SOP 10754	Calibration by means of electrical calibration, cold junction compensation on
413	A	T	Measure	מודד	[-20 °C to 1760 °C]	0.7 °C	SOP 10650	Cold junction compensation off
414	A	T	Source	מקור	[-20 °C to 1760 °C]	0.4 °C	SOP 10700	
415	A	P,T	Temperature, Furnaces	טמפרטורה, תנורים בקרים לתנורים	[-80 °C to 200 °C]	0.55 °C	AMS 2750F	Thermocouples
416	A	P,T	Furnaces Controller		(-200 °C to 535 °C)	1 °C	IEC 60068-3-5	
417	A	P,T			(535 °C to 1000 °C)	1.6 °C	SOP 9015037	



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						כיול – גדלים פיזיקליים - טמפרטורה		
418	A	P,T	Temperature, Furnaces	טמפרטורה, תנורים	[-80 °C to 200 °C]	0.7 °C	AMS 2750F	Thermocouples
419	A	P,T	Furnaces Controller Including Uniformity	בקרת תנורים כולל אחידות	(200 °C to 535 °C)	1.2 °C	IEC 60068-3-5 SOP 9015037	
420	A	P,T			(535 °C to 1000 °C)	2.2 °C		

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 %.

²) For intermediate points the uncertainty will be determined using linear interpolation between the adjacent points