



ISO/IEC 17025:2017

מעבדות כיוול

## תעודת הסמכה מס' 10 מעבדות הכיוול רפאל

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

עד יום: 23.06.2026

בתוקף מיום: 30.01.2024

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/ 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. 10**  
**Rafael - Calibration Laboratories**

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

**Valid from: 30.01.2024**

**Until: 23.06.2026**

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 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 07/02/2024

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Name and Address:

**Organization name** Rafael - Calibration Laboratories  
**Address** Quality and Maintenance Dept.78  
P.O.B. 2250  
Haifa 31021, Israel  
**Phone** +972-73-335-3952  
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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 +972-73-335-3952
- P1 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 <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
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		
19	A	P	DC Voltage, High Voltage probe פרוב מתח גבוה בורם ישר	[1 kV to 40 kV]	0.1 %	Manufacturer instructions SOP 11400	High Voltage power supply DMM 6.5 digits



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
20	A	P	DC Voltage, Sources	מחוללי מתח בזרם ישר	±100 mV	2 μV/V	Standard cell: Fluke 732A
21	A	P			±1 V	1 μV/V	DMM: Fluke 8508A
22	A	P			±1.018 V	1 μV/V	Main Calibrator: Fluke 732A or Datron 4808
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 <sup>1</sup>	Reference Documents	Remarks		
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>				
37	A	P	DC Current, Measuring Instruments זרם ישר, מכשירי מדידה	100 $\mu$ A	8.5 $\mu$ A/A	Manufacturer instructions SOP 10700	Standard resistors Fluke DMM 8508A Wavetek MTS 4950 Datron Calibrator 4808		
38	A	P		1 mA	4 $\mu$ A/A				
39	A	P		10 mA	4.5 $\mu$ A/A				
40	A	P		100 mA	3.5 $\mu$ A/A				
41	A	P		1 A	4.5 $\mu$ A/A				
42	A	P		10 A	29 $\mu$ A/A				
43	A	P		Open	0.1 nA				
44	A	P		[0 to 200 $\mu$ A]	1.5 nA				
45	A	P		(200 $\mu$ 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 $\mu$ A				
48	A	P		(200 mA to 2 A)	7 $\mu$ A				
49	A	P		(2 A to 11 A)	30 $\mu$ A/A				
50	A	T		Open	0.1 nA				Datron Calibrator 4808
51	A	T		[ 0 $\mu$ A to 20 $\mu$ A]	5 nA				
52	A	T		(20 $\mu$ A to 50 $\mu$ A)	1 nA				
53	A	T		(50 $\mu$ A to 200 $\mu$ A)	9 $\mu$ A/A				
54	A	T		(200 $\mu$ A to 1 mA)	4 nA				
55	A	T		(1 mA to 2 mA)	10 $\mu$ A/A				



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
56	A	T		(2 mA to 10 mA]	0.1 $\mu$ A		
57	A	T		(10 mA to 20 mA]	10 $\mu$ A/A		
58	A	T		(20 mA to 100 mA]	1 $\mu$ A		
59	A	T		(100 mA to 200 mA]	15 $\mu$ A/A		
60	A	T		(200 mA to 500 mA]	21 $\mu$ A		
61	A	T		(500 mA to 2 A]	21 $\mu$ A/A		
62	A	T		(2 A to 5 A]	1 mA		
63	A	T		(5 A to 10 A]	120 $\mu$ A/A		
64	A	P	DC Current, Sources	100 $\mu$ A	8.5 $\mu$ A/A	Manufacturer instructions	Standard resistors
65	A	P		1 mA	3.5 $\mu$ A/A	SOP 10560	Fluke DMM 8508A
66	A	P		10 mA	4.5 $\mu$ A/A	SOP 10650	Wavetek MTS 4950
67	A	P		100 mA	3.5 $\mu$ A/A		Datron 4808
68	A	P		1 A	4.5 $\mu$ A/A		Datron 9100
69	A	P		10 A	24 $\mu$ A/A		Current coils
70	A	P		[0 $\mu$ A to 200 $\mu$ A]	4 nA		Current clamp
71	A	P		(200 $\mu$ A to 2 mA]	17 $\mu$ A/A		
72	A	P		(2 mA to 20 mA]	17 $\mu$ A/A		
73	A	P		(20 mA to 200 mA]	50 $\mu$ A/A		
74	A	P		(200 mA to 2 A]	50 $\mu$ A/A		
75	A	P		(2 A to 11 A]	200 $\mu$ A/A		





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<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>			
76	A	T		[0 μA to 10 μA]	4 nA			
77	A	T		(10 μA to 100 μA]	1 nA			
78	A	T		(100 μA to 200 μA]	1 nA			
79	A	T		(200 μA to 1 mA]	34 nA			
80	A	T		(1 mA to 2 mA]	34 nA			
81	A	T		(2 mA to 10 mA]	1 μA			
82	A	T		(10 mA to 20 mA]	1 μA			
83	A	T		(20 mA to 100 mA]	10 μA			
84	A	T		(100 mA to 200 mA]	10 μA			
85	A	T		(200 mA to 1 A]	74 μA			
86	A	T		(1 A to 2 A]	74 μA/A			
87	A	T		(2 A to 11 A]	182 μA/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 μΩ/Ω	Manufacturer instructions	Standard resistors
90	A	P			0.01 Ω	20 μΩ/Ω	SOP 10800	Datron 4808
91	A	P			0.1 Ω	10 μΩ/Ω		Wavetek 9100
92	A	P			1 Ω	1 μΩ/Ω		Fluke 8508A
93	A	P			10 Ω	2 μΩ/Ω		Wavetek 4950
94	A	P			25 Ω	4 μΩ/Ω		
95	A	P			50 Ω	4 μΩ/Ω		





Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
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		



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<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
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 <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישיר ותדר נמוך</b>		
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 <sup>1</sup>	Reference Documents	Remarks		
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישיר ותדר נמוך</b>				
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	AC Voltage, Sources	מתח חילופין, מחוללים	100 mV	Manufacturer instructions SOP 10650	Datron 4920/4950 Fluke 5730A		
167	A	P			1 kHz			45 μV/V	
168	A	P			30 kHz			60 μV/V	
169	A	P			60 kHz			65 μV/V	
170	A	P			100 kHz			55 μV/V	
171	A	P			300 mV			40 Hz	30 μV/V
172	A	P			1 kHz			30 μV/V	
173	A	P			30 kHz			25 μV/V	
					50 kHz			25 μV/V	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישיר ותדר נמוך</b>		
174	A	P		100 kHz	45 μV/V		
175	A	P		200 kHz	85 μV/V		
176	A	P		500 kHz	180 μV/V		
177	A	P		700 kHz	480 μV/V		
178	A	P		1 MHz	440 μV/V		
179	A	P		10 Hz	25 μV/V		
180	A	P		40 Hz	20 μV/V		
181	A	P		1 kHz	20 μV/V		
182	A	P		30 kHz	20 μV/V		
183	A	P		50 kHz	20 μV/V		
184	A	P		60 kHz	30 μV/V		
185	A	P		100 kHz	30 μV/V		
186	A	P		200 kHz	50 μV/V		
187	A	P		500 kHz	90 μV/V		
188	A	P		700 kHz	300 μV/V		
189	A	P		1 MHz	340 μV/V		
190	A	P		10 Hz	70 μV/V		
191	A	P		40 Hz	45 μV/V		
192	A	P		1 kHz	20 μV/V		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישיר ותדר נמוך</b>		
193	A	P		30 kHz	40 μV/V		
194	A	P		50 kHz	35 μV/V		
195	A	P		100 kHz	40 μV/V		
196	A	P		200 kHz	60 μV/V		
197	A	P		500 kHz	150 μV/V		
198	A	P		700 kHz	300 μV/V		
199	A	P		1 MHz	520 μV/V		
200	A	P		5 V 1 kHz	25 μV/V		
201	A	P		10 V 10 Hz	50 μV/V		
202	A	P		40 Hz	50 μV/V		
203	A	P		1 kHz	45 μV/V		
204	A	P		30 kHz	40 μV/V		
205	A	P		50 kHz	20 μV/V		
206	A	P		60 kHz	40 μV/V		
207	A	P		100 kHz	35 μV/V		
208	A	P		200 kHz	50 μV/V		
209	A	P		500 kHz	180 μV/V		
210	A	P		700 kHz	300 μV/V		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישיר ותדר נמוך</b>		
211	A	P		1 MHz	640 μV/V		
212	A	P		20 V	85 μV/V		
213	A	P		500 kHz	300 μV/V		
214	A	P		700 kHz	355 μV/V		
215	A	P		1 MHz	35 μV/V		
216	A	P		30 V	25 μV/V		
217	A	P		10 Hz	30 μV/V		
218	A	P		40 Hz	30 μV/V		
219	A	P		1 kHz	30 μV/V		
220	A	P		30 kHz	30 μV/V		
221	A	P		50 kHz	30 μV/V		
222	A	P		100 kHz	50 μV/V		
223	A	P		200 kHz	35 μV/V		
224	A	P		100 V	35 μV/V		
225	A	P		10 Hz	35 μV/V		
226	A	P		40 Hz	35 μV/V		
227	A	P		1 kHz	30 μV/V		
228	A	P		30 kHz	25 μV/V		
				50 kHz	35 μV/V		
				60 kHz	45 μV/V		
				100 kHz			





Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
229	A	P		300 V 45 Hz	50 μV/V		
230	A	P		1 kHz	40 μV/V		
231	A	P		5 kHz	50 μV/V		
232	A	P		10 kHz	40 μV/V		
233	A	P		15 kHz	45 μV/V		
234	A	P		20 kHz	40 μV/V		
235	A	P		33 kHz	60 μV/V		
236	A	P		50 kHz	45 μV/V		
237	A	P		100 kHz	70 μV/V		
238	A	P		500 V 100 kHz	135 μV/V		
239	A	P		700 V 50 kHz	165 μV/V		
240	A	P		1000 V 45 Hz	35 μV/V		
241	A	P		1 kHz	25 μV/V		
242	A	P		5 kHz	35 μV/V		
243	A	P		10 kHz	30 μV/V		
244	A	P		15 kHz	50 μV/V		
245	A	P		20 kHz	30 μV/V		
246	A	P		30 kHz	35 μV/V		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישיר ותדר נמוך</b>		
247	A	P		[10 mV to 100 mV]			Datron 4920
248	A	P		[40 Hz to 200 kHz]	520 $\mu$ V/V		Datron 4922
249	A	P		(200 kHz to 500 kHz)	420 $\mu$ V/V		
250	A	P		(500 kHz to 1 MHz)	855 $\mu$ V/V		
251	A	P		(100 mV to 1 V)			
252	A	P		[40 Hz to 200 kHz]	105 $\mu$ V/V		
253	A	P		(200 kHz to 500 kHz)	180 $\mu$ V/V		
254	A	P		(500 kHz to 1 MHz)	470 $\mu$ V/V		
255	A	P		(1 V to 10 V)			
256	A	P		[40 Hz to 200 kHz]	100 $\mu$ V/V		
257	A	P		(200 kHz to 500 kHz)	145 $\mu$ V/V		
258	A	P	AC Voltage. Measuring Instruments	(500 kHz to 1 MHz)	350 $\mu$ V/V		
259	A	P		(10 V to 100 V)			
260	A	P		[40 Hz to 200 kHz]	170 $\mu$ V/V		
261	A	P		(100 V to 1000 V)			
262	A	P		[40 Hz to 30 kHz]	325 $\mu$ V/V		
258	A	P	מתח חילופין, מכשירי מדידה	10 mV		Manufacturer instructions SOP 10700	Fluke 5730A
259	A	P		40 Hz	180 $\mu$ V/V		
260	A	P		200 kHz	245 $\mu$ V/V		
261	A	P		500 kHz	385 $\mu$ V/V		
262	A	P		1 MHz	2420 $\mu$ V/V		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
262	A	P		100 mV 40 Hz	60 μV/V		
263	A	P		1 kHz	50 μV/V		
264	A	P		30 kHz	55 μV/V		
265	A	P		60 kHz	70 μV/V		
266	A	P		100 kHz	70 μV/V		
267	A	P		200 kHz	125 μV/V		
268	A	P		500 kHz	265 μV/V		
269	A	P		1 MHz	815 μV/V		
270	A	P		300 mV 40 Hz	30 μV/V		
271	A	P		1 kHz	25 μV/V		
272	A	P		30 kHz	30 μV/V		
273	A	P		50 kHz	35 μV/V		
274	A	P		100 kHz	45 μV/V		
275	A	P		200 kHz	85 μV/V		
276	A	P		500 kHz	150 μV/V		
277	A	P		700 kHz	590 μV/V		
278	A	P		1MHz	735 μV/V		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישיר ותדר נמוך</b>		
279	A	P		1 V 40 Hz	20 μV/V		
280	A	P		1 kHz	15 μV/V		
281	A	P		30 kHz	20 μV/V		
282	A	P		50 kHz	20 μV/V		
283	A	P		60 kHz	25 μV/V		
284	A	P		100 kHz	35 μV/V		
285	A	P		200 kHz	60 μV/V		
286	A	P		500 kHz	105 μV/V		
287	A	P		700 kHz	320 μV/V		
288	A	P		1 MHz	705 μV/V		
289	A	P		3 V 40 Hz	30 μV/V		
290	A	P		1 kHz	20 μV/V		
291	A	P		30 kHz	20 μV/V		
292	A	P		50 kHz	20 μV/V		
293	A	P		100 kHz	25 μV/V		
294	A	P		200 kHz	85 μV/V		
295	A	P		500 kHz	195 μV/V		
296	A	P		700 kHz	190 μV/V		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
297	A	P		1 MHz	330 μV/V		
298	A	P		5 V	20 μV/V		
299	A	P		10 V	30 μV/V		
300	A	P		40 Hz	20 μV/V		
301	A	P		1 kHz	10 μV/V		
302	A	P		30 kHz	20 μV/V		
303	A	P		50 kHz	20 μV/V		
304	A	P		60 kHz	20 μV/V		
305	A	P		100 kHz	20 μV/V		
306	A	P		200 kHz	65 μV/V		
307	A	P		500 kHz	235 μV/V		
308	A	P		700 kHz	220 μV/V		
309	A	P		1 MHz	220 μV/V		
310	A	P		20 V	165 μV/V		
311	A	P		500 kHz	110 μV/V		
312	A	P		700 kHz	110 μV/V		
313	A	P		1 MHz	30 μV/V		
				30 V	20 μV/V		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישיר ותדר נמוך</b>		
314	A	P		30 kHz	25 μV/V		
315	A	P		50 kHz	30 μV/V		
316	A	P		100 kHz	45 μV/V		
317	A	P		200 kHz	45 μV/V		
				100 V			
318	A	P		40 Hz	30 μV/V		
319	A	P		1 kHz	20 μV/V		
320	A	P		30 kHz	30 μV/V		
321	A	P		50 kHz	30 μV/V		
322	A	P		60 kHz	35 μV/V		
323	A	P		100 kHz	50 μV/V		
				300 V			
324	A	P		45 Hz	40 μV/V		
325	A	P		1 kHz	45 μV/V		
326	A	P		5 kHz	35 μV/V		
327	A	P		10 kHz	40 μV/V		
328	A	P		15 kHz	35 μV/V		
329	A	P		20 kHz	35 μV/V		
330	A	P		33 kHz	50 μV/V		
331	A	P		50 kHz	40 μV/V		
332	A	P		100 kHz	85 μV/V		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
333	A	P		500 V			
				100 kHz	70 μV/V		
334	A	P		700 V			
				50 kHz	35 μV/V		
335	A	P		1000 V			
				45 Hz	60 μV/V		
336	A	P					
				1 kHz	70 μV/V		
337	A	P					
				5 kHz	60 μV/V		
338	A	P					
				10 kHz	60 μV/V		
339	A	P					
				15 kHz	60 μV/V		
340	A	P					
				20 kHz	85 μV/V		
341	A	P					
				30 kHz	75 μV/V		
342	A	P		[10 mV to 100 mV]			OR – of reading
				(40 Hz to 200 kHz)	(0.26 - 1.3OR) mV/V		
343	A	P					
				(200 kHz to 500 kHz)	(0.4 - 1.3OR) mV/V		
344	A	P					
				(500 kHz to 1 MHz)	(2.6 - 18OR) mV/V		
345	A	P		(100 mV to 1 V)			
				[40 Hz to 200 kHz]	(0.13 - 0.072OR) mV/V		
346	A	P					
				(200 kHz to 500 kHz)	(0.28 - 0.018OR) mV/V		
347	A	P					
				(500 kHz to 1 MHz)	(0.83 - 0.12OR) mV/V		





Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
348	A	P		(1 V to 10 V) [40 Hz to 200 kHz]	(59 + 0.56OR) $\mu$ V/V		
349	A	P		(200 kHz to 500 kHz)	(91 + 14OR) $\mu$ V/V		
350	A	P		(500 kHz to 1 MHz)	(760 - 52OR) $\mu$ V/V		
351	A	P		(10 V to 100 V) [40 Hz to 200 kHz]	(67 - 0.17OR) $\mu$ V/V		
352	A	P		(100 V to 1000 V) [40 Hz to 30 kHz]	(25 + 0.05OR) $\mu$ V/V		
353	A	T		[10 mV to 100 mV] [40 Hz to 200 kHz]	(2.7 - 16OR) mV/V		
354	A	T		(200 kHz to 500 kHz)	(4.5 + 24OR) mV/V		
355	A	T		(500 kHz to 1 MHz)	(6.4 - 24OR) mV/V		
356	A	T		(100 mV to 1V) [40Hz to 100 kHz]	(1.1 - 0.61OR) mV/V		
357	A	T		(100 kHz to 300 kHz)	(2.1 - 0.61OR) mV/V		
358	A	T		(300 kHz to 1 MHz)	(4.1 - 1.6OR) mV/V		
359	A	T		(1 V to 10 V) [40 Hz to 200 kHz]	(0.53 - 0.013OR) mV/V		
360	A	T		(200 kHz to 500 kHz)	1.5 mV/V		
361	A	T		(500 kHz to 1 MHz)	(2.5 - 0.024OR) mV/V		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks	
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>			
362	A	T		(10 V to 100 V] [40 Hz to 200 kHz]	(0.42 - 0.0023OR) mV/V			
363	A	T		(100 V to 1000 V] [40 Hz to 30 kHz]	(128 + 0.62OR) μV/V			
364	A	P	AC Current Measuring Instruments	זרם חילופין מכשירי מדידה	1 mA	Manufacturer instructions SOP 10574	AVMS Datron 4920, Shunt Adapter Datron 4921, Shunt adapter Rafael 4921R, Current Shunt A40, A40A, Datron Calibrator 4808, Datron 4600, Datron 9100, Current coils	
365	A	P		300 Hz	240 μA/A			
366	A	P		1 kHz	240 μA/A			
367	A	P		5 kHz	240 μA/A			
368	A	P		10 mA				
369	A	P		300 Hz	235 μA/A			
370	A	P		1 kHz	235 μA/A			
371	A	P		5 kHz	235 μA/A			
372	A	P		100 mA				
373	A	P		300 Hz	235 μA/A			
374	A	P		1 kHz	235 μA/A			
375	A	P		5 kHz	235 μA/A			
				1 A				
				300 Hz	245 μA/A			
				1 kHz	245 μA/A			
				5 kHz	245 μA/A			



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
376	A	P		10 A 300 kHz	360 μA/A		
377	A	P		1 kHz	360 μA/A		
378	A	P		5 kHz	360 μA/A		
379	A	P		[1 mA to 2 mA] [10 Hz to 1 kHz]	240 μA/A		
380	A	P		(1 kHz to 5 kHz)	250 μA/A		
381	A	P		(2 mA to 5 mA) [10 Hz to 1 kHz]	370 μA/A		
382	A	P		(1 kHz to 5 kHz)	400 μA/A		
383	A	P		(5 mA to 20 mA) [10 Hz to 1 kHz]	255 μA/A		
384	A	P		(1 kHz to 5 kHz)	280 μA/A		
385	A	P		(20 mA to 50 mA) [10 Hz to 1 kHz]	380 μA/A		
386	A	P		(1 kHz to 5 kHz)	410 μA/A		
387	A	P		(50 mA to 200 mA) [10 Hz to 1 kHz]	260 μA/A		
388	A	P		(1 kHz to 5 kHz)	285 μA/A		
389	A	P		(200 mA to 500 mA) [10 Hz to 1 kHz]	490 μA/A		
390	A	P		(1 kHz to 5 kHz)	660 μA/A		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
391	A	P		(500 mA to 2 A) [10 Hz to 1 kHz]	360 μA/A		
392	A	P		(1 kHz to 5 kHz)	485 μA/A		
393	A	P		(2 A to 11 A) [10 Hz to 1 kHz]	400 μA/A		
394	A	P		(1 kHz to 5 kHz)	460 μA/A		
395	A	P		(11 A to 20 A) [10 Hz to 3 kHz]	2.1 mA/A		
396	A	P		(3 kHz to 5 kHz)	6 mA/A		
397	A	P		(20 A to 200 A) [10 Hz to 100 Hz]	2.6 mA/A		
398	A	P		(100 Hz to 440 Hz)	8 mA/A		
399	A	P		(200 A to 1000 A) [10 to 100 Hz]	4 mA/A	Manufacturer instructions SOP 10700	Fluke 5730A Datron 4600 Datron 9100 Current coils
400	A	T		[1 mA to 2 mA] [10 Hz to 1 kHz]	620 μA/A		
401	A	T		(1 kHz to 5 kHz)	720 μA/A		
402	A	T		(2 mA to 5 mA) [10 kHz to 1 kHz]	1.3 mA/A		
403	A	T		(1 kHz to 5 kHz)	1.4 mA/A		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישיר ותדר נמוך</b>		
404	A	T		(5 mA to 20 mA) [10 Hz to 1 kHz]	0.8 mA/A		
405	A	T		(1 kHz to 5 kHz)	0.9 mA/A		
406	A	T		(20 mA to 50 mA) [10 Hz to 1 kHz]	1.3 mA/A		
407	A	T		(1 kHz to 5 kHz)	1.4 mA/A		
408	A	T		(50 mA to 200 mA) [10 Hz to 1 kHz]	0.8 mA/A		
409	A	T		(1 kHz to 5 kHz)	0.9 mA/A		
410	A	T		(200 mA to 500 mA) [10 Hz to 1 kHz]	1.5 mA/A		
411	A	T		(1 kHz to 5 kHz)	1.7 mA/A		
412	A	T		(500 mA to 2 A) [10 Hz to 1 kHz]	0.96 mA/A		
413	A	T		(1 kHz to 5 kHz)	1.3 mA/A		
414	A	T		(2 A to 11 A) [10 Hz to 1 kHz]	0.86 mA/A		
415	A	T		(1 kHz to 5 kHz)	1.6 mA/A		
416	A	T		(11 A to 20 A) [10 Hz to 3 kHz]	2.1 mA/A		
417	A	T		(3 kHz to 5 kHz)	6.0 mA/A		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
418	A	T		(20 A to 200 A) [10 Hz to 100 kHz]	2.6 mA/A		
419	A	T		(100 Hz to 440 Hz)	8.0 mA/A		
420	A	T		(200 A to 1000 A) [10 Hz to 100 Hz]	4 mA/A		
421	A	P	AC Current Sources	זרם חילופין מחוללים 1 mA		Manufacturer instructions SOP 10570 SOP 10650	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
422	A	P		300 Hz	240 μA/A		
423	A	P		1 kHz	240 μA/A		
424	A	P		5 kHz	240 μA/A		
425	A	P		10 mA			
426	A	P		300 Hz	240 μA/A		
427	A	P		1 kHz	240 μA/A		
428	A	P		5 kHz	240 μA/A		
429	A	P		100 mA			
430	A	P		300 Hz	240 μA/A		
431	A	P		1 kHz	240 μA/A		
432	A	P		5 kHz	240 μA/A		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
433	A	P		10 A			
434	A	P		300 Hz	350 μA/A		
435	A	P		1 kHz	350 μA/A		
436	A	P		5 kHz	350 μA/A		
437	A	P		[1 mA to 2 mA]			
438	A	P		[10 Hz to 49 Hz]	240 μA/A		
439	A	P		[51 Hz to 1 kHz]	240 μA/A		
440	A	P		(49 Hz to 51 Hz)	490 μA/A		
441	A	P		(2 mA to 5 mA)			
442	A	P		[10 Hz to 49 Hz]	380 μA/A		
443	A	P		[51 Hz to 1 kHz]	400 μA/A		
444	A	P		(49 Hz to 51 Hz)	510 μA/A		
445	A	P		(5 mA to 20 mA)			
446	A	P		[10 Hz to 49 Hz]	260 μA/A		
447	A	P		[51 Hz to 1 kHz]	260 μA/A		
				(49 Hz to 51 Hz)	310 μA/A		
				(20 mA to 50 mA)			
				[10 Hz to 1 kHz]	420 μA/A		
				(1 kHz to 5 kHz)	425 μA/A		
				(50 mA to 200 mA)			
				[10 Hz to 1 kHz]	270 μA/A		





Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישיר ותדר נמוך</b>		
448	A	P		(1 kHz to 5 kHz)	290 $\mu$ A/A		
449	A	P		(200 mA to 500 mA)	500 $\mu$ A/A		
450	A	P		[10 Hz to 1 kHz]	670 $\mu$ A/A		
451	A	P		(1 kHz to 5 kHz)	370 $\mu$ A/A		
452	A	P		(500 mA to 2 A)	490 $\mu$ A/A		
453	A	P		[10 Hz to 1 kHz]	400 $\mu$ A/A		
454	A	P		(1 kHz to 5 kHz)	460 $\mu$ A/A		
455	A	P		(2 A to 11 A)	2.1 mA/A		
456	A	P		[10 Hz to 3 kHz]	6.0 mA/A		
457	A	P		(3 kHz to 5 kHz)	2.6 mA/A		
458	A	P		(20 A to 200 A)	8.0 mA/A		
459	A	P		[10 Hz to 100 Hz]	4.0 mA/A		
460	A	P	AC Resistance, Measuring Instruments	התנגדות זרם חילופין, מכשירי מדידה 10 $\Omega$	1.5 m $\Omega$ / $\Omega$	Manufacturer instructions SOP 10980	HP AC Resistors
461	A	P		100 $\Omega$	1.5 m $\Omega$ / $\Omega$		
				100 kHz			



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>						<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
462	A	P			1 kΩ 100 kHz	2.3 mΩ/Ω		
463	A	P			10 kΩ 100 kHz	2.3 mΩ/Ω		
464	A	P			100 kΩ 100 kHz	3.5 mΩ/Ω		
465	A	P			10 Ω 1 MHz	1.5 mΩ/Ω		
466	A	P			100 Ω 1 MHz	1.5 mΩ/Ω		
467	A	P			1 kΩ 1 MHz	2.3 mΩ/Ω		
468	A	P			10 kΩ 1 MHz	2.3 mΩ/Ω		
469	A	P			10 Ω 10 MHz	2.1 mΩ/Ω		
470	A	P			100 Ω 10 MHz	3.5 mΩ/Ω		
471	A	P			1 kΩ 10 MHz	3.5 mΩ/Ω		
472	A	P	AC Resistance, Resistors	התנגדות זרם חילופין, מחוללים	10 Ω 100 kHz	1.5 mΩ/Ω	Manufacturer instructions SOP 10985	LCR HP AC Resistors
473	A	P			100 Ω 100 kHz	1.5 mΩ/Ω		
474	A	P			1 kΩ 100 kHz	2.3 mΩ/Ω		
475	A	P			10 kΩ 100 kHz	2.3 mΩ/Ω		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
476	A	P		100 kΩ			
				100 kHz	3.5 mΩ/Ω		
477	A	P	Capacitance, Measuring Instruments קיבול, מכשירי מדידה	10 nF		Manufacturer instructions SOP 10980	HP Standard Capacitors GR standard Capacitors
478	A	P		120 Hz	0.4 mF/F		
479	A	P		1 kHz	0.4 mF/F		
480	A	P		10 kHz	0.6 mF/F		
481	A	P		100 kHz	1.6 mF/F		
482	A	P		100 nF			
483	A	P		120 Hz	0.4 mF/F		
484	A	P		1 kHz	0.3 mF/F		
485	A	P		10 kHz	1 mF/F		
486	A	P		100 kHz	3 mF/F		
487	A	P		1 μF			
488	A	P		120 Hz	0.6 mF/F		
489	A	P		1 kHz	0.3 mF/F		
490	A	P		10 kHz	0.8 mF/F		
491	A	P	1 pF				
				1 kHz	2 mF/F		
				1 MHz	4 mF/F		
				10 MHz	13 mF/F		
				13 MHz	13 mF/F		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
492	A	P		10 pF			
493	A	P		1 kHz	0.3 mF/F		
494	A	P		1 MHz	0.8 mF/F		
495	A	P		10 MHz	2.5 mF/F		
496	A	P		13 MHz	2.5 mF/F		
497	A	P		100 pF			
498	A	P		1 kHz	0.6 mF/F		
499	A	P		1 MHz	0.6 mF/F		
500	A	P		10 MHz	2 mF/F		
501	A	P		13 MHz	2 mF/F		
502	A	P		1000 pF			
503	A	P		1 kHz	0.3 mF/F		
504	A	P	Capacitance, Capacitors	10 nF		Manufacturer instructions SOP 10985	LCR HP Standard Capacitors GR Capacitors
505	A	P	קיבול, קבלים	120 Hz	0.4 mF/F		
506	A	P		1 kHz	0.4 mF/F		
507	A	P		10 kHz	0.6 mF/F		
508	A	P		100 kHz	1.6 mF/F		
509	A	P		100 nF			
510	A	P		120 Hz	0.4 mF/F		
511	A	P		1 kHz	0.3 mF/F		
				10 kHz	1 mF/F		
				100 kHz	3 mF/F		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישיר ותדר נמוך</b>		
512	A	P		1 $\mu$ F			
				120 Hz	0.6 mF/F		
513	A	P		1 kHz	0.3 mF/F		
514	A	P		10 kHz	0.8 mF/F		
				1 pF			
515	A	P		1 kHz	2 mF/F		
				10 pF			
516	A	P		1 kHz	0.3 mF/F		
				100 pF			
517	A	P		1 kHz	0.6 mF/F		
				1000 pF			
518	A	P		1 kHz	0.3 mF/F		
519	A	P	Inductance, Measuring Instruments	100 $\mu$ H		Manufacturer instructions SOP 10980	GR Inductors
				1 kHz	0.7 mH/H		
520	A	P		1 mH	0.3 mH/H		
				1 kHz			
521	A	P		10 mH	0.4 mH/H		
				1 kHz			
522	A	P		100 mH	0.3 mH/H		
				1 kHz			
523	A	P		1 H	0.6 mH/H		
				1 kHz			
524	A	P		10 H	0.5 mH/H		
				400 Hz			



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - DC and LF</b>					<b>כיוול – גדלים חשמליים - זרם ישר ותדר נמוך</b>		
525	A	P	Inductance, Inductors השראות, משרנים	100 μH	0.7 mH/H	Manufacturer instructions SOP 10985	LCR GR Tech Inductors
				1 kHz			
526	A	P		1 mH			
				1 kHz			
527	A	P		10 mH			
				1 kHz			
528	A	P	Inductance, Inductors השראות, משרנים	100 mH	0.4 mH/H	Manufacturer instructions SOP 10985	LCR GR Tech Inductors
				1 kHz			
529	A	P		1 H			
				1 kHz			
530	A	P	Inductance, Inductors השראות, משרנים	10 H	0.5 mH/H	Manufacturer instructions SOP 10985	LCR GR Tech Inductors
				400 Hz			
531	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
532	A	P;T		[100 Hz to 1 kHz]	1 μHz		
533	A	P		(1 kHz to 10 MHz]	1 mHz		
534	A	P		(10 MHz to 100 MHz]	6 mHz		
535	A	P		(100 MHz to 1 GHz]	65 mHz		
536	A	T		[100 Hz to 10 MHz]	1 mHz		
537	A	T		(10 MHz to 100 MHz]	25 mHz		
538	A	T		(100 MHz to 1 GHz]	65 mHz		
539	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 <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - Magnetic Field and Flux</b>					<b>כיוול – גדלים חשמליים - שטף ושדה מגנטי</b>		
540	A	P	Magnetism, Measuring Instruments	[0.5 G to 10 G]	0.1 G	Manufacturer instructions SOP 11500	Helmutz Coil Reference Magnets (Transverse probs) O.R. – Of Reading
541	A	P	Gauss Meter, DC	[10 G to 60 G]	1% O.R.		
542	A	P		500 G	1% O.R.		
543	A	P		1000 G	1% O.R.		
544	A	P		5000 G	1% O.R.		





Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities - RF Frequency, Time</b>					<b>כיוול – גדלים חשמליים - תדר גבוה, זמן</b>		
545	A	P;T	Frequency.	(80 MHz to 1500 MHz]	2.3 mHz	Manufacturer instructions SOP 10924	SPECTRUM - PSA-E4448A GPS 910R
546	A	P;T	Sources	(1500 MHz to 6 GHz]	3.3 mHz		
547	A	P;T		(6 GHz to 50 GHz]	24 mHz		
548	A	P;T	Frequency.	[10 Hz to 100 kHz]	2.5 μHz	Manufacturer instructions SOP 10910	GENERATOR -33600A , E8257D GPS 910R Rubidium
549	A	P;T	Measuring Instruments	(100 kHz to 350 MHz]	6 mHz		
550	A	P;T		(350 MHz to 6 GHz]	100 mHz		
551	A	P;T		(6 GHz to 15 GHz]	0.25 Hz		
552	A	T		[10 Hz to 100 kHz]	1 mHz		
553	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
554	A	P;T	Bandwidth	מדידת רוחב פס של משקף תנודות	Up to 67 GHz	SOP 10974	NRPT67T, PSG - E8257D
555	A	P;T	Input Resistance	מדידת התנגדות כניסה של משקף תנודות	50 Ω	Manufacturer instructions SOP 10974	
556	A	P;T			1 MΩ		
557	A	P;T	Rise Time,	מדידת זמן עליה	Input impedance 50 Ω	Manufacturer instructions SOP 10975	Wavemaster 820ZI-B



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities – HF Electrical Power and Energy</b>					<b>כיוול – גדלים חשמליים - הספק ואנרגיה חשמלית בתדר גבוה</b>		
558	A	P;T	Power, Sources	[50 MHz to 20 GHz]	40 mW/W	Manufacturer instructions SOP 10925	Reference Power Sensor Reference Power Meter (1mwatt)
559	A	P;T		(20 GHz to 40 GHz)	51 mW/W		
560	A	P;T		(40 GHz to 50 GHz)	65 mW/W		
561	A	P;T	Power, Power Sensors Cal Factor	[100 MHz to 10 GHz]	17 mW/W	Manufacturer instructions SOP 10945	Reference Power Sensor
562	A	P;T		(10 GHz to 20 GHz)	30 mW/W		
563	A	P;T		(20 GHz to 50 GHz)	45 mW/W		
564	A	P;T	Attenuation, Attenuators	[1 kHz to 100 MHz] [10 dB to 30 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
565	A	P;T		[0.1 GHz to 1 GHz] [10 dB to 20 dB]			
566	A	P;T		[20 dB to 30 dB]			
567	A	P;T		[30 dB to 60 dB]			
568	A	P;T		[60 dB to 70 dB]			
569	A	P;T		[1 GHz to 18 GHz] [10 to 20 dB]			
570	A	P;T		[20 to 30 dB]			
571	A	P;T		[30 to 60 dB]			
572	A	P;T		[60 dB to 70 dB]			
573	A	P;T		70 dB			



Department: Calibration Laboratory ISO/IEC 17025: 2017

Accreditation No. 0010

Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Electrical Quantities – HF Electrical Power and Energy</b>					<b>כיוול – גדלים חשמליים - הספק ואנרגיה חשמלית בתדר גבוה</b>		
574	A	P;T	Amplitude Modulation (AM), Depth of Signals אפנון משרעת, עומק אפנון	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 <sup>9</sup> ]	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 <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Mechanical Quantities – Accelerometers</b>					<b>כיוול – גדלים מכניים – מדי תאוצה</b>		
575	A	P	Acceleration Piezoelectric type accelerometer	מד תאוצה פייזואלקטרי	[5 m/s <sup>2</sup> to 100 m/s <sup>2</sup> ] [2 Hz to 80 Hz]	ISO 16063-21 SOP 10040	Endevco CAACS (Commercial Automated Accelerometer Calibration system)
576	A	P			[80 Hz – 2.5 kHz]	1.2 %	
577	A	P			[2.5 kHz to 10 kHz]	2.5 %	
578	A	P	Acceleration Piezoresistive type accelerometer	מד תאוצה פייזורזיסטיבי	[5 m/s <sup>2</sup> to 100 m/s <sup>2</sup> ] [2 Hz to 80 Hz]	ISO 16063-21 SOP 10040	Endevco CAACS (Commercial Automated Accelerometer Calibration system)
579	A	P			[80 Hz – 2.5 kHz]	1.2 %	
580	A	P			[2.5 kHz to 10 kHz]	2.5 %	
581	A	P	Acceleration Piezoelectric type accelerometer	מד תאוצה	[1000 m/s <sup>2</sup> to 10 000 m/s <sup>2</sup> ]	ISO 16063-22	Endevco Comparison Shock Calibrator Model 2925
582	A	P	Shock Calibration	כיוול הלם	(10 000 m/s <sup>2</sup> to 100 000 m/s <sup>2</sup> )	SOP 10040	



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Mechanical Quantities – CMM Measuring Machines</b>						<b>כיוול – גדלים מכניים – מכשירי מדידה תלת ממדיים</b>		
583	A	P,T	Length, CMM Measuring Machine	אורך, מכונת מדידה תלת ממדיות	20 mm to 2000 mm	$[0.2 \mu\text{m} + 2 \cdot L] \mu\text{m}$	ISO 10360-2 ISO 10360-5 SOP 10025	L in meters Check Master Accurate Ball Gauge
584	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 <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Mechanical Quantities – Form, Angle</b>					<b>כיוול – גדלים מכניים – צורה, זווית</b>		
585	A	P,T	Form, Flatness, Surface Plates צורה, שטוחות, פלטת גרניט	Up to 2 mm	1 µm	DIN 876 JIS B 7513 ASME B89.3.7 ISO 8512-part 2 SOP 10032	Electronic Levels L in meters diagonal Granite, Cast Iron For surfaces up to 2000 mm in diagonal
586	A	P	Squares.	Up to 0.02 mm	1.5 µm	BS 939 DIN 875	Electronic head, Square master
587	A	P	Squareness, straightness, flatness, Base parallelism	Up to 500 mm	1.4 µm	JIS B 7526 Manufacturer instructions SOP 9150113	
588	A	P	Parallelism, Parallels, Steel and Granite	Up to 400 mm	1.4 µm	DIN 6346 BS 906 part 1 and 2 SOP 9150122	Surface plate, electronic head
589	A	P	Angle, Vee Blocks Squareness, Flatness and Parallelism	Up to 200 mm	1.4 µm	DIN 2274 BS 3731 SOP 9150117	Accurate cylinders, surface plate, electronic head, square master
590	A	P	Parallelism of V-axis to the base	Up to 200 mm	2.2 µm		
591	A	P	Angle, Rotary table	Up to 360°	0.5 "	Manufacturer instructions SOP 9150130	Autocollimator, polygon
592	A	P	Angle, Electronic Levels	Up to 360°	3.5 '	BS 958 Manufacturer instructions SOP 9150118	Rotary table Indication 0.1°
593	A	P			1.1 '		Indication 0.01°
594	A	P	Inclinometer	45 °	3.1 "	Manufacturer instructions SOP 10027	Rotary table, DVM



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Mechanical Quantities - Hardness Meters</b>					<b>כיוול – גדלים מכניים - מדי קושיות</b>		
595	A	T	Rockwell hardness scale, Rockwell hardness testing machines	קשיות רוקוול, מכונות לבדיקת קשיות רוקוול	HRC [20 to 65]	ASTM E-18 SOP 10018	Indirect verification, i.e. Calibration by comparison to reference materials.
596	A	T			HRBW [40 to 100]		
597	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 48-9 SOP 10028	Balance and device for durometer calibration CNC (MicroVu)
598	A	P	Indenter extension	אורך החודרן	[2.46 to 2.54] mm		
599	A	P	Indenter diameter	קוטר החודרן	[0.76 to 0.82] mm		
600	A	P			[1.1 to 1.4] mm		
601	A	P	Indenter angle	זווית החודרן	[34.75° to 35.25°]		
602	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 48-9 SOP 10028	
603	A	P	Indenter extension	אורך החודרן	[2.46 to 2.54] mm		
604	A	P	Indenter diameter	קוטר החודרן	[1.1 to 1.4] mm		
605	A	P	Indenter radius	רדיוס החודרן	[0.088 to 0.112] mm		
606	A	P	Indenter angle	זווית החודרן	[29.5° to 30.5°]		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks		
<b>Calibration – Mechanical Quantities - Length</b>					<b>כיוול – גדלים מכניים - אורך</b>				
607	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		
608	A	P						(10 mm to 25 mm)	0.11 μm   0.18 μm
609	A	P						(25 mm to 60 mm)	0.14 μm   0.22 μm
610	A	P						(60 mm to 90 mm)	0.19 μm   0.27 μm
611	A	P						(90 mm to 100 mm)	0.25 μm   0.34 μm
612	A	P						[125 mm up to 1000 mm]	0.5 μm
613	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		
614	A	P	Length, Micrometer extension rod	אורך, מוטות הארכה למיקרומטר [25 mm to 1000 mm]	0.5 μm	ISO 3611 SOP 9150127	Gauge block, Measuring machines L in meters		
615	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		
616	A	P						(90 mm to 300 mm)	0.4 μm
617	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		
618	A	P						(25 mm to 200 mm)	1.0 μm
619	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 <sup>1</sup>	Reference Documents	Remarks	
<b>Calibration – Mechanical Quantities - Length</b>					<b>כיוול – גדלים מכניים - אורך</b>			
620	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
621	A	P	Measuring Pins	מדידי קדח	[1 mm to 25.4 mm]	0.5 μm	SOP 10050	Laser measuring machine
622	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
623	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 ASME B1.1, ASME B1.2 ASME B1.9 ISO 965/1 ISO 68/1 BS 1580 1/3 SOP 9150124	Gauge Blocks Measuring machine Measuring pins
624	A	P	Diameter, Pitch diameter, Major/Minor diameter Thread Plug gauges	קוטר, קוטר אפקטיבי, קוטר "גדול"/"קטן" מדידי הברגה זכר	[1 mm to 155 mm]	1.5 μm	ISO 228/1/2 ISO 1502 BS 84 BS 919/1/2/3	Master Scanner (IAC)
625	A	P	Diameter, Pitch diameter Thread Ring gauges	קוטר, קוטר אפקטיבי, קוטר "גדול"/"קטן" מדידי הברגה טבעת	[4 mm to 160 mm]	1.5 μm	ASME B1.1, ASME B1.2	
626	A	P	Length, Pitch	אורך, פסיעה	[ 0.25 mm to 4 mm]	0.75 μm	ASME B1.9 ISO 965/1	
627	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 SOP 10060	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Mechanical Quantities - Length</b>					<b>כיוול – גדלים מכניים - אורך</b>		
628	A	P	Diameter, Plain Plug gauge	קוטר, מדיד תקע חלק [1 mm to 155 mm]	1 μm	SOP 10060 DIN 7164 JIS B 7420	
629	A	P	Diameter, Plain Ring gauge	קוטר, מדיד טבעת חלק [2.5 mm to 160 mm]	1 μm	SOP 10060	
630	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 ASME B1.1, ASME B1.2 ASME B1.9 ISO 965/1 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
631	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
632	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
633	A	P	Length, Vernier, Depth, Dial and Digital Caliper	אורך, זחון וורניר, עומק, חוגן ודיגיטלי Up to 1000 mm]	8 μm	Based on JIS B 7507	Check master; length bars, gauge blocks. Measurement uncertainty is calculated according to ISO 13385-1,2
634	A	P	Digital Caliper	(1000 mm to 2000 mm]	15 μm	ISO 13385-1,2 SOP 9150105	
635	A	P;T	Length, Height Gauge	אורך, מד גובה Up to 1000 mm]	(1 μm+2.8L) μm	Based on JIS B 7517 ISO 13225 SOP 10051	Check master; length bars, gauge blocks, indicator tester. CMC values stand for instruments that have resolution of 0.0001 mm. L in meter



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Mechanical Quantities - Length</b>					<b>כיוול – גדלים מכניים - אורך</b>		
636	A	P	Length, Micrometer External אורך, מיקרומטר חיצוני	[Up to 400 mm]	$(1.6 \mu\text{m} + 5.5 \cdot L) \mu\text{m}$	Based on JIS B 7502 JIS B 7520 DIN 863 part 1 ISO 3611 SOP 10052	Gauge blocks, micrometer setting rods. L in meters
637	A	P		[400 mm to 1000 mm]	$(3 \mu\text{m} + 1.1 \cdot L) \mu\text{m}$		
638	A	P	Length, Micrometer Head אורך, ראש מיקרומטר	Up to 50 mm]	1.1 $\mu\text{m}$	Based on JIS B 7502 BS 1734 DIN 863 part 2 SOP 10021	Gauge blocks, electrical gauge head L in meters
639	A	P	Length, Micrometer Depth אורך, מיקרומטר עומק	Up to 300 mm]	$(2 \mu\text{m} + 10 \cdot L) \mu\text{m}$	DIN 863 part 2 SOP 9150106	Gauge Blocks L in meters
640	A	P	Diameter, Internal Three-point internal micrometer קוטר פנימי, מיקרומטר פנימי 3 נקודות	Up to 90 mm]	1.7 $\mu\text{m}$	DIN 863 part 4 SOP 9150129	Plain ring gauges
641	A	P		(90 mm to 200 mm]	1.9 $\mu\text{m}$		
642	A	P	Length, Inside micrometer אורך מיקרומטר פנימי	Up to 75 mm]	1.3 $\mu\text{m}$	Based on DIN 863 part 4 SOP 10023	Setting rings
643	A	P	Length, Dial Gauge, lever אורך, חוגן מנופי	Up to 0.8 mm]	0.8 $\mu\text{m}$	Based on JIS B 7533 DIN EN ISO 9493 DIN 2270 SOP 9150103	Indication 0.001 mm
644	A	P		Up to 0.2 mm]	1 $\mu\text{m}$		Indication 0.002 mm
645	A	P		(0.8 mm to 3 mm]	1 $\mu\text{m}$		Indication 0.01 mm



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Mechanical Quantities - Length</b>					<b>כיוול – גדלים מכניים - אורך</b>		
646	A	P	Length, Dial indicator	אורך, חוּגוּן Up to 0.05 mm	0.4 μm	Based on DIN 879 part 1	Indication 0.005 mm
647	A	P		Up to 5 mm	0.42 μm	DIN 878	Indication 0.001 mm
648	A	P		Up to 100 mm]	1 μm	JIS B 7503 BS EN ISO 463	Indication 0.01 mm
649	A	P		(100 mm to 150 mm]	(0.85 μm + 5.5·L) μm	ISO 13102 SOP 9150107	Indicator Tester L in meters
650	A	P	Length, Indicator Tester	אורך, בודק חוגנים Up to 25 mm	0.5 μm	Based on JIS B 7502 Manufacturer instructions SOP 9150134	Indication 0.001 mm Gauge blocks
651	A	P	Length, LVDT	אורך, מתמר אורך Up to 50 mm	27 μm	Manufacturer instructions SOP 10022	Indicator Tester DVM
652	A	P	Length Electronic probe	אורך גשש אלקטרוני Up to 60 mm	0.14 μm		Gauge blocks
653	A	P	Length, Height Gauge Micrometric	אורך, מד גובה מיקרומטרי Up to 300 mm	3 μm	Manufacturer instructions SOP 9150109	Gauge blocks, electrical gauge head
654	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
655	A	P	Laser measuring machine	מכונת מדידה לייזר Up to 25.4 mm	0.22 μm		Measuring pins
656	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
657	A	P	Length, Feeler gauge	אורך, מד מרווח Up to 1 mm	0.5 μm	JIS B 7524 DIN 2275 SOP 10055	Certo



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks				
<b>Calibration – Mechanical Quantities - Length</b>					<b>כיוול – גדלים מכניים - אורך</b>						
658	A	P	Coating thickness gauge, Thickness	מד עובי ציפוי, עובי	(11 µm to 100 µm)	1.5 µm	SOP 10056 ASTM D7091	Foil			
659	A	P		(100 µm to 1000 µm)	4.5 µm						
660	A	P		(1000 µm to 1500 µm)	8 µm						
661	A	P		(1500 µm to 13000 µm)	26 µm						
662	A	P		(13000 µm to 30000 µm)	80 µm						
663	A	P	Foil	רדיד	Up to 100 µm	0.5 µm	SOP 10056	CT60 Electronic length gauge			
664	A	P		(100 µm to 2000 µm)	1.5 µm						
665	A	P		(2000 µm to 13000 µm)	24 µm						
666	A	P		(13000 µm to 25000 µm)	46 µm						
667	A	P, T	Torque arm	זרוע מומנט	10"	0.045 mm	SOP 10058	CMM			
668	A	P, T		2.835"	0.035 mm						
669	A	T	Profile projector, Magnification	מטול אופטי, הגדלה	Up to 100 M	0.0092 %	Manufacturer instructions JIS B 7184 SOP 10026	Glass scale M - Magnification Screen sizes up to 300 mm			
670	A	T		Profile projector, Axis accuracy	מטול אופטי, דיוק צירים	Up to 300 mm			2 µm	Glass scale	
671	A	T		Profile projector, Angle accuracy	מטול אופטי, דיוק זוויתי	1" to 90°			1.1'	Angle block gauges	
672	A	P,T		CNC, video measuring system, length measurement		Up to 300 mm			1 µm	Glass scale	
673	A	P,T		CNC, video measuring system, angle measurement		Up to 90°			0.002°	Angle block gauges	
674	A	T		Length, Extensometer	אורך, מד התארכות	[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
<b>Calibration – Physical Quantities - Force, Torque</b>						<b>כיוול – חזלים פיזיקליים - כח, מומנט</b>	
675	A	P	Force, Load cell, dynamometers	[0.5 N to 2000 N]	0.1 % OR +0.05 N	Based on ISO 7500-1	Weights& load cells
676	A	P	Tension and compression	(2 kN to 10 kN)	0.1 % OR+3 N	SOP 90150318	Load cells, OR-of reading
677	A	P		(10 kN to 100 kN)	0.1 % OR+2 N		
678	A	P		(100 kN to 450 kN)	0.2 % OR+2 N		
679	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
680	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
681	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
682	A	P	Torque, Torque tester Torque Transducer	[0.1 N·m to 10 N·m]	0.03 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 <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Physical Quantities - Humidity</b>					<b>כיוול – גדלים פיזיקליים - לחות</b>		
683	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
684	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		
685	A	P		[24 %rh to 29 %rh] [14.6 °C to 22 °C]	1.2 %rh		
686	A	P		(29 %rh to 36 %rh) [14.6 °C to 19 °C]	1.2 %rh		
687	A	P		(19 % rh to 76 % rh) [27 °C to 40 °C]	0.8 %rh		
688	A	P		(24 % rh to 29 % rh) [22 °C to 27 °C]	0.8 %rh		
689	A	P		(29 % rh to 36 % rh) [19 °C to 27 °C]	0.8 %rh		
690	A	P		(36 % rh to 76 % rh) [14.6 °C to 27 °C]	0.8 %rh		
691	A	P		(76 % rh to 96 % rh) [25 °C to 40 °C]	1.2 %rh		
692	A	P	Temperature, Relative Humidity/ Temperature Gauges	טמפרטורה רגשי לחות /טמפרטורה (15 °C to 40 °C)	0.2 °C		
693	A	P		(40 °C to 50 °C)	0.26 °C		
694	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
695	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 <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Physical Quantities - Humidity</b>					<b>כיוול – גדלים פיזיקליים - לחות</b>		
696	A	T		[25 %rh to 61 %rh] [40 °C to 50 °C]	1.5 %rh		Humidity and temperature controller chamber
697	A	T		(75 %rh to 93 %rh) [40 °C to 50 °C]	1.5 %rh		





Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Physical Quantities - Liquid and Air Flow</b>					<b>כיוול – גדלים פיזיקליים – זרימה, נוזל ואוויר</b>		
698	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 <sub>2</sub> . 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.
699	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 <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Physical Quantities - Mass</b>					<b>כיוול – גדלים פיזיקליים - מסה</b>		
700	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]	0.025 mg	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
701	A	P;T			(50 g to 100 g)	0.08 mg	
702	A	P;T			(100 g to 220 g)	0.18 mg	
703	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	
704	A	P;T			(100 g to 220 g)	0.24 mg	
705	A	P;T			(220 g to 520 g)	0.30 mg	
706	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	
707	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	
708	A	P;T			(8.1 kg to 12.1 kg)	0.017 g	
709	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	
710	A	P;T			(32.1 kg to 60 kg)	0.2 g	
711	A	T	Mass Non-automatic weighing instruments Resolution 1 g	מסה, מאזניים לא אוטומטיים כושר הפרדה 1 g	(Up to 150 kg)	1 g	
712	A	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	
713	A	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	



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Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Physical Quantities - Mass</b>					<b>כיוול – גדלים פיזיקליים - מסה</b>		
714	A	T	Mass Non-automatic weighing instruments Resolution 0.5 kg	מסה, מאזניים לא אוטומטיים כושר הפקדה 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 <sup>1</sup>	Reference Documents	Remarks	
<b>Calibration – Physical Quantities - Pressure</b>					<b>כיוול – גדלים פיזיקליים - לחץ</b>			
715	A	P	Pneumatic pressure Absolute.	לחץ פניאומאטי, אבסולוטי	(10 kPa to 3.6 MPa)	275 Pa	Based on Euramet cg 17	DPC Druck, Pace 6000
716	A	P	Pressure indicating instruments and gauges	מדידי לחץ פניאומאטיים	(3.6 MPa to 7.1 MPa)	1.75 kPa	Manufacturer instructions SOP 90150314	PPC DHI model PPCH-G-70M
717	A	P1			(0.1 MPa to 7.1 MPa)	4.2 kPa		Fluke 8370A
718	A	P, P1			(7.1 MPa to 70 MPa)	7.25 kPa		
719	A	P	Pneumatic pressure Gauge	לחץ פניאומאטי, יחסי	[-90 kPa to 3.5 MPa]	300 Pa	Based on Euramet cg 17	DPC Druck, Pace 6000
720	A	P	Pressure indicating instruments and gauges	מדידי לחץ פניאומאטיים	(3.5 MPa to 7 MPa)	1.8 kPa	Manufacturer instructions SOP 90150314	PPC DHI model PPCH-G-70M
721	A	P1			[0 MPa to 7 MPa]	4.2 kPa		Fluke 8370A
722	A	P, P1			(7 MPa to 70 MPa)	7.2 kPa		
723	A	P	Hydraulic pressure, Gauge.	לחץ הידראולי	(6.2 MPa to 41.37 MPa)	7.5 kPa	Based on EURAMET cg17	Comparison vs.
724	A	P	Pressure indicating instruments and gauges	מדידי לחץ הידראוליים	(41.37 MPa to 206.89 MPa)	24 kPa	Manufacturer instruction SOP 10006	DWT AREMECA
725	A	P			(206.89 MPa to 413.5 MPa)	50 kPa		BH4 - 4000B
726	A	P	Hydraulic pressure, Gauge.	לחץ הידראולי	(0 MPa to 7 MPa)	5.5 kPa	Based on EURAMET cg17	Fluke EDWT
727	A	P	Pressure indicating instruments and gauges	מדידי לחץ	(7 MPa to 200 MPa)	14 kPa	SOP 90150314	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks	
<b>Calibration – Physical Quantities - Temperature</b>					<b>כיוול – גדלים פיזיקליים - טמפרטורה</b>			
728	A	P	Temperature.	טמפרטורה	[-80 °C to -40 °C]	0.06 °C	IEC 60751	SPRT, PRT
729	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
730	A	P			0.01 °C (Triple point of water)	0.04 °C	SOP 9015039	Isotech microK, TWP,
731	A	P			(100 °C to 200 °C)	0.05 °C		Calibration baths,
732	A	P			(200 °C to 600 °C)	0.45 °C		Thermocouple calibration furnace
733	A	P			(600 °C to 1000 °C)	1.0 °C		
734	A	P	Temperature.	טמפרטורה	(-80 °C to 200 °C)	0.4 °C	Based on Euramet cg8	PRT, TC type S, Calibration
735	A	P	Thermocouples noble metal	צמידים תרמיים, מתכות אצילות	(200 °C to 600 °C)	0.6 °C	Manufacturer instructions SOP 9015038	baths, Thermocouple calibration furnace
736	A	P			(600 °C to 1000 °C)	1.0 °C		
737	A	P	Temperature.	טמפרטורה	(-80 °C to 200 °C)	0.4 °C	Based on Euramet cg8	PRT, TC type S, Calibration
738	A	P	Thermocouples base metal	צמידים תרמיים מתכות בסיסיות	(200 °C to 600 °C)	0.6 °C	ITS-90 SOP 9015038	baths, Thermocouple calibration furnace
739	A	P			(600 °C to 1000 °C)	1.0 °C		
740	A	T	Temperature,	טמפרטורה	[-25 °C to 140 °C]	0.4 °C	Manufacturer instructions	PRT with Display
741	A	T	Thermometers sensors with display	מדי חום עם תצוגה	(140 °C to 600 °C)	0.5 °C	SOP 9015039	Dry blocks calibrators
742	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,
743	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 <sup>1</sup>	Reference Documents	Remarks	
<b>Calibration – Physical Quantities - Temperature</b>					<b>כיוול – גדלים פיזיקליים - טמפרטורה</b>			
744	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
745	A	T	Base metal thermocouples type K		[-200 °C to 1370 °C]	0.4 °C	SOP 10650, SOP 10700	cold junction compensation off
746	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
747	A	T	Base metal thermocouples type J		[-200 °C to 1200 °C]	0.4 °C	SOP 10650, SOP 10700	cold junction compensation off
748	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
749	A	T	Base metal thermocouples type T		[-200 °C to 400 °C]	0.4 °C	SOP 10650 SOP 10700	cold junction compensation off
750	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
751	A	T	Base metal thermocouples type E		[-200 °C to 1000 °C]	0.4 °C	SOP 10650 SOP 10700	cold junction compensation off
752	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
753	A	T	Measure	מודד	[-20 °C to 1760 °C]	0.7 °C	SOP 10650	cold junction compensation off
754	A	T	Source	מקור	[-20 °C to 1760 °C]	0.4 °C	SOP 10700	
755	A	P,T	Temperature, Furnaces	טמפרטורה, תנורים בקרים לתנורים	[-80 °C to 200 °C]	0.55 °C	AMS 2750F	Thermocouples
756	A	P,T	Furnaces Controller		(-200 °C to 535 °C)	1 °C	IEC 60068-3-5	



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement <sup>1</sup>	Reference Documents	Remarks
<b>Calibration – Physical Quantities - Temperature</b>					<b>כיוול – גדלים פיזיקליים - טמפרטורה</b>		
757	A	P,T		(535 °C to 1000 °C]	1.6 °C	SOP 9015037	
758	A	P,T	Temperature, Furnaces	טמפרטורה, תנורים	[-80 °C to 200 °C]	AMS 2750F	Thermocouples
759	A	P,T	Furnaces Controller Including Uniformity	בקרת תנורים כולל אחידות	(200 °C to 535 °C]	IEC 60068-3-5 SOP 9015037	
760	A	P,T		(535 °C to 1000 °C]	2.2 °C		

<sup>1</sup>) 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 %.