



YOKOGAWA

European Standards Laboratory
Yokogawa Europe Solutions B.V.
Amersfoort, The Netherlands



CALIBRATION-CERTIFICATE

Certificate number
Page 1 of 15

Applicant	<i>Applicant</i> <i>Applicant</i> <i>Applicant</i> <i>Applicant</i>
Instrument	760901 High Accuracy Element 30A Manufacturer Yokogawa Type 760901 Serial number <i>Serial number</i> Inventory number <i>Inventory number</i> ID numbers used standards CSE820 CSE976 CSE981 CSE965 CSE1029 Procedure CALWT5000_30A Version: 1 of 21-02-2020
Calibration method	The calibration is performed at the permanent laboratory in Amersfoort. The Powermeter was compared to the Yokogawa Power Calibration System via a phantom technique. During the calibration the distortion of the applied voltage and current were below 0.1 %. Before calibration the device was powered on for at least 12 hours.
Environmental conditions	Temperature (23.4 ± 1.0) °C Relative Humidity (55 ± 4) %rh
Date of Calibration	<i>Date of Calibration</i>
Result	The results of the calibration are shown on the next pages. The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor 2 such that the coverage probability corresponds to approximately 95 %. The standard uncertainty of measurement has been determined in accordance with the EA-4/02M:2013. The long term stability of the calibrated object is not included in the reported expanded uncertainty measurement. This certificate of calibration is issued in compliance with ISO/IEC 17025:2017 The reported results do only apply to the instrument calibrated.
Traceability	The measurements have been executed using standards for which the traceability to (inter)national standards has been demonstrated towards the RvA.
Date	<i>Date</i>
Name	<i>Name</i>
Function	<i>Function</i>

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The Raad voor Accreditatie is member of the European Co-operation for Accreditation (EA) and is one of the signatories to the ILAC Mutual Recognition Arrangements (MRA) for the mutual recognition of calibration Certificates.

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YOKOGAWA

1 MHz Line Filter set.

Voltage Calibration DC

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
1.5V	1.50000	1.50000	0.00002	V DC	0.000
1.5V	-1.50000	-1.50003	0.00002	V DC	0.002
3V	3.00000	2.99999	0.00002	V DC	0.000
3V	-3.00000	-3.00013	0.00002	V DC	0.004
6V	6.00000	6.00001	0.00005	V DC	0.000
6V	-6.00000	-6.00026	0.00005	V DC	0.004
10V	10.0000	9.9998	0.0002	V DC	-0.002
10V	-10.0000	-10.0002	0.0002	V DC	0.002
15V	15.0000	14.9998	0.0005	V DC	-0.001
15V	-15.0000	-15.0004	0.0006	V DC	0.002
30V	30.0000	29.9999	0.0009	V DC	0.000
30V	-30.0000	-30.0010	0.0009	V DC	0.003
60V	60.0000	60.0002	0.0017	V DC	0.000
60V	-60.0000	-60.0019	0.0018	V DC	0.003
100V	110.000	109.997	0.004	V DC	-0.003
100V	-110.000	-110.003	0.004	V DC	0.003
100V	100.000	99.997	0.004	V DC	-0.003
100V	-100.000	-100.003	0.004	V DC	0.003
100V	50.000	49.996	0.002	V DC	-0.007
100V	-50.000	-50.003	0.002	V DC	0.007
100V	10.000	9.997	0.002	V DC	-0.030
100V	-10.000	-10.003	0.002	V DC	0.033
100V	1.000	0.997	0.002	V DC	-0.300
100V	-1.000	-1.004	0.002	V DC	0.400
150V	150.000	149.999	0.008	V DC	-0.001
150V	-150.000	-150.004	0.008	V DC	0.003
300V	300.000	300.002	0.013	V DC	0.001
300V	-300.000	-300.010	0.013	V DC	0.003
600V	600.000	599.991	0.024	V DC	-0.001
600V	-600.000	-600.034	0.027	V DC	0.006
1000V	1.0000	1.0000	0.0002	kV DC	-0.003
1000V	-1.0000	-1.0000	0.0002	kV DC	0.001

Voltage Calibration 10 Hz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
1.5V	1.50000	1.50003	0.00026	V AC	0.002
3V	3.0000	3.0001	0.0005	V AC	0.003
6V	6.0000	6.0003	0.0010	V AC	0.004
10V	10.0000	10.0002	0.0012	V AC	0.002
15V	15.0000	15.0004	0.0029	V AC	0.003
30V	30.000	30.001	0.006	V AC	0.004
60V	60.000	60.001	0.015	V AC	0.002
100V	100.000	100.002	0.016	V AC	0.002



Voltage Calibration 60 Hz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
1.5V	1.5000	1.50001	0.00028	V AC	0.001
3V	3.0000	3.0001	0.0006	V AC	0.002
6V	6.0000	6.0002	0.0013	V AC	0.004
10V	10.0000	10.0001	0.0007	V AC	0.001
15V	15.0000	15.0000	0.0009	V AC	0.000
30V	30.0000	30.0010	0.0027	V AC	0.003
60V	60.0000	60.003	0.004	V AC	0.004
100V	110.000	110.000	0.008	V AC	0.000
100V	100.000	99.999	0.008	V AC	-0.001
100V	50.000	50.003	0.004	V AC	0.006
100V	10.000	10.005	0.002	V AC	0.048
100V	1.000	1.000	0.002	V AC	0.018
150V	150.000	150.002	0.010	V AC	0.002
300V	300.000	300.012	0.027	V AC	0.004
600V	600.00	600.02	0.05	V AC	0.003
1000V	1.0000	1.0000	0.0002	kV AC	-0.001

Voltage Calibration 1 kHz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
1.5V	1.5000	1.5002	0.0003	V AC	0.015
3V	3.0000	3.0006	0.0007	V AC	0.021
6V	6.0000	6.0011	0.0010	V AC	0.018
10V	10.0000	10.0011	0.0006	V AC	0.011
15V	15.0000	15.0009	0.0008	V AC	0.006
30V	30.0000	30.0020	0.0016	V AC	0.007
60V	60.0000	60.0028	0.0026	V AC	0.005
100V	100.000	100.005	0.006	V AC	0.005
150V	150.000	150.014	0.008	V AC	0.009
300V	300.000	300.027	0.018	V AC	0.009
600V	600.00	600.04	0.05	V AC	0.007
1000V	1.0000	1.0000	0.0002	kV AC	0.004

Voltage Calibration 10 kHz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
1.5V	1.50000	1.50144	0.00006	V AC	0.096
3V	3.00000	3.00232	0.00011	V AC	0.077
6V	6.0000	6.0037	0.0003	V AC	0.062
10V	10.0000	10.0046	0.0007	V AC	0.046
15V	15.0000	15.0054	0.0009	V AC	0.036
30V	30.0000	30.0101	0.0017	V AC	0.034
60V	60.000	60.019	0.004	V AC	0.031
100V	100.000	100.030	0.007	V AC	0.030
150V	150.000	150.044	0.008	V AC	0.029
300V	300.00	300.08	0.13	V AC	0.026
600V	600.00	600.14	0.04	V AC	0.023



Voltage Calibration 50 kHz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
1.5V	1.5000	1.50052	0.00016	V AC	0.035
3V	3.0000	3.0006	0.0004	V AC	0.020
6V	6.0000	6.0000	0.0007	V AC	0.001
10V	10.0000	9.9977	0.0015	V AC	-0.023
15V	15.0000	15.0050	0.0021	V AC	0.034
30V	30.000	30.009	0.010	V AC	0.029
60V	60.000	60.021	0.019	V AC	0.035
100V	100.00	100.04	0.03	V AC	0.036

Voltage Calibration 100 kHz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
1.5V	1.5000	1.5010	0.0006	V AC	0.067
3V	3.0000	3.0014	0.0015	V AC	0.046
6V	6.0000	6.0019	0.0027	V AC	0.031
10V	10.000	10.001	0.005	V AC	0.012
15V	15.000	15.007	0.007	V AC	0.044
30V	30.00	30.01	0.04	V AC	0.030
60V	60.00	60.03	0.07	V AC	0.051
100V	100.00	100.04	0.10	V AC	0.037



Current Calibration DC

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
500mA	500.000	500.024	0.029	mA DC	0.005
500mA	-500.000	-499.912	0.023	mA DC	-0.018
1A	1.1000	1.0999	0.0010	A DC	-0.008
1A	1.0000	1.0000	0.0007	A DC	-0.003
1A	0.50000	0.50000	0.00004	A DC	0.000
1A	0.10000	0.10002	0.00002	A DC	0.016
1A	0.01000	0.01002	0.00002	A DC	0.202
1A	-1.1000	-1.1001	0.0018	A DC	0.008
1A	-1.0000	-1.0001	0.0016	A DC	0.010
1A	-0.50000	-0.49995	0.00002	A DC	-0.009
1A	-0.10000	-0.09997	0.00002	A DC	-0.032
1A	-0.01000	-0.00998	0.00002	A DC	-0.205
2A	2.0000	1.9999	0.0028	A DC	-0.004
2A	-2.000	-2.000	0.005	A DC	0.013
5A	5.000	5.000	0.004	A DC	0.000
5A	-5.000	-5.001	0.007	A DC	0.010
10A	10.0000	10.0002	0.0014	A DC	0.002
10A	-10.0000	-10.0009	0.0018	A DC	0.009
20A	20.0000	20.0003	0.0010	A DC	0.001
20A	-20.0000	-19.9994	0.0013	A DC	-0.003
30A	20.0000	20.0000	0.0010	A DC	0.000
30A	-20.0000	-19.9988	0.0013	A DC	-0.006

Current Calibration AC at 10 Hz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
500mA	500.00	499.98	0.10	mA AC	-0.004
1A	1.00000	0.99996	0.00019	A AC	-0.004
2A	2.0000	1.9998	0.0005	A AC	-0.008

Current Calibration AC at 60 Hz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
500mA	500.00	499.98	0.04	mA AC	-0.005
1A	1.10000	1.09984	0.00026	A AC	-0.015
1A	1.00000	0.99996	0.00008	A AC	-0.004
1A	0.50000	0.49998	0.00005	A AC	-0.004
1A	0.10000	0.09999	0.00002	A AC	-0.013
1A	0.01000	0.00994	0.00002	A AC	-0.615
2A	2.00000	1.99986	0.00030	A AC	-0.007
5A	5.0000	4.9999	0.0007	A AC	-0.001
10A	10.0000	10.0005	0.0011	A AC	0.005
20A	20.0000	20.0005	0.0024	A AC	0.002
30A	20.0000	20.0001	0.0024	A AC	0.001



Current Calibration AC at 1 kHz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
500mA	500.00	499.99	0.05	mA AC	-0.002
1A	1.00000	0.99998	0.00019	A AC	-0.002
2A	2.00000	1.99994	0.00029	A AC	-0.003
5A	5.0000	5.0003	0.0007	A AC	0.005
10A	10.0000	10.0010	0.0009	A AC	0.010
20A	20.0000	20.0015	0.0023	A AC	0.007
30A	20.0000	20.0003	0.0023	A AC	0.001

Current Calibration AC at 10 kHz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
500mA	500.00	500.03	0.06	mA AC	0.006
1A	1.00000	1.00023	0.00018	A AC	0.023
2A	2.00000	2.00035	0.00026	A AC	0.017
5A	5.0000	5.0013	0.0016	A AC	0.027
10A	10.0000	10.0034	0.0011	A AC	0.034
20A	20.0000	20.0072	0.0027	A AC	0.036
30A	20.0000	20.0068	0.0027	A AC	0.034

Current Calibration AC at 50 kHz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
500mA	500.00	499.99	0.24	mA AC	-0.003
1A	1.0000	0.9998	0.0006	A AC	-0.015
2A	2.000	2.000	0.006	A AC	0.002

Current Calibration AC at 100 kHz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
500mA	500.0	500.1	0.3	mA AC	0.024
1A	1.0000	0.9998	0.0003	A AC	-0.023
2A	2.000	2.003	0.006	A AC	0.139



External Current Calibration DC. For current 1000mV/A is set.

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
1V	1.00000	0.99997	0.00008	A DC	-0.003
1V	-1.00000	-1.00003	0.00005	A DC	0.003

External Current Calibration 10 Hz. For current 1000mV/A is set.

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
1V	1.00000	1.00007	0.00021	A AC	0.007

External Current Calibration 60 Hz. For current 1000mV/A is set.

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100mV	100.00	99.93	0.11	mA AC	-0.069
200mV	200.00	199.99	0.07	mA AC	-0.005
500mV	500.00	499.99	0.03	mA AC	-0.001
1V	1.00000	0.99992	0.00012	A AC	-0.008
2V	2.00000	1.99997	0.00025	A AC	-0.002
5V	5.0000	5.0000	0.0003	A AC	0.000

External Current Calibration 1 kHz. For current 1000mV/A is set.

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100mV	100.00	99.94	0.09	mA AC	-0.064
200mV	200.00	199.99	0.09	mA AC	-0.004
500mV	500.00	500.02	0.03	mA AC	0.004
1V	1.00000	1.00003	0.00012	A AC	0.003
2V	2.00000	2.00015	0.00018	A AC	0.008
5V	5.00000	5.00037	0.00029	A AC	0.007



External Current Calibration 10 kHz. For current 1000mV/A is set.

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
200mV	200.00	199.98	0.13	mA AC	-0.008
1V	1.00000	1.00052	0.00017	A AC	0.052
2V	2.00000	2.00101	0.00013	A AC	0.050
5V	5.0000	5.0031	0.0004	A AC	0.061

External Current Calibration 50 kHz. For current 1000mV/A is set.

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
200mV	200.00	199.98	0.10	mA AC	-0.008
1V	1.00000	1.00033	0.00015	A AC	0.033
2V	2.00000	2.00040	0.00025	A AC	0.020
5V	5.0000	4.9986	0.0006	A AC	-0.028

External Current Calibration 100 kHz. For current 1000mV/A is set.

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
200mV	200.00	199.97	0.10	mA AC	-0.017
1V	1.00000	1.00077	0.00025	A AC	0.077
2V	2.0000	2.0008	0.0003	A AC	0.041
5V	5.0000	5.0006	0.0010	A AC	0.011

Power Calibration DC Constant 100 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 1A	100.000	99.996	0.020	W	-0.004
100V 1A	-100.000	-99.996	0.021	W	-0.004
100V 1A	50.000	50.000	0.004	W	-0.001
100V 1A	-50.000	-49.995	0.002	W	-0.011
100V 1A	10.000	10.002	0.002	W	0.019
100V 1A	-10.000	-9.997	0.002	W	-0.032
100V 1A	100.000	99.998	0.020	W	-0.002
100V 1A	-100.000	-99.996	0.021	W	-0.004
100V 500mA	50.0000	49.9997	0.0028	W	-0.001
100V 500mA	50.0000	49.9998	0.0029	W	0.000
100V 1A	100.000	99.997	0.020	W	-0.003
100V 1A	-100.000	-99.995	0.021	W	-0.005
100V 2A	200.0	200.0	0.5	W	-0.007
100V 2A	-200.0	-200.0	0.5	W	0.006
100V 5A	500.0	500.0	0.4	W	-0.003
100V 5A	-500.0	-499.9	0.4	W	-0.019
100V 10A	1.00000	1.00001	0.00019	kW	0.001
100V 10A	-1.00000	-1.00006	0.00019	kW	0.006
100V 20A	2.00000	1.99999	0.00013	kW	-0.001
100V 20A	-2.00000	-1.99993	0.00013	kW	-0.003
100V 30A	2.00000	1.99998	0.00013	kW	-0.001
100V 30A	-1.00000	-1.00005	0.00019	kW	0.005



Power Calibration DC Constant 1 A

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 1A	110.000	110.000	0.022	W	0.000
100V 1A	-110.000	-110.004	0.023	W	0.003
100V 1A	100.000	100.000	0.020	W	0.000
100V 1A	-100.000	-100.003	0.021	W	0.003
100V 1A	50.000	49.999	0.010	W	-0.003
100V 1A	-50.000	-50.003	0.011	W	0.005
100V 1A	10.000	10.003	0.002	W	0.030
100V 1A	-10.000	-10.007	0.002	W	0.065
10V 1A	10.0000	10.0036	0.0021	W	0.036
10V 1A	-10.0000	-10.0039	0.0024	W	0.039
15V 1A	15.000	15.000	0.003	W	0.000
15V 1A	-15.000	-15.000	0.003	W	0.002
30V 1A	30.0000	30.0001	0.0005	W	0.000
30V 1A	-30.0000	-30.0010	0.0005	W	0.003
60V 1A	60.000	60.000	0.012	W	0.001
60V 1A	-60.000	-60.003	0.012	W	0.004
100V 1A	100.000	99.997	0.020	W	-0.003
100V 1A	-100.000	-100.004	0.021	W	0.004
150V 1A	150.00	150.00	0.03	W	-0.001
150V 1A	-150.00	-150.01	0.03	W	0.004
300V 1A	300.00	299.99	0.06	W	-0.002
300V 1A	-300.00	-300.01	0.06	W	0.005
600V 1A	600.00	600.00	0.13	W	0.000
600V 1A	-600.00	-600.03	0.12	W	0.005
1000V 1A	1.00000	0.99997	0.00023	kW	-0.003
1000V 1A	-1.00000	-1.00000	0.00022	kW	0.000



Power Calibration 10 Hz PF=1 constant 1 A

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
15V 1A	15.0000	14.9995	0.0014	W	-0.004
30V 1A	30.000	30.000	0.003	W	-0.001
60V 1A	60.000	59.998	0.006	W	-0.003
100V 1A	100.000	99.997	0.011	W	-0.003

Power Calibration 10 Hz PF=1 constant 100 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 500mA	50.000	49.995	0.006	W	-0.011

Power Calibration 60 Hz PF=1 constant 1 A

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
1.5V 1A	1.50000	1.50001	0.00026	W	0.001
3V 1A	3.00000	3.00001	0.00030	W	0.000
6V 1A	6.0000	6.0002	0.0006	W	0.003
15V 1A	15.0000	14.9997	0.0014	W	-0.002
30V 1A	30.000	29.999	0.003	W	-0.002
60V 1A	60.000	59.999	0.006	W	-0.002
100V 1A	110.000	109.995	0.011	W	-0.004
100V 1A	100.000	99.996	0.011	W	-0.004
100V 1A	50.000	49.999	0.006	W	-0.002
100V 1A	10.000	10.000	0.002	W	0.000
100V 1A	1.000	1.000	0.002	W	-0.038
150V 1A	150.000	150.000	0.014	W	0.000
300V 1A	300.00	300.00	0.04	W	-0.001
600V 1A	600.00	599.98	0.06	W	-0.003
1000V 1A	1.00000	0.99996	0.00011	kW	-0.004

Power Calibration 60 Hz PF=1 constant 100 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 500mA	50.000	49.995	0.006	W	-0.011
100V 1A	10.000	9.999	0.002	W	-0.009
100V 1A	1.000	1.000	0.002	W	-0.010
100V 2A	200.000	199.988	0.025	W	-0.006
100V 5A	500.00	500.02	0.05	W	0.004
100V 10A	1.00000	1.00007	0.00012	kW	0.007
100V 20A	2.00000	2.00010	0.00029	kW	0.005
100V 20A	2.00000	2.00005	0.00029	kW	0.003

Power Calibration 1 kHz PF=1 constant 1 A

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
6V 1A	6.0000	6.0012	0.0018	W	0.019
15V 1A	15.000	15.001	0.003	W	0.004
30V 1A	30.000	30.002	0.007	W	0.005
60V 1A	60.000	60.004	0.012	W	0.006
100V 1A	100.000	100.004	0.022	W	0.004
150V 1A	150.00	150.01	0.03	W	0.008
300V 1A	300.00	300.02	0.07	W	0.006
600V 1A	600.00	600.04	0.13	W	0.006
1000V 1A	1.00000	1.00003	0.00022	kW	0.003

Power Calibration 1 kHz PF=1 constant 100 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 500mA	50.000	49.999	0.006	W	-0.002
100V 2A	200.000	200.002	0.025	W	0.001
100V 5A	500.00	500.08	0.05	W	0.015
100V 10A	1.00000	1.00014	0.00013	kW	0.014
100V 20A	2.0000	2.0003	0.0003	kW	0.013
100V 20A	2.0000	2.0002	0.0003	kW	0.012

Power Calibration 10 kHz PF=1 constant 1 A

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
6V 1A	6.000	6.004	0.004	W	0.075
15V 1A	15.000	15.005	0.005	W	0.035
30V 1A	30.000	30.011	0.005	W	0.036
60V 1A	60.000	60.024	0.010	W	0.041
100V 1A	100.000	100.037	0.012	W	0.037

Power Calibration 10 kHz PF=1 constant 100 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 500mA	50.000	50.017	0.027	W	0.034
100V 2A	200.00	200.07	0.12	W	0.036
100V 5A	500.00	500.27	0.19	W	0.054
100V 10A	1.0000	1.0006	0.0006	kW	0.062

Power Calibration 50 kHz PF=1 constant 1 A

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
6V 1A	6.000	5.998	0.006	W	-0.041
15V 1A	15.000	14.998	0.009	W	-0.014
30V 1A	30.000	29.999	0.018	W	-0.002
60V 1A	60.00	60.01	0.04	W	0.008
100V 1A	100.00	100.01	0.06	W	0.007



Power Calibration 50 kHz PF=1 constant 100 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 500mA	50.00	50.00	0.12	W	-0.009
100V 2A	200.00	200.00	0.28	W	0.002

Power Calibration 100 kHz PF=1 constant 1 A

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
6V 1A	6.000	6.000	0.008	W	0.005
15V 1A	15.000	14.997	0.009	W	-0.018
30V 1A	30.000	29.995	0.018	W	-0.017
60V 1A	60.00	60.01	0.04	W	0.010
100V 1A	100.00	100.00	0.06	W	0.004

Power Calibration 100 kHz PF=1 constant 100 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 500mA	50.00	50.00	0.15	W	-0.010
100V 2A	200.0	200.4	0.9	W	0.198



For current 1V/A is set in the instrument

External Current Power Calibration DC. Constant 60 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
60V 1V	60.000	59.996	0.007	W	-0.006
60V 1V	-60.000	-60.002	0.007	W	0.004

External Current Power Calibration 10 Hz. PF=1. Constant 60 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
60V 1V	60.000	59.996	0.011	W	-0.006

External Current Power Calibration 60 Hz. PF=1. Constant 60 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100mV	100.00	99.94	0.09	mA AC	-0.063
60V 500mV	30.000	30.000	0.008	W	0.001
60V 200mV	12.0000	11.9995	0.0026	W	-0.004
60V 1V	60.000	60.000	0.010	W	0.001
60V 5V	300.0	300.0	0.6	W	0.004
60V 10V	300.0	300.0	0.6	W	0.003

External Current Power Calibration 1 kHz. PF=1. Constant 60 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
60V 100mV	6.000	5.997	0.003	W	-0.052
60V 500mV	30.000	30.003	0.007	W	0.010
60V 200mV	12.0000	12.0003	0.0030	W	0.003
60V 1V	60.000	60.004	0.015	W	0.007
60V 5V	300.0	300.0	0.6	W	0.013
60V 10V	300.0	300.0	0.6	W	0.013

External Current Power Calibration 10 kHz. PF=1. Constant 60 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
60V 1V	60.000	60.043	0.006	W	0.071
60V 5V	300.000	300.244	0.028	W	0.081

External Current Power Calibration 50 kHz. PF=1. Constant 60 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
60V 1V	60.000	60.019	0.009	W	0.032
60V 5V	300.00	299.92	0.05	W	-0.027

External Current Power Calibration 100 kHz. PF=1. Constant 60 V

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
60V 1V	60.000	60.066	0.015	W	0.111
60V 5V	300.00	300.12	0.08	W	0.039

Power Calibration 60Hz PF=0 lag. Constant 1 A

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
15V 1A	0.0000	-0.0004	0.0012	W	-
100V 1A	0.000	-0.002	0.006	W	-
150V 1A	0.000	-0.002	0.009	W	-



Power Calibration 60Hz PF=0 Lead Constant 1 A

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
15V 1A	0.000	0.003	0.006	W	-
100V 1A	0.000	0.002	0.007	W	-
150V 1A	0.000	0.001	0.008	W	-

Power Calibration 1 kHz PF=0 lag

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 1A	0.00	-0.01	0.25	W	-

Power Calibration 10 kHz PF=0 lag

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 1A	0.0	0.0	0.4	W	-

Power Calibration 50 kHz PF=0 lag

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 1A	0.0	0.2	0.7	W	-

Power Calibration 100 kHz PF=0 lag

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 1A	0.0	0.4	1.3	W	-

Power Calibration 1 kHz PF=0 lead

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 1A	0.00	0.02	0.12	W	-

Power Calibration 10 kHz PF=0 lead

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 1A	0.00	0.00	0.25	W	-

Power Calibration 50 kHz PF=0 lead

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 1A	0.0	-0.2	0.7	W	-

Power Calibration 100 kHz PF=0 lead

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 1A	0.0	-0.4	1.3	W	-

6th Voltage Harmonic (60 Hz) synchronized to 10 Hz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V	100.000	100.005	0.008	V AC	0.005

20th Voltage Harmonic (1 kHz) synchronized to 50 Hz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V	100.000	99.972	0.006	V AC	-0.028

25th Voltage Harmonic (10 kHz) synchronized to 400 Hz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V	100.000	100.023	0.011	V AC	0.023

20th Voltage Harmonic (50 kHz) synchronized to 2.5 kHz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V	100.000	99.995	0.020	V AC	-0.005

6th Current Harmonic (60 Hz) synchronized to 10 Hz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
E1V	1.00000	0.99992	0.00012	A AC	-0.008

20th Current Harmonic (1 kHz) synchronized to 50 Hz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
E1V	1.00000	1.00005	0.00011	A AC	0.005

25th Current Harmonic (10 kHz) synchronized to 400 Hz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
E1V	1.00000	1.00065	0.00016	A AC	0.065

1st Power Harmonic synchronized to 60 Hz

Range	Applied	Measured	±Uncertainty	Unit	Deviation %
100V 1A	100.000	100.001	0.012	W	0.001

Comments :

For information, the deviation is given as a percentage (in %) of the measured value to the applied value. $\% = ((\text{Measured} - \text{Applied}) / \text{Applied}) \cdot 100\%$

Capacitive loads are leading (current leads voltage), and inductive loads are lagging (current lags voltage).