



ISO/IEC 17025:2017

מעבדות כיוול

תעודת הסמכה מס' 0094

חברת החשמל, חטיבת שירותי רשת, אגף הנדסת רשת – מונים ארצי, מחלקת מעבדת מונים, מעבדת תקנים

כתובת אתר ייחוס: המדע 6, ראשל"צ, 7559909

עד יום: 11.02.2026

בתוקף מיום: 26.12.2023

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

תעודה זו אינה מהווה אישור לפי סעיף 12 לחוק התקנים.

אתי פלר
מנכ"ל
הרשות הלאומית להסמכת מעבדות

תאריך הסמכה ראשון: 12.02.2003



הרשות הלאומית להסמכת מעבדות
Israel Laboratory Accreditation Authority

Calibration Laboratories

ISO/IEC 17025:2017

Accreditation Certificate No. 94

**Standards Lab., Meters Lab. Dept., Central Metering Unit, Grid Engineering
Division, Grid Services Group, Israel Electric Corp.**

Main site address: 6 Hamada st. Rishon LeTzion, 7559909, Israel

Valid from: 26.12.2026

Until: 11.02.2025

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

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

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

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

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

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

Date of first accreditation: 12.02.2003

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

Date of signature 27/01/2025

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Name and Address:

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Standard Laboratory
- P1 H.V Laboratory-Beit Dagan Store, +972-3-960-2241
Meter Testing Department-Central Metering Unit,
Marketing Division, Israel Electric Corporation Ltd.

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

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, Sources	מחוללי מתח בורם ישר	[0 V to 0.1 V]	2 μV	Manufacturer Instructions	Digital Multimeters: Fluke 8588A; Fluke 8508A
2	A	P			(0.1 V to 0.2 V)	2.7 μV		
3	A	P			(0.2 V to 1.0 V)	14 μV		
4	A	P			(1.0 V to 2.0 V)	19 μV		
5	A	P			(2.0 V to 10 V)	120 μV		
6	A	P			(10 V to 20 V)	180 μV		
7	A	P			(20 V to 100 V)	1.4 mV		
8	A	P			(100 V to 200 V)	2.3 mV		
9	A	P			(200 V to 1000 V)	14 mV		
10	A	P	DC Voltage Reference Voltage Sources	מתח בורם ישר, מקורות מתח ישר לייחוס	1.018 V	2.2 μV	Manufacturer Instructions	Standard Cells Fluke 7001 Digital Multimeters: Fluke 8588A; Fluke 8508A
11	A	P			10 V	20 μV		
12	A	P	DC Voltage, Measuring Instruments	מכשירי מדידת מתח בורם ישר	[0 V to 0.33 V]	16 μV	Manufacturer Instructions	Calibrator Fluke 5520A
13	A	P			(0.33 V to 3. 3 V)	160 μV		
14	A	P			(3.3 V to 33 V)	1.6 mV		
15	A	P			(33 V to 330 V)	21 mV		
16	A	P			(330 V to 1020 V)	21 mV		
17	A	P	DC Current, Sources	זרם ישר, מחוללים	[0 mA to 0.2 mA]	5.4 nA	Manufacturer Instructions	Digital Multimeters Fluke 8588A; Fluke 8508A
18	A	P			(0.2 mA to 2.0 mA)	54 nA		
19	A	P			(2.0 mA to 20 mA]	0.57 μA		



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		
20	A	P			(20 mA to 200 mA]	17 μA		
21	A	P			(200 mA to 1.0 A]	250 μA		
22	A	P			(1.0 A to 2.0 A]	0.58 mA		
23	A	P			(2.0 A to 20 A]	13 mA		
24	A	P	DC Current, Measuring Instruments	זרם ישר, מכשירי מדידה	[0 mA to 0.32 mA]	0.7 μA	Manufacturer Instructions	Calibrators Fluke 5520A;
25	A	P			(0.32 mA to 3.3 mA]	1.2 μA		
26	A	P			(3.3 mA to 33 mA]	21 μA		
27	A	P			(33 mA to 330 mA]	310 μA		
28	A	P			(330 mA to 2.1 A]	1.2 mA		
29	A	P			(3.2 A to 11 A]	12 mA		
30	A	P	AC Voltage, Sources	מתח חילופין מחוללים	[40 Hz to 70 Hz]		Manufacturer Instructions	Digital Multimeters Fluke 8588A; Fluke 8508A
31	A	P			[0.00 V to 0.1 V]	0.053 mV		
32	A	P			(0.1 V to 0.2 V]	0.072 mV		
33	A	P			(0.2 V to 1.0 V]	0.2 mV		
34	A	P			(1.0 V to 2.0 V]	0.41 mV		
35	A	P			(2.0 V to 10 V]	3.8 mV		
36	A	P			(10 V to 20 V]	4.9 mV		Three Phase Comparator Zera COM 303-1
37	A	P			(20 V to 60 V]	6.0 mV		
					(60 V to 120 V]	11 mV		



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		
38	A	P			(120 V to 240 V]	22 mV		
39	A	P			(240 V to 480 V]	44 mV		Digital Multimeter Fluke 8508A
40	A	P	AC Voltage. Measuring Instruments	מתח חילופין מכשירי מדידה	[40 Hz to 70 Hz]		Manufacturer Instructions	Calibrators Fluke 5520A;
		[0.00 V to 0.01 V]			150 μV			
41	A	P			(0.01 V to 0.033 V]	160 μV		
42	A	P			(0.033 V to 0.32 V]	600 μV		
43	A	P			(0.32 V to 3.2 V]	5.4 mV		
44	A	P			(3.2 V to 33 V]	40 mV		
45	A	P			(33 V to 330 V]	280 mV		
46	A	P			(330 V to 1020 V]	1 V		
47	A	P	AC Voltage. Sources	מתח חילופין מחוללים	[70 Hz to 1 KHz]		Manufacturer Instructions	Digital Multimeters Fluke 8588A; Fluke 8508A
		[0.00 V to 0.1 V]			0.053 mV			
48	A	P			(0.1 V to 0.2 V]	0.075 mV		
49	A	P			(0.2 V to 1.0 V]	0.18 mV		
50	A	P			(1.0 V to 2.0 V]	0.46 mV		
51	A	P			(2.0 V to 10 V]	3.8 mV		
52	A	P			(10 V to 20 V]	5.4 mV		
53	A	P			(20 V to 100 V]	24 mV		
54	A	P			(100 V to 200 V]	46 mV		



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		
55	A	P			(200V to 1000V]	240 mV		
56	A	P	AC Current Sources	זרם חילופין מחוללים	[40 Hz to 70 Hz]		Manufacturer Instructions	Digital Multimeters Fluke 8588A; Fluke 8508A
57	A	P			[0.0 μA to 100 μA]	0.073 μA		
58	A	P			(100 μA to 200 μA]	0.17 μA		
59	A	P			(200 μA to 1.0 mA]	0.064 μA		
60	A	P			(1.0 mA to 2.0 mA]	1.2 μA		
61	A	P			(2.0 mA to 5.0 mA]	1.3 μA		Three Phase Comparator Zera COM 303-1
62	A	P			(5.0 mA to 10 mA]	1.6 μA		
63	A	P			(10 mA to 20 mA]	4.0 μA		
64	A	P			(20 mA to 50 mA]	8.0 μA		
65	A	P			(50 mA to 100 mA]	10 μA		
66	A	P			(100mA to 200mA]	21 μA		
67	A	P			(200mA to 500mA]	50 μA		
68	A	P			(0.5 A to 1.0 A]	0.1 mA		
69	A	P			(1.0 A to 2.0 A]	0.21 mA		
70	A	P			(2.0 A to 5.0 A]]	0.5 mA		
71	A	P			(5.0 A to 10 A]	1.0 mA		
72	A	P			(10 A to 20 A]	4.0 mA		
					(20 A to 50 A]	10 mA		



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		
73	A	P		(50 A to 100 A]	18 mA		
74	A	P		(100 A to 160 A]	43 mA		
75	A	P		(160 A to 500 A]	157 mA		Three Phase Comparator
76	A	P		(500 A to 1000 A]	197 mA		Zera COM 303-1 Current Comparator Tettex 4761
77	A	P	AC Current Measuring Instruments	זרם חילופין מכשירי מדידה [40 Hz to 70 Hz]	0.92 μ A	Manufacturer Instructions	Calibrators Fluke 5520A;
78	A	P		[0.0 μ A to 33 μ A]	1.3 μ A		
79	A	P		(33 μ A to 0.32 mA]	5.2 μ A		
80	A	P		0.32mA to 3.2mA]	56 μ A		
81	A	P		(3.2 mA to 33 mA]	560 μ A		
82	A	P		(33 mA to 330 mA]	4.2 mA		
83	A	P		(0.33 A to 2.2 A]	14 mA		
84	A	P		(2.2 A to 11 A]	70 mA		
85	A	P		(11 A to 20 A]	110 mA		
86	A	P		(20 A to 32 A]	560 mA		
87	A	P		(32 A to 160 A]	750 mA		
88	A	P		(160 A to 200 A]	3.9 A		
				(200 A to 1000 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		
89	A	P	AC Current Sources	[70 Hz to 1 KHz] [0.0μA to 0.1mA]	0.073 μA	Manufacturer Instructions	Digital Multimeters Fluke 8588A Fluke 8508A
90	A	P		(0.1 mA to 0.2mA]	0.2 μA		
91	A	P		(0.2 mA to 1.0mA]	0.64 μA		
92	A	P		(1.0 mA to 2.0mA]	1.4 μA		
93	A	P		(2.0 mA to 10 mA]	6.4 μA		
94	A	P		(10 mA to 20 mA]	14 μA		
95	A	P		(20 mA to 100mA]	45 μA		
96	A	P		(100mA to 200mA]	170 μA		
97	A	P		(0.2 A to 1.0 A]	0.95 mA		
98	A	P		(1.0 A to 2.0 A]	1.9 mA		
99	A	P		(2.0 A to 20 A]	25 mA		
100	A	P	DC resistance, Reference Resistance	(0.0 Ω to 0.02 Ω]	13 μΩ	Manufacturer Instructions	Micro-Ohmmeter Cambridge 510A; Digital Multimeters Fluke 8588A; Fluke 8508A
101	A	P		(0.02 Ω to 2.0 Ω]	77 μΩ		
102	A	P		(2.0 Ω to 20 Ω]	0.37 mΩ		
103	A	P		(20 Ω to 100 Ω]	1.9 mΩ		
104	A	P		(100 Ω to 200 Ω]	3.5 mΩ		
105	A	P		(200 Ω to 1.0 kΩ]	1.9 mΩ		
106	A	P		(1.0 kΩ to 2.0 kΩ]	35 mΩ		
107	A	P		(2.0 kΩ to 10 kΩ]	0.17 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		
108	A	P			(10 kΩ to 20 kΩ]	0.30 Ω		Digital Multimeter Fluke 8508A
109	A	P			(20 kΩ to 100 kΩ]	1.9 Ω		
110	A	P			(100 kΩ to 200 kΩ]	3.5 Ω		
111	A	P			(200 kΩ to 1.0 MΩ]	31 Ω		
112	A	P			(1.0 MΩ to 2.0 MΩ]	50 Ω		
113	A	P			(2.0 MΩ to 10 MΩ]	0.64 kΩ		
114	A	P			(10 MΩ to 20 MΩ]	0.93 kΩ		
115	A	P			(20 MΩ to 200 MΩ]	63 kΩ		
116	A	P			(200 MΩ to 1 GΩ]	5.1 MΩ		
117	A	P	DC Resistance, Measuring Instruments	התנגדות זרם ישר, מכשירי מדידה	(0.0 Ω to 11.0 Ω]	14 mΩ	Manufacturer Instructions	Calibrators Fluke 5520A;
118	A	P			(11.0 Ω to 33.0 Ω]	26 mΩ		
119	A	P			(33 Ω to 110 Ω]	40 mΩ		
120	A	P			(110 Ω to 330 Ω]	100 mΩ		
121	A	P			(330 Ω to 1.1 kΩ]	300 mΩ		
122	A	P			(1.1 kΩ to 3.3 kΩ]	1.0 Ω		
123	A	P			(3.3 kΩ to 11 kΩ]	3.0 Ω		
124	A	P			(11 kΩ to 33 kΩ]	7.0 Ω		
125	A	P			(33 kΩ to 110 kΩ]	28 Ω		
126	A	P			(110 kΩ to 330 kΩ]	85 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		
127	A	P			(330 kΩ to 1.1 MΩ]	350 Ω		
128	A	P			(1.1 MΩ to 3.3 MΩ]	1.2 kΩ		
129	A	P			(3.3 MΩ to 11 MΩ]	12 kΩ		
130	A	P			(11 MΩ to 33 MΩ]	100 kΩ		
131	A	P			(33 MΩ to 110 MΩ]	920 kΩ		
132	A	P			(110 MΩ to 330 MΩ]	6.0 MΩ		
133	A	P	Phase angle, Wattmeter, Power source	זווית מופע, מד הספק, מקור הספק	[0° to 360 °]	0.034°	Manufacturer Instructions	Three Phase Comparator Zera COM 303-1
134	A	P1	Voltage ratio Voltage measuring transformer Primary: 6 kV to 40 kV Secondary: 110 V or 110/√3 V	יחס השנאה של שנאי מתח	1/300 to 1/120	2·10 ⁻⁴ V/V	IEC 61869-3	Reference V.T. EPRO NVOD 30. Measuring Bridge Zera WM-303U 1' (minute) stands for 0.291 mrad
135	A	P1	Phase displacement Voltage measuring transformer Primary: 6 kV to 40 kV Secondary: 110 V or 110/√3 V	הזזת מופע של שנאי מתח	0' to 100'	2.0'		
136	A	P1	Current ratio Current measuring transformer Primary: 0.05 A to 1000 A Secondary: 5 A	יחס השנאה של שנאי זרם	1/200 to 1/1	1.1·10 ⁻⁴ A/A	IEC 61869-1 IEC 61869-2	Current comparator TETTEX 4761. Measuring Bridge Zera WM-303I 1' (minute) stands for 0.291 mrad
137	A	P1	Phase displacement Current measuring transformer Primary: 0.05A to 1000A Secondary: 5A	הזזת מופע של שנאי זרם	0' to 100'	0.3'		



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		
138	A	P	Frequency, Sources	תדר, מחוללים	[0.5 Hz to 10.0 MHz]	1.5 Hz / MHz	Manufacturer Instructions	Timer/ Counter Pendulum CNT 80
139	A	P	Frequency. Counters	תדר, מוני תדר	[0.5 Hz to 10.0 MHz]	2.5 Hz / MHz	Manufacturer Instructions	Waveform Generator Agilent 33500B

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		
140	A	P	Relative Humidity, Hygrometers and humidity transducers, Ambient Humidity measurement	לחות יחסית, מדי לחות ומתמרים, מדידת לחות סביבה	23 °C	5.0 % rh	IEC 60068 A Guide to the Measurement of humidity- NPL	Reference instrument ALMEMO 2590-2A
141	A	P			50 °C			



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - LF Single & Three Phase Electrical Power and Energy					כיוול – גדלים חשמליים - הספק ואנרגיה חשמלית חד ותלת מופעית בתדר נמוך		
142	A	P	Active Energy, in single phase 50 Hz network, אנרגיה אקטיבית ברשת חד מופעית 50 Hz	63.5 V P. Factor 0.5 5 A	200 μ J/J	IEC 60736 IEC 60514 IEC 61358 IEC 60687	Reference instrument COM 303 standard instrument Voltage measured phase to neutral
143	A	P		P. Factor 1 5 A	150 μ J/J	IEC 62052-11 IEC 62053-11	
144	A	P		10 A	150 μ J/J	IEC 62053-21 IEC 62053-22 IEC 62053-23	
145	A	P		230 V P. Factor 0.5 2.5 A	200 μ J/J	IEC 60688 IEC 60145	
146	A	P		5 A	200 μ J/J		
147	A	P		10 A	200 μ J/J		
148	A	P		20 A	220 μ J/J		
149	A	P		50 A	220 μ J/J		
150	A	P		100 A P. Factor 1	220 μ J/J		
151	A	P		0.05 A	170 μ J/J		
152	A	P		0.1 A	150 μ J/J		
153	A	P		0.2 A	150 μ J/J		
154	A	P		0.25 A	150 μ J/J		
155	A	P		0.5 A	150 μ J/J		
156	A	P		1 A	150 μ J/J		
157	A	P		2 A	150 μ J/J		
158	A	P		2.5 A	150 μ J/J		
159	A	P		5 A	150 μ J/J		



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - LF Single & Three Phase Electrical Power and Energy						יול – גדלים חשמליים - הספק ואנרגיה חשמלית חד ותלת מופעית בתדר נמוך		
160	A	P			10 A	150 µJ/J		
161	A	P			20 A	170 µJ/J		
162	A	P			50 A	170 µJ/J		
163	A	P			100 A	170 µJ/J		
164	A	P	Active Energy, in three phase 50 Hz network, 3 wires, 2 elements	אנרגיה אקטיבית, מונה ברשת תלת מופעית 50 Hz 3 מוליכים, 2 אלמנטים	110 V		IEC 60736	Reference instrument COM 303 of Zera standard instrument. Voltage measured phase to phase
		P. Factor 0.5				IEC 60514		
		0.01 A			220 µJ/J	IEC 61358		
		0.02 A			220 µJ/J	IEC 60687		
		0.05 A			220 µJ/J	IEC 62052-11		
		0.1 A			200 µJ/J	IEC 62053-11		
		0.2 A			200 µJ/J	IEC 62053-21		
		0.5 A			200 µJ/J	IEC 62053-22		
		1 A			200 µJ/J	IEC 62053-23		
		2 A			200 µJ/J	IEC 60688		
		5 A			200 µJ/J	IEC 60145		
		P. Factor 1						
		0.01 A			170 µJ/J			
		0.02 A			170 µJ/J			
		0.05 A			170 µJ/J			
		0.1 A			150 µJ/J			
		0.2 A			150 µJ/J			
		0.5 A			150 µJ/J			
		1 A	150 µJ/J					
		2 A	150 µJ/J					



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - LF Single & Three Phase Electrical Power and Energy						יול – גדלים חשמליים - הספק ואנרגיה חשמלית חד ותלת מופעית בתדר נמוך		
181	A	P			5 A	150 μJ/J		
182	A	P			10 A	150 μJ/J		
183	A	P			20 A	170 μJ/J		
184	A	P	Active energy, in three phase 50 Hz network, 4 wires, 3 elements	אנרגיה אקטיבית ברשת תלת מופעית 50 Hz 4 מוליכים, 3 אלמנטים	63.5 V			Reference instrument COM 303 of Zera standard instrument. Voltage measured phase to neutral
		P. Factor 0.5						
185	A	P			0.05 A	220 μJ/J		
186	A	P			0.1 A	200 μJ/J		
187	A	P			0.2 A	200 μJ/J		
188	A	P			0.5 A	200 μJ/J		
189	A	P			1 A	200 μJ/J		
190	A	P			2 A	200 μJ/J		
191	A	P			5 A	200 μJ/J		
					10 A	200 μJ/J		
					P. Factor 1			
192	A	P			0.05 A	170 μJ/J		
193	A	P			0.1 A	150 μJ/J		
194	A	P			0.2 A	150 μJ/J		
195	A	P			0.5 A	150 μJ/J		
196	A	P			1 A	150 μJ/J		
197	A	P			2 A	150 μJ/J		
198	A	P			5 A	150 μJ/J		
199	A	P	10 A	150 μJ/J				



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - LF Single & Three Phase Electrical Power and Energy					כיוול – גדלים חשמליים - הספק ואנרגיה חשמלית חד ותלת מופעית בתדר נמוך		
200	A	P		230 V P. Factor 0.5 0.01 A	220 נג/ג		
201	A	P		0.02 A	220 נג/ג		
202	A	P		0.05 A	220 נג/ג		
203	A	P		0.1 A	200 נג/ג		
204	A	P		0.2 A	200 נג/ג		
205	A	P		0.5 A	200 נג/ג		
206	A	P		1 A	200 נג/ג		
207	A	P		2 A	200 נג/ג		
208	A	P		5 A	200 נג/ג		
209	A	P		10 A	200 נג/ג		
210	A	P		20 A	220 נג/ג		
211	A	P		50 A	220 נג/ג		
212	A	P		100 A	220 נג/ג		
213	A	P		P. Factor 1 0.01 A	170 נג/ג		
214	A	P		0.02 A	170 נג/ג		
215	A	P		0.05 A	170 נג/ג		
216	A	P		0.1 A	150 נג/ג		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - LF Single & Three Phase Electrical Power and Energy					כיוול – גדלים חשמליים - הספק ואנרגיה חשמלית חד ותלת מופעית בתדר נמוך		
217	A	P		0.2 A	150 נג/J		
218	A	P		0.5 A	150 נג/J		
219	A	P		1 A	150 נג/J		
220	A	P		2 A	150 נג/J		
221	A	P		5 A	150 נג/J		
222	A	P		10 A	150 נג/J		
223	A	P		20 A	170 נג/J		
224	A	P		50 A	170 נג/J		
225	A	P		100 A	170 נג/J		
226	A	P	Reactive energy, in three phase 50 Hz network, 3 wires, 2 elements	אנרגיה ראקטיבית ברשת תלת מופעית 50 Hz 3 מוליכים, 2 אלמנטים	110 V P. Factor 0.5 0.05 A	300 נג/J	Reference instrument COM 303 of Zera standard instrument. Voltage measured phase to phase
227	A	P		0.1 A	280 נג/J		
228	A	P		0.2 A	280 נג/J		
229	A	P		0.5 A	280 נג/J		
230	A	P		1 A	280 נג/J		
231	A	P		2 A	280 נג/J		
232	A	P		5 A	280 נג/J		
233	A	P		10 A	280 נג/J		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - LF Single & Three Phase Electrical Power and Energy					כיוול – גדלים חשמליים - הספק ואנרגיה חשמלית חד ותלת מופעית בתדר נמוך		
234	A	P		P. Factor 1 0.01 A	240 μ N/J		
235	A	P		0.02 A	240 μ N/J		
236	A	P		0.05 A	240 μ N/J		
237	A	P		0.1 A	230 μ N/J		
238	A	P		0.2 A	230 μ N/J		
239	A	P		0.5 A	230 μ N/J		
240	A	P		1 A	230 μ N/J		
241	A	P		2 A	230 μ N/J		
242	A	P		5 A	230 μ N/J		
243	A	P		10 A	230 μ N/J		
244	A	P	Reactive energy, in three phase 50 Hz network, 4 wires, 3 elements	63.5 V P. Factor 0.5 0.05 A	300 μ N/J		Reference instrument COM 303 of Zera standard instrument. Voltage measured phase to neutral
245	A	P		0.1 A	280 μ N/J		
246	A	P		0.2 A	280 μ N/J		
247	A	P		0.5 A	280 μ N/J		
248	A	P		1 A	280 μ N/J		
249	A	P		2 A	280 μ N/J		



Item	Scope Type	Site	Measurand Instrument, Gauge	Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - LF Single & Three Phase Electrical Power and Energy					כיוול – גדלים חשמליים - הספק ואנרגיה חשמלית חד ותלת מופעית בתדר נמוך		
250	A	P		5 A	280 נג/ג		
251	A	P		10 A	280 נג/ג		
				P. Factor 1			
252	A	P		0.01 A	240 נג/ג		
253	A	P		0.02 A	240 נג/ג		
254	A	P		0.05 A	240 נג/ג		
255	A	P		0.1 A	230 נג/ג		
256	A	P		0.2 A	230 נג/ג		
257	A	P		0.5 A	230 נג/ג		
258	A	P		1 A	230 נג/ג		
259	A	P		2 A	230 נג/ג		
260	A	P		5 A	230 נג/ג		
261	A	P		10 A	230 נג/ג		
				230 V			
				P. Factor 0.5			
262	A	P		0.05 A	300 נג/ג		
263	A	P		0.1 A	280 נג/ג		
264	A	P		0.2 A	280 נג/ג		
265	A	P		0.5 A	280 נג/ג		



Item	Scope Type	Site	Measurand Instrument, Gauge		Range [Including margins] (Does not include margins)	Uncertainty of Measurement ¹	Reference Documents	Remarks
Calibration – Electrical Quantities - LF Single & Three Phase Electrical Power and Energy						יול – גדלים חשמליים - הספק ואנרגיה חשמלית חד ותלת מופעית בתדר נמוך		
266	A	P			1 A	280 μJ/J		
267	A	P			2 A	280 μJ/J		
268	A	P			5 A	280 μJ/J		
269	A	P			10 A	280 μJ/J		
					P. Factor 1			
270	A	P			0.01 A	240 μJ/J		
271	A	P			0.02 A	240 μJ/J		
272	A	P			0.05 A	240 μJ/J		
273	A	P			0.1 A	230 μJ/J		
274	A	P			0.2 A	230 μJ/J		
275	A	P			0.5 A	230 μJ/J		
276	A	P			1 A	230 μJ/J		
277	A	P			2 A	230 μJ/J		
278	A	P			5 A	230 μJ/J		
279	A	P			10 A	230 μJ/J		



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		
280	A	P	Temperature, Temperature Meters and Transducers	טמפרטורה מדי טמפרטורה ומתמרים	[0 °C to 60 °C]	0.5 °C	IEC 60068	Reference instrument ALMEMO 2590-2A

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 %.