

**מעבדות כיול**

**ISO/IEC 17025: 2017**

**תעודת הסמכה מס' 357**

**סייטק מעבדת כיול**

**כתובת אתר ייחוס:** רח' זאב לב 25, ירושלים, 9145001

**בתוקף מיום: 07.07.2020**

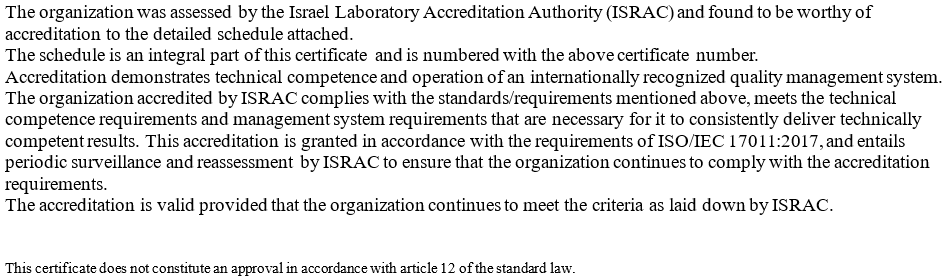
**עד יום: 19.11.2022**

**תאריך הסמכה ראשון: 20.11.2016**

**אתי פלר**

**מנכ"ל**

**הרשות הלאומית להסמכת מעבדות**



**Calibration Laboratories**

**Until: 19.11.2022**

**Valid from: 07.07.2020**

**Date of first accreditation: 20.11.2016**

**General Manager  
Israel Laboratory Accreditation Authority**

**Accreditation Certificate No. 357**

**SATEC Calibration Lab**

**Main site address:** 25 Zeev Lev st., Jerusalem, 9145001, Israel

**ISO/IEC 17025: 2017**

**Etty Feller**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | ***Name and Address*:** | |
| **SATEC Calibration Lab** | | | **Laboratory name** |
| 25 Zeev Lev st., Jerusalem, 9145001, Israel | | | **Address** |
|  | +972-2-5411000 | | **Phone** |
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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)*** | | ***CMC Expressed as an Expanded Uncertainty (95%)*** | ***Reference Documents*** | ***Remarks*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Calibration – Electrical Quantities LF Single & Three Phase Electrical Power and Energy*** | | | | | | | ***כיול -גדלים חשמליים - הספק ואנרגיה חשמלית חד ותלת מופעית בתדר נמוך*** | | |
|  |  |  | Active Energy, Three Phase, Direct Active Energy Meter in three phase 50/60 Hz,  3230+N V network. | אנרגיה אקטיבית, מונה  תלת מופעי לחיבור  ישיר לאנרגיה אקטיבית  ברשת תלת מופעית  3x230+N V, 50/60 Hz | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | IEC = International Electrotechnical Commission  EN = European Standard  NMI = National Measurement institute  AS = Australian Standard  ANSI = American National Standards Institute  GOST = Russian Standards and Technical Regulations  Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger. |
|  | A | P | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.1 A – 5 A) | 0.49mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.20mJ/J |
|  |  |  | Active Energy, Three Phase, Transformer operated, Active Energy Meter in three phase, 50/60 Hz, 3230+N V network. | אנרגיה אקטיבית, מונה תלת מופעי, לחיבור דרך שנאי, לאנרגיה אקטיבית ברשת תלת מופעית  50/60 Hz , 3230+N V, | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.01 A – 0.5 A) | 0.49mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.20mJ/J |
|  |  |  | Active Energy, Three Phase, Transformer operated, Active Energy Meter in three phase, 50/60 Hz,3400V network. | אנרגיה אקטיבית, מונה תלת מופעי, לחיבור דרך שנאי, לאנרגיה אקטיבית ברשת תלת מופעית  50/60 Hz , 3400V , | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.01 A – 0.5 A) | 0.49mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.20mJ/J |
|  |  |  | Active Energy, Three Phase, Transformer operated, Active Energy Meter in three phase, 50/60 Hz,3+N V network. | אנרגיה אקטיבית, מונה תלת מופעי, לחיבור דרך שנאי, לאנרגיה אקטיבית ברשת תלת מופעית  50/60 Hz , 3+N V, | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.01 A – 0.5 A) | 0.49mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.20mJ/J |
|  |  |  | Active Energy, Three Phase, Transformer operated, Active Energy Meter in three phase, 50/60 Hz 3110 V network. | אנרגיה אקטיבית, מונה תלת מופעי, לחיבור דרך שנאי, לאנרגיה אקטיבית ברשת תלת מופעית  50/60 Hz , 3110 V, | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.01 A – 0.5 A) | 0.49mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.20mJ/J |
|  |  |  | Active Energy, Three Phase, Transformer operated, Active Energy Meter in three phase, 50/60 Hz,3+N V network. | אנרגיה אקטיבית,מונה תלת מופעי, לחיבור דרך שנאי, לאנרגיה אקטיבית ברשת תלת מופעית 50/60 Hz , 3+N | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger |
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|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.01 A – 0.5 A) | 0.49mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.20mJ/J |
|  |  |  | Active Energy, Three Phase, Transformer operated, Active Energy Meter in three phase, 50/60 Hz,3100 V network. | אנרגיה אקטיבית, מונה תלת מופעי, לחיבור דרך שנאי, לאנרגיה אקטיבית ברשת תלת מופעית  50/60 Hz , 3100 V, | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger |
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|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.02 A – 0.5 A) | 0.55mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.01 A – 0.5 A) | 0.49mJ/J |
|  | A | P |  | [0.5 A – 20 A) | 0.20mJ/J |
|  |  |  | Active Energy, Three Phase, Direct Active Energy Meter in three phase,  50/60 Hz,3x220V+N network. | אנרגיה אקטיבית, מונה  תלת מופעי לחיבור  ישיר לאנרגיה אקטיבית  ברשת תלת מופעית  50/60 Hz , 3x220V+N, | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger |
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|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.1 A – 5 A) | 0.49mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.20mJ/J |
|  |  |  | Active Energy, Three Phase, Direct Active Energy Meter in three phase, 50/60 Hz,3690 V network. | אנרגיה אקטיבית, מונה  תלת מופעי לחיבור  ישיר לאנרגיה אקטיבית  ברשת תלת מופעית  50/60 Hz , 3690 V, | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.1 A – 5 A) | 0.49mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.20mJ/J |
|  |  |  | Active Energy, Three Phase, Direct Active Energy Meter in three phase,  50/60 Hz,3x120V+N network. | אנרגיה אקטיבית, מונה  תלת מופעי לחיבור  ישיר לאנרגיה אקטיבית  ברשת תלת מופעית  50/60 Hz , 3x120V+N, | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.1 A – 5 A) | 0.49mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.20mJ/J |
|  |  |  | Active Energy, Three Phase, Direct Active Energy Meter in three phase, 50/60 Hz, 3480 V network. | אנרגיה אקטיבית, מונה  תלת מופעי לחיבור  ישיר לאנרגיה אקטיבית  ברשת תלת מופעית  50/60 Hz , 3480 V, | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.1 A – 5 A) | 0.49mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.20mJ/J |
|  |  |  | Active Energy, Three Phase, Direct Active Energy Meter in three phase,  50/60 Hz,3277 V +N  network. | אנרגיה אקטיבית, מונה  תלת מופעי לחיבור  ישיר לאנרגיה אקטיבית  ברשת תלת מופעית  50/60 Hz,3277 V +N, | P. Factor 0.25 lag |  |  | IEC 61557-12  IEC 62052-11  IEC 62053-21  IEC 62053-22  EN 50470-3  NMI M 6-1  AS 62053.22  ANSI C12.1  ANSI C12.20  GOST 31818.11 GOST 31819.22 | Class 0.5  Class 0.2  Class 1  Class 2  Class 0.5S  Class 0.2S  Class A  Class B  Class C  Remark1: For classes 1, 2, A and B the CMC values may be bigger |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.5 |  |  |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor 0.8 |  |  |
|  | A | P |  | [0.2 A – 5 A) | 0.55mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.50mJ/J |
|  |  |  | P. Factor:1 |  |  |
|  | A | P |  | [0.1 A – 5 A) | 0.49mJ/J |
|  | A | P |  | [5 A – 100 A) | 0.20mJ/J |