



*The points and / or ranges marked with (\*) are not covered by the accreditation of ENAC*

# CERTIFICADO DE CALIBRACIÓN

*Certificate of Calibration*

Número **4367**  
*Number*

Página **1** de **39** páginas  
*Page 1 of 39 pages*

## FUNDACIÓN CIRCE, Centro de Investigación de Recursos y Consumos Energéticos

LABORATORIO DE METROLOGÍA ELÉCTRICA

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### OBJETO

*Item*

**POWER QUALITY ANALYZER**

### MARCA

*Mark*

**CIRCUTOR**

### MODELO

*Model*

**MYeBOX 1500**

### IDENTIFICACIÓN

*Identification*

**083217190026**  
**(firmware version 001.002.000)**

### SOLICITANTE

*Applicant*

**CIRCUTOR**

Vial Sant Jordi, s/n

08232 - VILADECAVALLS (Barcelona)

### FECHA/S DE CALIBRACIÓN

*Date/s of calibration*

**7<sup>th</sup> of March – 11<sup>th</sup> of May, 2018**

### Signatario/s autorizado/s

*Autorized Signatory/es*

Fecha de emisión 4<sup>th</sup> of June of 2018

*Date of issue*

Sign.: Julio J. Melero Estela  
Director of the Laboratory

Este certificado se expide de acuerdo con las condiciones de la acreditación concedida por ENAC, que ha comprobado las capacidades de medida del laboratorio y su trazabilidad a patrones nacionales.

Los resultados contenidos en el presente Certificado se refieren al instrumento calibrado y al momento y condiciones en que se realizaron las mediciones. El Laboratorio que lo emite no se responsabiliza de los perjuicios que pudieran derivarse del uso inadecuado de los instrumentos calibrados.

*This certificate is issued in accordance with the conditions of accreditation granted by ENAC, which has assessed the measurement capability of the laboratory and its traceability to national standards.*

*The results of this Certificate refer to the calibrated instrument and to the moment and conditions in which the measurements were made. The issuing Laboratory assumes no responsibility for damages ensuing misuse of the calibrated instruments.*

### **Additional information of the instrument**

*Date of reception:* 26<sup>th</sup> of October of 2017.

*Place of calibration:* At LME facilities.

*Range(s) of measurement to be calibrated:*

Frequency: 42.5 Hz – 57.5 Hz / 51 Hz – 69 Hz.

Flicker, Pst (\*): 0.2, 1, 10.

(reference voltage: 230 V at 50 Hz / 60 Hz)

Voltage dips, interruptions and swells:

Residual voltage: 5 %, 10 %, 80 %, 110 %.

Duration: 100 ms, 1 s, 10 s.

(reference voltage: 230 V at 50 Hz / 60 Hz)

Voltage harmonics: Order 2<sup>nd</sup> – 50<sup>th</sup> (100 %, 10 %, 200 %).

(fundamental harmonic: 230 V at 50 Hz / 60 Hz)

Voltage unbalance (50 Hz / 60 Hz) (\*):

Negative sequence coeff. ( $u_2$ ): 5.83 %, 6.53 %, 6.93 %, 1.98 %, 0.16 %, 0.35 %.

Zero sequence coefficient ( $u_0$ ): 5.83 %, 6.53 %, 6.93 %, 4.03 %, 0.16 %, 0.35 %.

(\*) Range comprising point(s) not covered by the accreditation of ENAC granted to the laboratory.

### **Used methodology**

The instrument calibration has been carried out using reference standards, which belong to the LME and according to the following calibration procedure(s): *PC160*.

### **Reference standards**

The traceability of the measurements refers to LME reference standards periodically calibrated in laboratories with accreditation ENAC or equivalent. These measurements are traceable to national or international reference standards.

<i>Standard</i>	<i>Mark</i>	<i>Model</i>	<i>Serial number</i>	<i>Certificate Number</i>
Calibrator	FLUKE	6100A	46439	UKAS 063535
Calibrator	FLUKE	6101A	46894	UKAS 063536
Calibrator	FLUKE	6101A	878349371	UKAS 063537
Thermo-hygrometer	FLUKE	5020A	A6A184	ENAC C-04582.00017

### ***Ambient conditions***

The calibration was carried out within an ambient temperature of  $(23.0 \pm 3.0)$  °C and within a relative humidity of  $(50 \pm 20)$  %.

### ***Uncertainty of the calibration***

Ten measurements were carried out in every point of calibration. The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor  $k = 2$ , which provides a confidence level of approximately 95 %. The standard uncertainty was determined in accordance with documents EA 4/02 M:2013 and ILAC-P14:01/2013.

### ***Calibration results***

*Magnitude:* Frequency

*Range:* 42.5 Hz – 57.5 Hz

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
42.5000	0.0000	0.0026	Hz
47.0000	0.0000	0.0029	Hz
50.0000	0.0000	0.0030	Hz
52.0000	0.0000	0.0032	Hz
57.5000	0.0000	0.0035	Hz

*Magnitude:* Frequency

*Range:* 51 Hz – 69 Hz

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
51.0000	0.0000	0.0031	Hz
56.4000	0.0000	0.0034	Hz
60.0000	0.0000	0.0036	Hz
62.4000	0.0000	0.0038	Hz
69.0000	-0.0003	0.0042	Hz

Magnitude: *Flicker, Pst*

Point: 0,2 (reference voltage: 230 V at 50 Hz)

Channel L1

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	0.2000	-0.0100	0.0058	*
2	0.2000	-0.0100	0.0058	*
7	0.2000	-0.0020	0.0064	*
39	0.2000	0.0000	0.0058	*
110	0.2000	0.0000	0.0058	*
1620	0.2000	0.0000	0.0058	*
4000	0.2000	0.0000	0.0058	*

Channel L2

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	0.2000	-0.0100	0.0058	*
2	0.2000	-0.0100	0.0058	*
7	0.2000	-0.0100	0.0058	*
39	0.2000	0.0000	0.0058	*
110	0.2000	0.0000	0.0058	*
1620	0.2000	0.0000	0.0058	*
4000	0.2000	0.0000	0.0058	*

Channel L3

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	0.2000	-0.0100	0.0058	*
2	0.2000	-0.0100	0.0058	*
7	0.2000	0.0000	0.0058	*
39	0.2000	0.0000	0.0058	*
110	0.2000	0.0000	0.0058	*
1620	0.2000	0.0000	0.0058	*
4000	0.2000	0.0000	0.0058	*

\* Point not covered by the accreditation of ENAC granted to the laboratory.

Magnitude: *Flicker, Pst*

Point: 1 (reference voltage: 230 V at 50 Hz)

Channel L1

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	1.0000	0.0100	0.0063	*
2	1.0000	0.0040	0.0071	*
7	1.0000	0.0000	0.0063	*
39	1.0000	0.0000	0.0063	*
110	1.0000	0.0000	0.0063	*
1620	1.0000	0.0000	0.0063	*
4000	1.0000	0.0070	0.0070	*

Channel L2

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	1.0000	0.0100	0.0063	*
2	1.0000	0.0030	0.0070	*
7	1.0000	0.0000	0.0063	*
39	1.0000	0.0000	0.0063	*
110	1.0000	0.0000	0.0063	*
1620	1.0000	0.0000	0.0063	*
4000	1.0000	0.0070	0.0070	*

Channel L3

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	1.0000	0.0100	0.0063	*
2	1.0000	0.0060	0.0071	*
7	1.0000	0.0000	0.0063	*
39	1.0000	0.0000	0.0063	*
110	1.0000	0.0000	0.0063	*
1620	1.0000	0.0000	0.0063	*
4000	1.0000	0.0070	0.0070	*

\* Point not covered by the accreditation of ENAC granted to the laboratory.

Magnitude: *Flicker, Pst*

Point: 10 (reference voltage: 230 V at 50 Hz)

Channel L1

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	10.000	0.000	0.026	*
2	10.000	0.006	0.026	*
7	10.000	0.030	0.026	*
39	10.000	0.020	0.026	*
110	10.000	0.020	0.027	*
1620	10.000	0.053	0.026	*
4000	10.000	-0.030	0.091	*

Channel L2

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	10.000	0.000	0.026	*
2	10.000	0.005	0.026	*
7	10.000	0.028	0.026	*
39	10.000	0.018	0.026	*
110	10.000	0.018	0.027	*
1620	10.000	0.053	0.026	*
4000	10.000	-0.046	0.097	*

Channel L3

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	10.000	0.000	0.026	*
2	10.000	0.006	0.026	*
7	10.000	0.030	0.026	*
39	10.000	0.020	0.026	*
110	10.000	0.020	0.027	*
1620	10.000	0.053	0.026	*
4000	10.000	-0.005	0.091	*

\* Point not covered by the accreditation of ENAC granted to the laboratory.

Magnitude: *Flicker, Pst*

Point: 0,2 (reference voltage: 230 V at 60 Hz)

Channel L1

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	0.20000	-0.01000	0.00077	*
2	0.20000	-0.01000	0.00077	*
7	0.20000	-0.01000	0.00077	*
39	0.2000	0.0006	0.0012	*
110	0.2000	-0.0006	0.0012	*
1620	0.20000	-0.01000	0.00077	*
4800	0.2000	-0.0061	0.0017	*

Channel L2

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	0.20000	-0.01000	0.00077	*
2	0.20000	-0.01000	0.00077	*
7	0.20000	-0.01000	0.00077	*
39	0.2000	0.0009	0.0012	*
110	0.2000	-0.0029	0.0018	*
1620	0.2000	-0.0094	0.0012	*
4800	0.2000	-0.0058	0.0015	*

Channel L3

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	0.20000	-0.01000	0.00077	*
2	0.2000	-0.0106	0.0012	*
7	0.20000	-0.01000	0.00077	*
39	0.20000	-0.01000	0.00077	*
110	0.2000	-0.0123	0.0028	*
1620	0.20000	-0.02000	0.00077	*
4800	0.2000	-0.0112	0.0013	*

\* Point not covered by the accreditation of ENAC granted to the laboratory.

Magnitude: *Flicker, Pst*

Point: 1 (reference voltage: 230 V at 60 Hz)

Channel L1

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	1.0000	0.0097	0.0028	*
2	1.0000	0.0006	0.0027	*
7	1.0000	0.0000	0.0026	*
39	1.0000	0.0000	0.0026	*
110	1.0000	0.0000	0.0026	*
1620	1.0000	0.0000	0.0026	*
4800	1.0000	0.0060	0.0042	*

Channel L2

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	1.0000	0.0097	0.0028	*
2	1.0000	0.0000	0.0026	*
7	1.0000	0.0000	0.0026	*
39	1.0000	0.0000	0.0026	*
110	1.0000	0.0000	0.0026	*
1620	1.0000	0.0000	0.0026	*
4800	1.0000	0.0060	0.0042	*

Channel L3

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	1.0000	0.0017	0.0032	*
2	1.0000	0.0006	0.0027	*
7	1.0000	0.0000	0.0026	*
39	1.0000	0.0000	0.0026	*
110	1.0000	0.0000	0.0026	*
1620	1.0000	-0.0033	0.0032	*
4800	1.0000	0.0050	0.0043	*

\* Point not covered by the accreditation of ENAC granted to the laboratory.



Magnitude: *Flicker, Pst*

Point: 10 (reference voltage: 230 V at 60 Hz)

Channel L1

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	10.000	-0.050	0.026	*
2	10.000	-0.029	0.027	*
7	10.000	-0.020	0.026	*
39	10.000	0.009	0.026	*
110	10.000	0.002	0.026	*
1620	10.000	0.030	0.026	*
4800	10.000	0.080	0.026	*

Channel L2

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	10.000	-0.050	0.026	*
2	10.000	-0.029	0.027	*
7	10.000	-0.020	0.026	*
39	10.000	0.009	0.026	*
110	10.000	0.002	0.026	*
1620	10.000	0.030	0.026	*
4800	10.000	0.080	0.026	*

Channel L3

<i>Changes per minute</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	
1	10.000	-0.050	0.026	*
2	10.000	-0.026	0.027	*
7	10.000	-0.020	0.026	*
39	10.000	0.011	0.026	*
110	10.000	0.003	0.026	*
1620	10.000	0.030	0.026	*
4800	10.000	0.080	0.026	*

\* Point not covered by the accreditation of ENAC granted to the laboratory.

*Magnitude:* Voltage dips, interruptions and swells (residual voltage)

*Point:* 5 % (reference voltage: 230 V at 50 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
5.000	0.020	0.015	%	100 ms
5.000	0.027	0.015	%	1 s
5.000	0.036	0.015	%	10 s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
5.000	0.012	0.015	%	100 ms
5.000	0.026	0.016	%	1 s
5.000	0.042	0.015	%	10 s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
5.000	0.007	0.015	%	100 ms
5.000	0.023	0.016	%	1 s
5.000	0.050	0.015	%	10 s

*Point:* 10 % (reference voltage: 230 V at 50 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
10.000	0.008	0.030	%	100 ms
10.000	0.024	0.030	%	1 s
10.000	0.026	0.030	%	10 s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
10.000	0.014	0.030	%	100 ms
10.000	0.020	0.030	%	1 s
10.000	0.028	0.030	%	10 s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
10.000	0.007	0.031	%	100 ms
10.000	0.091	0.035	%	1 s
10.000	0.031	0.030	%	10 s

*Magnitude:* Voltage dips, interruptions and swells (residual voltage)

*Point:* 80 % (reference voltage: 230 V at 50 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
80.00	-0.02	0.24	%	100 ms
80.00	-0.01	0.24	%	1 s
80.00	-0.01	0.24	%	10 s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
80.00	-0.02	0.24	%	100 ms
80.00	-0.01	0.24	%	1 s
80.00	-0.01	0.24	%	10 s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
80.00	-0.02	0.24	%	100 ms
80.00	0.00	0.24	%	1 s
80.00	0.00	0.24	%	10 s

*Point:* 110 % (reference voltage: 230 V at 50 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
110.00	-0.05	0.33	%	100 ms
110.00	-0.06	0.33	%	1 s
110.00	-0.08	0.33	%	10 s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
110.00	-0.04	0.33	%	100 ms
110.00	-0.07	0.33	%	1 s
110.00	-0.08	0.33	%	10 s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
110.00	-0.03	0.33	%	100 ms
110.00	-0.08	0.33	%	1 s
110.00	-0.08	0.33	%	10 s

*Magnitude:* Voltage dips, interruptions and swells (residual voltage)

*Point:* 5 % (reference voltage: 230 V at 60 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
5.000	0.023	0.016	%	100 ms
5.000	0.029	0.015	%	1 s
5.000	0.049	0.017	%	10 s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
5.000	0.029	0.016	%	100 ms
5.000	0.029	0.016	%	1 s
5.000	0.051	0.015	%	10 s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
5.000	0.002	0.024	%	100 ms
5.000	0.053	0.022	%	1 s
5.000	0.054	0.015	%	10 s

*Point:* 10 % (reference voltage: 230 V at 60 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
10.000	0.008	0.030	%	100 ms
10.000	0.024	0.030	%	1 s
10.000	0.041	0.030	%	10 s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
10.000	0.022	0.030	%	100 ms
10.000	0.026	0.030	%	1 s
10.000	0.040	0.030	%	10 s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
10.000	0.003	0.030	%	100 ms
10.000	0.030	0.030	%	1 s
10.000	0.068	0.033	%	10 s

*Magnitude:* Voltage dips, interruptions and swells (residual voltage)

*Point:* 80 % (reference voltage: 230 V at 60 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
80.00	0.02	0.24	%	100 ms
80.00	0.03	0.24	%	1 s
80.00	0.02	0.24	%	10 s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
80.00	0.02	0.24	%	100 ms
80.00	0.02	0.24	%	1 s
80.00	0.02	0.24	%	10 s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
80.00	0.02	0.24	%	100 ms
80.00	0.03	0.24	%	1 s
80.00	0.02	0.24	%	10 s

*Point:* 110 % (reference voltage: 230 V at 60 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
110.00	0.00	0.33	%	100 ms
110.00	-0.02	0.33	%	1 s
110.00	-0.04	0.33	%	10 s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
110.00	0.01	0.33	%	100 ms
110.00	-0.02	0.33	%	1 s
110.00	-0.04	0.33	%	10 s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	<u>Duration</u>
110.00	0.01	0.33	%	100 ms
110.00	-0.02	0.33	%	1 s
110.00	-0.04	0.33	%	10 s

*Magnitude:* Voltage dips, interruptions and swells (duration)

*Point:* 5 % (reference voltage: 230 V at 50 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.10000	-0.0200	0.0058	s
1.0000	-0.0120	0.0064	s
10.0000	-0.0180	0.0064	s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.10000	-0.0100	0.0058	s
1.0000	-0.0200	0.0058	s
10.0000	-0.0190	0.0068	s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.10000	-0.0120	0.0064	s
1.0000	-0.0200	0.0058	s
10.0000	-0.0150	0.0079	s

*Point:* 10 % (reference voltage: 230 V at 50 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.10000	-0.0100	0.0058	s
1.0000	-0.0180	0.0064	s
10.0000	-0.0200	0.0058	s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.10000	-0.0140	0.0067	s
1.0000	-0.0200	0.0058	s
10.0000	-0.0150	0.0067	s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.10000	-0.0100	0.0058	s
1.0000	-0.0150	0.0067	s
10.0000	-0.0150	0.0067	s

*Magnitude:* Voltage dips, interruptions and swells (duration)

*Point:* 80 % (reference voltage: 230 V at 50 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0140	0.0067	s
1.0000	-0.0150	0.0067	s
10.0000	-0.0140	0.0067	s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0100	0.0058	s
1.0000	-0.0100	0.0058	s
10.0000	-0.0120	0.0064	s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0100	0.0058	s
1.0000	-0.0100	0.0058	s
10.0000	-0.0120	0.0064	s

*Point:* 110 % (reference voltage: 230 V at 50 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	0.0000	0.0058	s
1.0000	0.0000	0.0058	s
10.0000	0.0000	0.0058	s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0100	0.0058	s
1.0000	-0.0100	0.0058	s
10.0000	0.0000	0.0058	s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	0.0000	0.0058	s
1.0000	-0.0100	0.0058	s
10.0000	-0.0080	0.0064	s

*Magnitude:* Voltage dips, interruptions and swells (duration)

*Point:* 5 % (reference voltage: 230 V at 60 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0128	0.0055	s
1.0000	-0.0104	0.0054	s
10.0000	-0.0129	0.0070	s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0080	0.0049	s
1.0000	-0.0120	0.0056	s
10.000	-0.0147	0.0077	s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0160	0.0049	s
1.0000	-0.0112	0.0055	s
10.0000	-0.0096	0.0063	s

*Point:* 10 % (reference voltage: 230 V at 60 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0104	0.0054	s
1.0000	-0.0128	0.0055	s
10.0000	-0.0160	0.0049	s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0112	0.0055	s
1.0000	-0.0160	0.0049	s
10.0000	-0.0136	0.0054	s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0128	0.0055	s
1.0000	-0.0080	0.0049	s
10.0000	-0.0128	0.0055	s



*Magnitude:* Voltage dips, interruptions and swells (duration)

*Point:* 80 % (reference voltage: 230 V at 60 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0080	0.0049	s
1.0000	-0.0080	0.0049	s
10.0000	-0.0080	0.0049	s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0080	0.0049	s
1.0000	-0.0080	0.0049	s
10.0000	-0.0080	0.0049	s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0080	0.0049	s
1.0000	-0.0080	0.0049	s
10.0000	-0.0096	0.0053	s

*Point:* 110 % (reference voltage: 230 V at 60 Hz)

*Channel L1*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0080	0.0049	s
1.0000	-0.0016	0.0053	s
10.0000	-0.0040	0.0056	s

*Channel L2*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0064	0.0053	s
1.0000	-0.0056	0.0054	s
10.0000	-0.0056	0.0054	s

*Channel L3*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
0.1000	-0.0080	0.0049	s
1.0000	-0.0056	0.0054	s
10.0000	-0.0080	0.0049	s

*Magnitude:* Voltage harmonics

*Range:* Order 2<sup>nd</sup> – 50<sup>th</sup> (fundamental harmonic: 230 V at 50 Hz)

*Points:* 100 %, 10 %, 200 %

➤ See tables in following pages

Channel L1 (100 %) (fundamental harmonic: 230 V at 50 Hz)

<i>Harmonic order</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
2	6.9000	0.0230	0.0035	V
3	13.800	0.023	0.015	V
4	3.4500	0.0230	0.0018	V
5	18.400	0.046	0.016	V
6	2.3000	0.0000	0.0015	V
7	16.100	0.023	0.016	V
8	2.3000	0.0230	0.0015	V
9	5.7500	0.0230	0.0033	V
10	2.3000	0.0230	0.0015	V
11	11.500	0.023	0.015	V
12	2.3000	0.0000	0.0015	V
13	10.350	0.023	0.015	V
14	2.3000	0.0230	0.0015	V
15	4.6000	0.0460	0.0020	V
16	2.3000	0.0000	0.0015	V
17	9.2000	0.0230	0.0078	V
18	2.3000	0.0000	0.0025	V
19	8.1105	0.0375	0.0072	V
20	2.3000	0.0000	0.0025	V
21	4.0250	0.0230	0.0036	V
22	2.3000	0.0230	0.0025	V
23	6.5000	0.0140	0.0061	V
24	2.3000	0.0230	0.0025	V
25	5.8880	0.0230	0.0058	V
26	2.3000	0.0230	0.0025	V
27	2.3000	0.0230	0.0025	V
28	2.3000	0.0230	0.0025	V
29	4.9172	0.0182	0.0051	V
30	2.3000	0.0230	0.0025	V
31	4.5258	0.0178	0.0039	V
32	2.3000	0.0230	0.0025	V
33	2.3000	0.0092	0.0079	V
34	2.3000	0.0230	0.0025	V
35	3.8771	0.0361	0.0035	V
36	2.3000	0.0230	0.0025	V
37	3.6054	0.0404	0.0033	V
38	2.3000	0.0230	0.0025	V
39	2.3000	0.0230	0.0025	V
40	2.3000	0.0000	0.0025	V
41	3.1415	0.0135	0.0030	V
42	2.3000	0.0276	0.0066	V
43	2.9419	0.0209	0.0029	V
44	2.3000	0.0230	0.0025	V
45	2.3000	0.0230	0.0025	V
46	2.3000	0.0230	0.0025	V
47	2.5936	0.0406	0.0027	V
48	2.3000	0.0000	0.0025	V
49	2.4408	0.0350	0.0079	V
50	2.3000	0.0460	0.0025	V

Channel L2 (100 %) (fundamental harmonic: 230 V at 50 Hz)

<i>Harmonic order</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
2	6.9000	0.0230	0.0035	V
3	13.800	0.023	0.015	V
4	3.4500	0.0230	0.0018	V
5	18.400	0.023	0.016	V
6	2.3000	0.0000	0.0015	V
7	16.100	0.000	0.016	V
8	2.3000	0.0230	0.0015	V
9	5.7500	0.0230	0.0033	V
10	2.3000	0.0230	0.0015	V
11	11.500	0.023	0.015	V
12	2.3000	0.0000	0.0015	V
13	10.350	0.046	0.015	V
14	2.3000	0.0230	0.0015	V
15	4.6000	0.0230	0.0020	V
16	2.3000	0.0230	0.0015	V
17	9.2000	0.0230	0.0078	V
18	2.3000	0.0000	0.0025	V
19	8.1105	0.0145	0.0072	V
20	2.3000	0.0230	0.0025	V
21	4.0250	0.0230	0.0036	V
22	2.3000	0.0230	0.0025	V
23	6.5000	0.0140	0.0061	V
24	2.3000	0.0230	0.0025	V
25	5.8880	0.0230	0.0058	V
26	2.3000	0.0230	0.0025	V
27	2.3000	0.0230	0.0025	V
28	2.3000	0.0230	0.0025	V
29	4.9172	0.0412	0.0051	V
30	2.3000	0.0230	0.0025	V
31	4.5258	0.0178	0.0039	V
32	2.3000	0.0230	0.0025	V
33	2.3000	0.0230	0.0025	V
34	2.3000	0.0230	0.0025	V
35	3.8771	0.0361	0.0035	V
36	2.3000	0.0230	0.0025	V
37	3.6054	0.0174	0.0033	V
38	2.3000	0.0230	0.0025	V
39	2.3000	0.0230	0.0025	V
40	2.3000	0.0000	0.0025	V
41	3.1415	0.0135	0.0030	V
42	2.3000	0.0460	0.0025	V
43	2.9419	0.0439	0.0029	V
44	2.3000	0.0230	0.0025	V
45	2.3000	0.0345	0.0080	V
46	2.3000	0.0230	0.0025	V
47	2.5936	0.0406	0.0027	V
48	2.3000	0.0000	0.0025	V
49	2.4408	0.0258	0.0026	V
50	2.3000	0.0460	0.0025	V

Channel L3 (100 %) (fundamental harmonic: 230 V at 50 Hz)

<i>Harmonic order</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
2	6.9000	0.0138	0.0081	V
3	13.800	0.023	0.015	V
4	3.4500	0.0460	0.0018	V
5	18.400	0.023	0.016	V
6	2.3000	0.0230	0.0015	V
7	16.100	0.023	0.016	V
8	2.3000	0.0460	0.0015	V
9	5.7500	0.0230	0.0033	V
10	2.3000	0.0460	0.0015	V
11	11.500	0.023	0.015	V
12	2.3000	0.0230	0.0015	V
13	10.350	0.023	0.015	V
14	2.3000	0.0230	0.0015	V
15	4.6000	0.0230	0.0020	V
16	2.3000	0.0230	0.0015	V
17	9.2000	0.0230	0.0078	V
18	2.3000	0.0230	0.0025	V
19	8.1105	0.0214	0.0094	V
20	2.3000	0.0230	0.0025	V
21	4.0250	0.0230	0.0036	V
22	2.3000	0.0230	0.0025	V
23	6.5000	0.0140	0.0061	V
24	2.3000	0.0460	0.0025	V
25	5.8880	0.0230	0.0058	V
26	2.3000	0.0230	0.0025	V
27	2.3000	0.0230	0.0025	V
28	2.3000	0.0460	0.0025	V
29	4.9172	0.0412	0.0051	V
30	2.3000	0.0460	0.0025	V
31	4.5258	0.0408	0.0039	V
32	2.3000	0.0230	0.0025	V
33	2.3000	0.0230	0.0025	V
34	2.3000	0.0230	0.0025	V
35	3.8771	0.0361	0.0035	V
36	2.3000	0.0322	0.0079	V
37	3.6054	0.0059	0.0082	V
38	2.3000	0.0460	0.0025	V
39	2.3000	0.0230	0.0025	V
40	2.3000	0.0230	0.0025	V
41	3.1415	0.0365	0.0030	V
42	2.3000	0.0230	0.0025	V
43	2.9419	0.0209	0.0029	V
44	2.3000	0.0230	0.0025	V
45	2.3000	0.0230	0.0025	V
46	2.3000	0.0460	0.0025	V
47	2.5936	0.0406	0.0027	V
48	2.3000	0.0230	0.0025	V
49	2.4408	0.0028	0.0026	V
50	2.3000	0.0230	0.0025	V

Channel L1 (10 %) (fundamental harmonic: 230 V at 50 Hz)

<i>Harmonic order</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
2	0.6900	0.0000	0.0013	V
3	1.3800	0.0230	0.0014	V
4	0.3450	0.0230	0.0012	V
5	1.8400	0.0230	0.0014	V
6	0.2300	0.0230	0.0012	V
7	1.6100	0.0230	0.0014	V
8	0.2300	0.0230	0.0012	V
9	0.5750	0.0230	0.0013	V
10	0.2300	0.0230	0.0012	V
11	1.1500	0.0460	0.0014	V
12	0.2300	0.0230	0.0012	V
13	1.0350	0.0230	0.0014	V
14	0.2300	0.0230	0.0012	V
15	0.4600	0.0230	0.0013	V
16	0.2300	0.0230	0.0012	V
17	0.9200	0.0230	0.0016	V
18	0.2300	0.0230	0.0013	V
19	0.8111	0.0291	0.0016	V
20	0.2300	0.0230	0.0013	V
21	0.4025	0.0115	0.0014	V
22	0.2300	0.0230	0.0013	V
23	0.6500	0.0060	0.0015	V
24	0.2300	0.0230	0.0013	V
25	0.5888	0.0368	0.0015	V
26	0.2300	0.0230	0.0013	V
27	0.2300	0.0230	0.0013	V
28	0.2300	0.0230	0.0013	V
29	0.4917	0.0317	0.0014	V
30	0.2300	0.0230	0.0013	V
31	0.4526	0.0386	0.0014	V
32	0.2300	0.0230	0.0013	V
33	0.2300	0.0230	0.0013	V
34	0.2300	0.0230	0.0013	V
35	0.3877	0.0197	0.0014	V
36	0.2300	0.0460	0.0013	V
37	0.3605	0.0385	0.0014	V
38	0.2300	0.0230	0.0013	V
39	0.2300	0.0230	0.0013	V
40	0.2300	0.0230	0.0013	V
41	0.3141	0.0381	0.0013	V
42	0.2300	0.0460	0.0013	V
43	0.2942	0.0412	0.0013	V
44	0.2300	0.0230	0.0013	V
45	0.2300	0.0230	0.0013	V
46	0.2300	0.0230	0.0013	V
47	0.2594	0.0524	0.0013	V
48	0.2300	0.0460	0.0013	V
49	0.2441	0.0141	0.0013	V
50	0.2300	0.0460	0.0013	V

Channel L2 (10 %) (fundamental harmonic: 230 V at 50 Hz)

Harmonic order	Standard	Deviation	Expanded uncertainty	Units
2	0.6900	0.0000	0.0013	V
3	1.3800	0.0230	0.0014	V
4	0.3450	0.0230	0.0012	V
5	1.8400	0.0230	0.0014	V
6	0.2300	0.0230	0.0012	V
7	1.6100	0.0230	0.0014	V
8	0.2300	0.0230	0.0012	V
9	0.5750	0.0230	0.0013	V
10	0.2300	0.0230	0.0012	V
11	1.1500	0.0460	0.0014	V
12	0.2300	0.0230	0.0012	V
13	1.0350	0.0230	0.0014	V
14	0.2300	0.0230	0.0012	V
15	0.4600	0.0230	0.0013	V
16	0.2300	0.0230	0.0012	V
17	0.9200	0.0000	0.0016	V
18	0.2300	0.0230	0.0013	V
19	0.8111	0.0291	0.0016	V
20	0.2300	0.0230	0.0013	V
21	0.4025	0.0115	0.0014	V
22	0.2300	0.0230	0.0013	V
23	0.6500	0.0060	0.0015	V
24	0.2300	0.0230	0.0013	V
25	0.5888	0.0322	0.0063	V
26	0.2300	0.0230	0.0013	V
27	0.2300	0.0230	0.0013	V
28	0.2300	0.0230	0.0013	V
29	0.4917	0.0317	0.0014	V
30	0.2300	0.0230	0.0013	V
31	0.4526	0.0386	0.0014	V
32	0.2300	0.0230	0.0013	V
33	0.2300	0.0230	0.0013	V
34	0.2300	0.0230	0.0013	V
35	0.3877	0.0197	0.0014	V
36	0.2300	0.0460	0.0013	V
37	0.3605	0.0155	0.0014	V
38	0.2300	0.0230	0.0013	V
39	0.2300	0.0230	0.0013	V
40	0.2300	0.0230	0.0013	V
41	0.3141	0.0381	0.0013	V
42	0.2300	0.0460	0.0013	V
43	0.2942	0.0412	0.0013	V
44	0.2300	0.0230	0.0013	V
45	0.2300	0.0230	0.0013	V
46	0.2300	0.0230	0.0013	V
47	0.2594	0.0524	0.0013	V
48	0.2300	0.0460	0.0013	V
49	0.2441	0.0141	0.0013	V
50	0.2300	0.0460	0.0013	V

Channel L3 (10 %) (fundamental harmonic: 230 V at 50 Hz)

Harmonic order	Standard	Deviation	Expanded uncertainty	Units
2	0.6900	0.0230	0.0013	V
3	1.3800	0.0230	0.0014	V
4	0.3450	0.0230	0.0012	V
5	1.8400	0.0460	0.0014	V
6	0.2300	0.0184	0.0063	V
7	1.6100	0.0046	0.0063	V
8	0.2300	0.0230	0.0012	V
9	0.5750	0.0230	0.0013	V
10	0.2300	0.0230	0.0012	V
11	1.1500	0.0230	0.0014	V
12	0.2300	0.0230	0.0012	V
13	1.0350	0.0230	0.0014	V
14	0.2300	0.0230	0.0012	V
15	0.4600	0.0230	0.0013	V
16	0.2300	0.0230	0.0012	V
17	0.9200	0.0230	0.0016	V
18	0.2300	0.0230	0.0013	V
19	0.8111	0.0291	0.0016	V
20	0.2300	0.0230	0.0013	V
21	0.4025	0.0115	0.0014	V
22	0.2300	0.0230	0.0013	V
23	0.6500	0.0290	0.0015	V
24	0.2300	0.0230	0.0013	V
25	0.5888	0.0138	0.0015	V
26	0.2300	0.0230	0.0013	V
27	0.2300	0.0230	0.0013	V
28	0.2300	0.0230	0.0013	V
29	0.4917	0.0317	0.0014	V
30	0.2300	0.0230	0.0013	V
31	0.4526	0.0386	0.0014	V
32	0.2300	0.0230	0.0013	V
33	0.2300	0.0230	0.0013	V
34	0.2300	0.0230	0.0013	V
35	0.3877	0.0197	0.0014	V
36	0.2300	0.0460	0.0013	V
37	0.3605	0.0155	0.0014	V
38	0.2300	0.0230	0.0013	V
39	0.2300	0.0230	0.0013	V
40	0.2300	0.0230	0.0013	V
41	0.3141	0.0381	0.0013	V
42	0.2300	0.0460	0.0013	V
43	0.2942	0.0412	0.0013	V
44	0.2300	0.0230	0.0013	V
45	0.2300	0.0230	0.0013	V
46	0.2300	0.0230	0.0013	V
47	0.2594	0.0524	0.0013	V
48	0.2300	0.0460	0.0013	V
49	0.2441	0.0141	0.0013	V
50	0.2300	0.0460	0.0013	V



Channel L1 (200 %) (fundamental harmonic: 230 V at 50 Hz)

Harmonic order	Standard	Deviation	Expanded uncertainty	Units
2	13.800	0.023	0.015	V
3	27.600	0.023	0.018	V
4	6.9000	0.0230	0.0035	V
5	36.800	0.023	0.020	V
6	4.6000	0.0230	0.0020	V
7	32.200	0.023	0.019	V
8	4.6000	0.0276	0.0064	V
9	11.500	0.023	0.015	V
10	4.6000	0.0460	0.0020	V
11	23.000	0.023	0.017	V
12	4.6000	0.0230	0.0020	V
13	20.700	0.023	0.017	V
14	4.6000	0.0230	0.0020	V
15	9.2000	0.0230	0.0040	V
16	4.6000	0.0230	0.0020	V
17	18.400	0.023	0.024	V
18	4.6000	0.0230	0.0039	V
19	16.221	0.052	0.023	V
20	4.6000	0.0230	0.0039	V
21	8.0500	0.0460	0.0071	V
22	4.6000	0.0460	0.0039	V
23	13.000	0.0280	0.0202	V
24	4.6000	0.0230	0.0039	V
25	11.776	0.023	0.020	V
26	4.6000	0.0368	0.0083	V
27	4.6000	0.0230	0.0039	V
28	4.6000	0.0460	0.0039	V
29	9.8345	0.0365	0.0082	V
30	4.6000	0.0230	0.0039	V
31	9.0516	0.0126	0.0078	V
32	4.6000	0.0230	0.0039	V
33	4.6000	0.0230	0.0039	V
34	4.6000	0.0230	0.0039	V
35	7.7543	0.0263	0.0069	V
36	4.6000	0.0230	0.0039	V
37	7.2108	0.0118	0.0066	V
38	4.6000	0.0460	0.0039	V
39	4.6000	0.0460	0.0039	V
40	4.6000	0.0230	0.0039	V
41	6.2829	0.0269	0.0060	V
42	4.6000	0.0460	0.0039	V
43	5.8837	0.0187	0.0058	V
44	4.6000	0.0230	0.0039	V
45	4.6000	0.0230	0.0039	V
46	4.6000	0.0460	0.0039	V
47	5.1872	0.0352	0.0053	V
48	4.6000	0.0230	0.0039	V
49	4.8816	0.0286	0.0051	V
50	4.6000	0.0460	0.0039	V

Channel L2 (200 %) (fundamental harmonic: 230 V at 50 Hz)

Harmonic order	Standard	Deviation	Expanded uncertainty	Units
2	13.800	0.023	0.015	V
3	27.600	0.023	0.018	V
4	6.9000	0.0230	0.0035	V
5	36.800	0.023	0.020	V
6	4.6000	0.0230	0.0020	V
7	32.200	0.000	0.019	V
8	4.6000	0.0230	0.0020	V
9	11.500	0.023	0.015	V
10	4.6000	0.0230	0.0020	V
11	23.000	0.023	0.017	V
12	4.6000	0.0230	0.0020	V
13	20.700	0.023	0.017	V
14	4.6000	0.0230	0.0020	V
15	9.2000	0.0230	0.0040	V
16	4.6000	0.0230	0.0020	V
17	18.400	0.023	0.024	V
18	4.6000	0.0230	0.0039	V
19	16.221	0.052	0.023	V
20	4.6000	0.0230	0.0039	V
21	8.0500	0.0230	0.0071	V
22	4.6000	0.0230	0.0039	V
23	13.000	0.0234	0.0202	V
24	4.6000	0.0230	0.0039	V
25	11.776	0.023	0.020	V
26	4.6000	0.0230	0.0039	V
27	4.6000	0.0230	0.0039	V
28	4.6000	0.0230	0.0039	V
29	9.8345	0.0365	0.0082	V
30	4.6000	0.0230	0.0039	V
31	9.0516	0.0126	0.0078	V
32	4.6000	0.0230	0.0039	V
33	4.6000	0.0230	0.0039	V
34	4.6000	0.0230	0.0039	V
35	7.7543	0.0263	0.0069	V
36	4.6000	0.0230	0.0039	V
37	7.2108	0.0348	0.0066	V
38	4.6000	0.0230	0.0039	V
39	4.6000	0.0230	0.0039	V
40	4.6000	0.0230	0.0039	V
41	6.2829	0.0269	0.0060	V
42	4.6000	0.0230	0.0039	V
43	5.8837	0.0417	0.0058	V
44	4.6000	0.0230	0.0039	V
45	4.6000	0.0414	0.0071	V
46	4.6000	0.0230	0.0039	V
47	5.1872	0.0352	0.0053	V
48	4.6000	0.0230	0.0039	V
49	4.8816	0.0286	0.0051	V
50	4.6000	0.0230	0.0039	V

Channel L3 (200 %) (fundamental harmonic: 230 V at 50 Hz)

Harmonic order	Standard	Deviation	Expanded uncertainty	Units
2	13.800	0.023	0.015	V
3	27.600	0.000	0.018	V
4	6.9000	0.0230	0.0035	V
5	36.800	0.023	0.020	V
6	4.6000	0.0000	0.0020	V
7	32.200	0.000	0.019	V
8	4.6000	0.0230	0.0020	V
9	11.500	0.023	0.015	V
10	4.6000	0.0230	0.0020	V
11	23.000	0.023	0.017	V
12	4.6000	0.0000	0.0020	V
13	20.700	0.023	0.017	V
14	4.6000	0.0000	0.0020	V
15	9.2000	0.0230	0.0040	V
16	4.6000	0.0230	0.0020	V
17	18.400	0.023	0.024	V
18	4.6000	0.0000	0.0039	V
19	16.221	0.029	0.023	V
20	4.6000	0.0230	0.0039	V
21	8.0500	0.0230	0.0071	V
22	4.6000	0.0230	0.0039	V
23	13.000	0.0280	0.0202	V
24	4.6000	0.0230	0.0039	V
25	11.776	0.023	0.020	V
26	4.6000	0.0230	0.0039	V
27	4.6000	0.0000	0.0039	V
28	4.6000	0.0000	0.0039	V
29	9.8345	0.0135	0.0082	V
30	4.6000	0.0230	0.0039	V
31	9.0516	0.0126	0.0078	V
32	4.6000	0.0230	0.0039	V
33	4.6000	0.0230	0.0039	V
34	4.6000	0.0230	0.0039	V
35	7.7543	0.0079	0.0086	V
36	4.6000	0.0230	0.0039	V
37	7.2108	0.0118	0.0066	V
38	4.6000	0.0000	0.0039	V
39	4.6000	0.0000	0.0039	V
40	4.6000	0.0230	0.0039	V
41	6.2829	0.0269	0.0060	V
42	4.6000	0.0230	0.0039	V
43	5.8837	0.0187	0.0058	V
44	4.6000	0.0230	0.0039	V
45	4.6000	0.0230	0.0039	V
46	4.6000	0.0000	0.0039	V
47	5.1872	0.0352	0.0053	V
48	4.6000	0.0230	0.0039	V
49	4.8816	0.0286	0.0051	V
50	4.6000	0.0000	0.0039	V

*Magnitude:* Voltage harmonics

*Range:* Order 2<sup>nd</sup> – 50<sup>th</sup> (fundamental harmonic: 230 V at 60 Hz)

*Points:* 100 %, 10 %, 200 %

➤ See tables in following pages

Channel L1 (100 %) (fundamental harmonic: 230 V at 60 Hz)

<i>Harmonic order</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
2	6.9000	0.0230	0.0035	V
3	13.800	0.023	0.015	V
4	3.4500	0.0230	0.0018	V
5	18.400	0.000	0.016	V
6	2.3000	0.0000	0.0015	V
7	16.100	0.023	0.016	V
8	2.3000	0.0230	0.0015	V
9	5.7500	0.0000	0.0033	V
10	2.3000	0.0230	0.0015	V
11	11.500	0.000	0.015	V
12	2.3000	0.0230	0.0015	V
13	10.350	0.023	0.015	V
14	2.3000	0.0230	0.0015	V
15	4.6000	0.0230	0.0039	V
16	2.3000	0.0115	0.0079	V
17	9.2000	0.0230	0.0078	V
18	2.3000	0.0230	0.0025	V
19	8.1105	0.0145	0.0072	V
20	2.3000	0.0230	0.0025	V
21	4.0250	0.0230	0.0036	V
22	2.3000	0.0230	0.0025	V
23	6.5000	0.0370	0.0061	V
24	2.3000	0.0230	0.0025	V
25	5.8880	0.0230	0.0058	V
26	2.3000	0.0230	0.0025	V
27	2.3000	0.0000	0.0025	V
28	2.3000	0.0230	0.0025	V
29	4.9172	0.0412	0.0051	V
30	2.3000	0.0230	0.0025	V
31	4.5258	0.0178	0.0039	V
32	2.3000	0.0230	0.0025	V
33	2.3000	0.0230	0.0025	V
34	2.3000	0.0000	0.0025	V
35	3.8771	0.0131	0.0035	V
36	2.3000	0.0230	0.0025	V
37	3.6054	0.0404	0.0033	V
38	2.3000	0.0230	0.0025	V
39	2.3000	0.0000	0.0025	V
40	2.3000	0.0230	0.0025	V
41	3.1415	0.0135	0.0030	V
42	2.3000	0.0230	0.0025	V
43	2.9419	0.0209	0.0029	V
44	2.3000	0.0230	0.0025	V
45	2.3000	0.0138	0.0143	V
46	2.3000	0.0230	0.0025	V
47	2.5936	0.0406	0.0027	V
48	2.3000	0.0230	0.0025	V
49	2.4408	0.0488	0.0026	V
50	2.3000	0.0230	0.0025	V

Channel L2 (100 %) (fundamental harmonic: 230 V at 60 Hz)

Harmonic order	Standard	Deviation	Expanded uncertainty	Units
2	6.9000	0.0000	0.0035	V
3	13.800	0.023	0.015	V
4	3.4500	0.0230	0.0018	V
5	18.400	0.023	0.016	V
6	2.3000	0.0000	0.0015	V
7	16.100	0.023	0.016	V
8	2.3000	0.0230	0.0015	V
9	5.7500	0.0230	0.0033	V
10	2.3000	0.0230	0.0015	V
11	11.500	0.023	0.015	V
12	2.3000	0.0230	0.0015	V
13	10.350	0.000	0.015	V
14	2.3000	0.0230	0.0015	V
15	4.6000	0.0000	0.0039	V
16	2.3000	0.0230	0.0025	V
17	9.2000	0.0230	0.0078	V
18	2.3000	0.0230	0.0025	V
19	8.1105	-0.0085	0.0072	V
20	2.3000	0.0230	0.0025	V
21	4.0250	0.0460	0.0036	V
22	2.3000	0.0230	0.0025	V
23	6.5000	0.0370	0.0061	V
24	2.3000	0.0230	0.0025	V
25	5.8880	0.0230	0.0058	V
26	2.3000	0.0230	0.0025	V
27	2.3000	0.0000	0.0025	V
28	2.3000	0.0230	0.0025	V
29	4.9172	0.0412	0.0051	V
30	2.3000	0.0230	0.0025	V
31	4.5258	0.0178	0.0039	V
32	2.3000	0.0230	0.0025	V
33	2.3000	0.0230	0.0025	V
34	2.3000	0.0000	0.0025	V
35	3.8771	0.0131	0.0035	V
36	2.3000	0.0230	0.0025	V
37	3.6054	0.0174	0.0033	V
38	2.3000	0.0230	0.0025	V
39	2.3000	0.0460	0.0025	V
40	2.3000	0.0230	0.0025	V
41	3.1415	0.0135	0.0030	V
42	2.3000	0.0230	0.0025	V
43	2.9419	0.0209	0.0029	V
44	2.3000	0.0230	0.0025	V
45	2.3000	0.0460	0.0025	V
46	2.3000	0.0230	0.0025	V
47	2.5936	0.0406	0.0027	V
48	2.3000	0.0230	0.0025	V
49	2.4408	0.0488	0.0026	V
50	2.3000	0.0230	0.0025	V

Channel L3 (100 %) (fundamental harmonic: 230 V at 60 Hz)

<i>Harmonic order</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
2	6.9000	0.0230	0.0035	V
3	13.800	0.023	0.015	V
4	3.4500	0.0460	0.0018	V
5	18.400	0.000	0.016	V
6	2.3000	0.0000	0.0015	V
7	16.100	0.023	0.016	V
8	2.3000	0.0460	0.0015	V
9	5.7500	0.0230	0.0033	V
10	2.3000	0.0000	0.0015	V
11	11.500	0.023	0.015	V
12	2.3000	0.0000	0.0015	V
13	10.350	0.000	0.015	V
14	2.3000	0.0460	0.0015	V
15	4.6000	0.0000	0.0039	V
16	2.3000	0.0000	0.0025	V
17	9.2000	0.0000	0.0078	V
18	2.3000	0.0460	0.0025	V
19	8.1105	0.0145	0.0072	V
20	2.3000	0.0460	0.0025	V
21	4.0250	0.0230	0.0036	V
22	2.3000	0.0460	0.0025	V
23	6.5000	0.0370	0.0061	V
24	2.3000	0.0460	0.0025	V
25	5.8880	0.0230	0.0058	V
26	2.3000	0.0460	0.0025	V
27	2.3000	0.0000	0.0025	V
28	2.3000	0.0000	0.0025	V
29	4.9172	0.0412	0.0051	V
30	2.3000	0.0460	0.0025	V
31	4.5258	0.0178	0.0039	V
32	2.3000	0.0000	0.0025	V
33	2.3000	0.0460	0.0025	V
34	2.3000	0.0000	0.0025	V
35	3.8771	0.0131	0.0035	V
36	2.3000	0.0460	0.0025	V
37	3.6054	0.0174	0.0033	V
38	2.3000	0.0460	0.0025	V
39	2.3000	0.0000	0.0025	V
40	2.3000	0.0460	0.0025	V
41	3.1415	0.0365	0.0030	V
42	2.3000	0.0460	0.0025	V
43	2.9419	0.0439	0.0029	V
44	2.3000	0.0460	0.0025	V
45	2.3000	0.0000	0.0025	V
46	2.3000	0.0460	0.0025	V
47	2.5936	0.0406	0.0027	V
48	2.3000	0.0460	0.0025	V
49	2.4408	0.0488	0.0026	V
50	2.3000	0.0460	0.0025	V

## Channel L1 (10 %) (fundamental harmonic: 230 V at 60 Hz)

Harmonic order	Standard	Deviation	Expanded uncertainty	Units
2	0.6900	0.0000	0.0013	V
3	1.3800	0.0460	0.0014	V
4	0.3450	0.0230	0.0012	V
5	1.8400	0.0230	0.0014	V
6	0.2300	0.0161	0.0072	V
7	1.6100	0.0230	0.0014	V
8	0.2300	0.0230	0.0012	V
9	0.5750	0.0230	0.0013	V
10	0.2300	0.0230	0.0012	V
11	1.1500	0.0230	0.0014	V
12	0.2300	0.0230	0.0012	V
13	1.0350	0.0230	0.0014	V
14	0.2300	0.0230	0.0012	V
15	0.4600	0.0230	0.0013	V
16	0.2300	0.0230	0.0012	V
17	0.9200	0.0460	0.0016	V
18	0.2300	0.0230	0.0013	V
19	0.8111	0.0291	0.0016	V
20	0.2300	0.0230	0.0013	V
21	0.4025	0.0345	0.0014	V
22	0.2300	0.0230	0.0013	V
23	0.6500	0.0290	0.0015	V
24	0.2300	0.0230	0.0013	V
25	0.5888	0.0368	0.0015	V
26	0.2300	0.0230	0.0013	V
27	0.2300	0.0230	0.0013	V
28	0.2300	0.0230	0.0013	V
29	0.4917	0.0317	0.0014	V
30	0.2300	0.0000	0.0013	V
31	0.4526	0.0156	0.0014	V
32	0.2300	0.0230	0.0013	V
33	0.2300	0.0230	0.0013	V
34	0.2300	0.0230	0.0013	V
35	0.3877	0.0197	0.0014	V
36	0.2300	0.0230	0.0013	V
37	0.3605	0.0385	0.0014	V
38	0.2300	0.0460	0.0013	V
39	0.2300	0.0460	0.0013	V
40	0.2300	0.0230	0.0013	V
41	0.3141	0.0381	0.0013	V
42	0.2300	0.0230	0.0013	V
43	0.2942	0.0412	0.0013	V
44	0.2300	0.0000	0.0013	V
45	0.2300	0.0460	0.0013	V
46	0.2300	0.0460	0.0013	V
47	0.2594	0.0294	0.0013	V
48	0.2300	0.0230	0.0013	V
49	0.2441	0.0371	0.0013	V
50	0.2300	0.0230	0.0013	V



Channel L2 (10 %) (fundamental harmonic: 230 V at 60 Hz)

<i>Harmonic order</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
2	0.6900	0.0000	0.0013	V
3	1.3800	0.0460	0.0014	V
4	0.3450	0.0230	0.0012	V
5	1.8400	0.0230	0.0014	V
6	0.2300	0.0230	0.0012	V
7	1.6100	0.0460	0.0014	V
8	0.2300	0.0230	0.0012	V
9	0.5750	0.0230	0.0013	V
10	0.2300	0.0230	0.0012	V
11	1.1500	0.0230	0.0014	V
12	0.2300	0.0230	0.0012	V
13	1.0350	0.0230	0.0014	V
14	0.2300	0.0230	0.0012	V
15	0.4600	0.0230	0.0013	V
16	0.2300	0.0230	0.0012	V
17	0.9200	0.0460	0.0016	V
18	0.2300	0.0230	0.0013	V
19	0.8111	0.0176	0.0079	V
20	0.2300	0.0230	0.0013	V
21	0.4025	0.0345	0.0014	V
22	0.2300	0.0230	0.0013	V
23	0.6500	0.0290	0.0015	V
24	0.2300	0.0230	0.0013	V
25	0.5888	0.0368	0.0015	V
26	0.2300	0.0230	0.0013	V
27	0.2300	0.0230	0.0013	V
28	0.2300	0.0230	0.0013	V
29	0.4917	0.0317	0.0014	V
30	0.2300	0.0000	0.0013	V
31	0.4526	0.0156	0.0014	V
32	0.2300	0.0230	0.0013	V
33	0.2300	0.0230	0.0013	V
34	0.2300	0.0230	0.0013	V
35	0.3877	0.0197	0.0014	V
36	0.2300	0.0230	0.0013	V
37	0.3605	0.0385	0.0014	V
38	0.2300	0.0460	0.0013	V
39	0.2300	0.0460	0.0013	V
40	0.2300	0.0230	0.0013	V
41	0.3141	0.0381	0.0013	V
42	0.2300	0.0230	0.0013	V
43	0.2942	0.0412	0.0013	V
44	0.2300	0.0000	0.0013	V
45	0.2300	0.0460	0.0013	V
46	0.2300	0.0460	0.0013	V
47	0.2594	0.0294	0.0013	V
48	0.2300	0.0230	0.0013	V
49	0.2441	0.0371	0.0013	V
50	0.2300	0.0230	0.0013	V

## Channel L3 (10 %) (fundamental harmonic: 230 V at 60 Hz)

Harmonic order	Standard	Deviation	Expanded uncertainty	Units
2	0.6900	0.0460	0.0013	V
3	1.3800	0.0460	0.0014	V
4	0.3450	0.0230	0.0012	V
5	1.8400	0.0230	0.0014	V
6	0.2300	0.0000	0.0012	V
7	1.6100	0.0230	0.0014	V
8	0.2300	0.0230	0.0012	V
9	0.5750	0.0230	0.0013	V
10	0.2300	0.0230	0.0012	V
11	1.1500	0.0230	0.0014	V
12	0.2300	0.0230	0.0012	V
13	1.0350	0.0230	0.0014	V
14	0.2300	0.0230	0.0012	V
15	0.4600	0.0000	0.0013	V
16	0.2300	0.0230	0.0012	V
17	0.9200	0.0460	0.0016	V
18	0.2300	0.0230	0.0013	V
19	0.8111	0.0061	0.0016	V
20	0.2300	0.0230	0.0013	V
21	0.4025	0.0345	0.0014	V
22	0.2300	0.0230	0.0013	V
23	0.6500	0.0290	0.0015	V
24	0.2300	0.0230	0.0013	V
25	0.5888	0.0368	0.0015	V
26	0.2300	0.0230	0.0013	V
27	0.2300	0.0230	0.0013	V
28	0.2300	0.0230	0.0013	V
29	0.4917	0.0087	0.0014	V
30	0.2300	0.0000	0.0013	V
31	0.4526	0.0156	0.0014	V
32	0.2300	0.0230	0.0013	V
33	0.2300	0.0230	0.0013	V
34	0.2300	0.0230	0.0013	V
35	0.3877	0.0197	0.0014	V
36	0.2300	0.0230	0.0013	V
37	0.3605	0.0385	0.0014	V
38	0.2300	0.0460	0.0013	V
39	0.2300	0.0460	0.0013	V
40	0.2300	0.0230	0.0013	V
41	0.3141	0.0381	0.0013	V
42	0.2300	0.0230	0.0013	V
43	0.2942	0.0412	0.0013	V
44	0.2300	0.0000	0.0013	V
45	0.2300	0.0460	0.0013	V
46	0.2300	0.0460	0.0013	V
47	0.2594	0.0294	0.0013	V
48	0.2300	0.0230	0.0013	V
49	0.2441	0.0371	0.0013	V
50	0.2300	0.0230	0.0013	V

Channel L1 (200 %) (fundamental harmonic: 230 V at 60 Hz)

Harmonic order	Standard	Deviation	Expanded uncertainty	Units
2	13.800	0.023	0.015	V
3	27.600	0.000	0.018	V
4	6.9000	0.0000	0.0035	V
5	36.800	-0.023	0.020	V
6	4.6000	0.0230	0.0020	V
7	32.200	0.023	0.019	V
8	4.6000	0.0230	0.0020	V
9	11.500	0.000	0.015	V
10	4.6000	0.0230	0.0020	V
11	23.000	0.023	0.017	V
12	4.6000	0.0230	0.0020	V
13	20.700	0.023	0.017	V
14	4.6000	0.0460	0.0020	V
15	9.2000	0.0230	0.0078	V
16	4.6000	0.0414	0.0065	V
17	18.400	0.000	0.024	V
18	4.6000	0.0460	0.0039	V
19	16.221	0.006	0.023	V
20	4.6000	0.0230	0.0039	V
21	8.0500	0.0230	0.0071	V
22	4.6000	0.0230	0.0039	V
23	13.000	0.0280	0.0202	V
24	4.6000	0.0230	0.0039	V
25	11.776	0.023	0.020	V
26	4.6000	0.0460	0.0039	V
27	4.6000	0.0230	0.0039	V
28	4.6000	0.0460	0.0039	V
29	9.8345	0.0503	0.0142	V
30	4.6000	0.0460	0.0039	V
31	9.0516	0.0356	0.0078	V
32	4.6000	0.0460	0.0039	V
33	4.6000	0.0276	0.0071	V
34	4.6000	0.0230	0.0039	V
35	7.7543	0.0263	0.0069	V
36	4.6000	0.0460	0.0039	V
37	7.2108	0.0118	0.0066	V
38	4.6000	0.0414	0.0071	V
39	4.6000	0.0230	0.0039	V
40	4.6000	0.0230	0.0039	V
41	6.2829	0.0269	0.0060	V
42	4.6000	0.0230	0.0039	V
43	5.8837	0.0417	0.0058	V
44	4.6000	0.0230	0.0039	V
45	4.6000	0.0230	0.0039	V
46	4.6000	0.0230	0.0039	V
47	5.1872	0.0352	0.0053	V
48	4.6000	0.0690	0.0039	V
49	4.8816	0.0516	0.0051	V
50	4.6000	0.0690	0.0039	V

Channel L2 (200 %) (fundamental harmonic: 230 V at 60 Hz)

<i>Harmonic order</i>	<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>
2	13.800	0.023	0.015	V
3	27.600	0.000	0.018	V
4	6.9000	0.0000	0.0035	V
5	36.800	0.000	0.020	V
6	4.6000	0.0000	0.0020	V
7	32.200	0.000	0.019	V
8	4.6000	0.0000	0.0020	V
9	11.500	0.023	0.015	V
10	4.6000	0.0000	0.0020	V
11	23.000	0.023	0.017	V
12	4.6000	0.0000	0.0020	V
13	20.700	0.023	0.017	V
14	4.6000	0.0230	0.0020	V
15	9.2000	0.0230	0.0078	V
16	4.6000	0.0230	0.0039	V
17	18.400	0.023	0.024	V
18	4.6000	0.0230	0.0039	V
19	16.221	0.006	0.023	V
20	4.6000	0.0161	0.0079	V
21	8.0500	0.0230	0.0071	V
22	4.6000	0.0046	0.0071	V
23	13.000	0.0280	0.0202	V
24	4.6000	0.0230	0.0039	V
25	11.776	0.000	0.020	V
26	4.6000	0.0230	0.0039	V
27	4.6000	0.0000	0.0039	V
28	4.6000	0.0230	0.0039	V
29	9.8345	0.0595	0.0082	V
30	4.6000	0.0230	0.0039	V
31	9.0516	0.0356	0.0078	V
32	4.6000	0.0230	0.0039	V
33	4.6000	0.0230	0.0039	V
34	4.6000	0.0000	0.0039	V
35	7.7543	0.0263	0.0069	V
36	4.6000	0.0230	0.0039	V
37	7.2108	0.0118	0.0066	V
38	4.6000	0.0230	0.0039	V
39	4.6000	0.0368	0.0128	V
40	4.6000	0.0230	0.0158	V
41	6.2829	0.0499	0.0060	V
42	4.6000	0.0000	0.0039	V
43	5.8837	0.0417	0.0058	V
44	4.6000	0.0092	0.0128	V
45	4.6000	0.0138	0.0145	V
46	4.6000	0.0460	0.0039	V
47	5.1872	0.0352	0.0053	V
48	4.6000	0.0460	0.0039	V
49	4.8816	0.0516	0.0051	V
50	4.6000	0.0460	0.0039	V

Channel L3 (200 %) (fundamental harmonic: 230 V at 60 Hz)

Harmonic order	Standard	Deviation	Expanded uncertainty	Units
2	13.800	0.018	0.015	V
3	27.600	0.000	0.018	V
4	6.9000	0.0230	0.0035	V
5	36.800	0.000	0.020	V
6	4.6000	0.0000	0.0020	V
7	32.200	0.023	0.019	V
8	4.6000	0.0138	0.0077	V
9	11.500	0.023	0.015	V
10	4.6000	0.0000	0.0020	V
11	23.000	0.000	0.017	V
12	4.6000	0.0000	0.0020	V
13	20.700	0.000	0.017	V
14	4.6000	0.0230	0.0020	V
15	9.2000	0.0000	0.0078	V
16	4.6000	0.0230	0.0039	V
17	18.400	-0.018	0.024	V
18	4.6000	0.0000	0.0039	V
19	16.221	0.006	0.023	V
20	4.6000	0.0230	0.0039	V
21	8.0500	0.0000	0.0071	V
22	4.6000	0.0184	0.0071	V
23	13.000	0.0050	0.0202	V
24	4.6000	0.0230	0.0039	V
25	11.776	0.000	0.020	V
26	4.6000	0.0000	0.0039	V
27	4.6000	0.0000	0.0039	V
28	4.6000	0.0230	0.0039	V
29	9.8345	0.0595	0.0082	V
30	4.6000	0.0230	0.0039	V
31	9.0516	0.0126	0.0078	V
32	4.6000	0.0230	0.0039	V
33	4.6000	0.0230	0.0039	V
34	4.6000	0.0230	0.0039	V
35	7.7543	0.0033	0.0069	V
36	4.6000	0.0000	0.0039	V
37	7.2108	0.0118	0.0066	V
38	4.6000	0.0230	0.0039	V
39	4.6000	0.0230	0.0039	V
40	4.6000	0.0230	0.0039	V
41	6.2829	0.0269	0.0060	V
42	4.6000	0.0230	0.0039	V
43	5.8837	0.0187	0.0058	V
44	4.6000	0.0230	0.0039	V
45	4.6000	0.0230	0.0039	V
46	4.6000	0.0230	0.0039	V
47	5.1872	0.0122	0.0053	V
48	4.6000	0.0230	0.0039	V
49	4.8816	0.0516	0.0051	V
50	4.6000	0.0230	0.0039	V

*Magnitude:* Voltage unbalance (50 Hz)

*Negative sequence coefficient ( $u_2$ )*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	
5.830	0.009	0.015	%	*
6.533	0.006	0.015	%	*
6.927	-0.006	0.015	%	*
1.981	0.004	0.015	%	*
0.161	0.005	0.015	%	*
0.348	-0.004	0.015	%	*

Note: Negative sequence coefficient ( $u_2$ ) is reported as 'unbalance coefficient' ( $K_d$ ) by the instrument.

*Magnitude:* Voltage unbalance (50 Hz)

*Zero sequence coefficient ( $u_0$ )*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	
5.830	0.014	0.015	%	*
6.533	0.010	0.015	%	*
6.926	0.007	0.015	%	*
4.032	0.010	0.015	%	*
0.159	0.007	0.015	%	*
0.349	0.004	0.015	%	*

Note: Zero sequence coefficient ( $u_0$ ) is reported as 'asymmetry coefficient' ( $K_a$ ) by the instrument ( $K_a$ ).

*Magnitude:* Voltage unbalance (60 Hz)

*Negative sequence coefficient ( $u_2$ )*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	
5.830	0.009	0.015	%	*
6.533	0.005	0.015	%	*
6.927	-0.002	0.015	%	*
1.981	0.007	0.015	%	*
0.161	0.005	0.015	%	*
0.348	0.001	0.015	%	*

Note: Negative sequence coefficient ( $u_2$ ) is reported as 'unbalance coefficient' ( $K_d$ ) by the instrument.

\* Point not covered by the accreditation of ENAC granted to the laboratory.

*Magnitude:* Voltage unbalance (60 Hz)

*Zero sequence coefficient ( $u_0$ )*

<i>Standard</i>	<i>Deviation</i>	<i>Expanded uncertainty</i>	<i>Units</i>	
5.830	0.022	0.015	%	*
6.533	0.017	0.015	%	*
6.926	0.006	0.015	%	*
4.032	0.015	0.015	%	*
0.159	0.003	0.015	%	*
0.349	0.000	0.015	%	*

Note: Zero sequence coefficient ( $u_0$ ) is reported as 'asymmetry coefficient' ( $K_a$ ) by the instrument ( $K_a$ ).

\* Point not covered by the accreditation of ENAC granted to the laboratory.

*Remarks:*

- (1) The results must be understood as Deviation  $\pm$  Expanded uncertainty.
- (2) The value of Deviation must be considered as the difference between the values of Reference and Instrument Under Calibration:  $D = X_{\text{reference}} - X_{\text{IUC}}$ .



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