

Certificate of Calibration

Manufacturer: **Radian Research, Inc.**
Instrument Model: **RX-33-PQ/AS Xytronic Portable Standard**
Serial Number: XXXXXX
Firmware Revision: 12.02.03
Error Specification: 0.01% worst case



ISO 9001:2015 Certified Quality Management System
ISO/IEC 17025:2017 Accredited Laboratory

Customer Name: Radian Research, Inc.
Address: 3852 Fortune Drive
Lafayette, IN 47905

Calibration Lab Name: Radian Research, Inc.
Calibration Lab Address: 3852 Fortune Drive, Lafayette, IN 47905, USA
Calibration Date: 16-Oct-26
Report Issue Date: 16-Oct-26

Environmental Conditions	CE Number:	CE1234
Temperature: 23°C +/- 2°C	P.O.Number:	PO5678
Humidity: between 30% and 60%	RMA:	RO98765

Physical Condition: Undamaged

Note: If the device is out of tolerance, it will be adjusted, unless otherwise requested by the customer. Results are considered out of tolerance if at any measurement, the magnitude of measured error + measurement uncertainty + the guard band of 0.001% error (10 ppm) is greater than the published error specification.

Radian Research's As-Found Test Results showed this Instrument to be:

☒ New ☐ In Tolerance ☐ Out of Tolerance ☐ Inoperative ☐ Limited Calibration

Radian Research, Inc. certifies the instrument listed above meets or exceeds specifications and was calibrated in compliance with ANSI/NCSL Z540-1-1994. Identified results are accredited to ISO/IEC 17025:2017 "General Requirements for the Competence of Testing and Calibration laboratories", using applicable Radian Research procedures which meet the requirements of ISO 9001:2015 and ISO/IEC Guide 98-3 "Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)".

This instrument was calibrated by a Radian Research RS-933 Syntron Automated Calibration System which is traceable to the National Institute of Standards and Technology (NIST) and/or other National Metrology Institute (NMI). The Automated Calibration system is cross checked and calibrated on a schedule which is adjusted to maintain required accuracies and traceability. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2.

Procedure used for Calibration: 9912270
Software used for Calibration: Radian Research RS-933 Control Application Version 2.6.8312.21655
RS-933 Tool Number: 9911278

Standards Used in This Calibration:

<u>Description</u>	<u>Serial Number(s):</u>	<u>Cal. Source</u>	<u>Cal. Number:</u>	<u>Cal. Due Date:</u>
RS-940B Data Collection Module	933084	Radian Research	933084-20260413	4/13/2027
RS-711 Syntron with RS-932 Boost Module (Phase A)	703143	Radian Research	703143-20260219	2/19/2027
RS-711 Syntron with RS-932 Boost Module (Phase B)	703144	Radian Research	703144-20260302	3/2/2027
RS-711 Syntron with RS-932 Boost Module (Phase C)	703146	Radian Research	703146-20260301	3/1/2027

Laboratory Technician Signature

Template 9903279.11

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Calibration Certificate Number:

A-XXXXXX-20261016

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Watt-hour 60 Hz Phase A

Date..... 16-Oct-26 Uncertainty at Unity..... 12

Serial Number..... XXXXXX Uncertainty at 60° Phase Angle.... 23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μWh/Wh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.2	-6.48	-7.27	-1.64	-6.01	2.61	1.85	-7.32	-7.05	3.40	4.03	2.13	1.90
0.25	4.42	20.74	-2.95	4.23	18.13	-12.14	2.91	16.79	-10.94	11.48	32.87	-0.11
0.5	-8.43	1.20	-3.81	-8.09	2.60	-14.07	-9.39	0.28	-6.81	-0.60	5.99	1.51
1	-4.67	-6.00	-1.10	-4.70	3.82	2.90	-6.45	-5.92	-0.28	1.12	1.29	-1.36
2.5	-2.85	-6.26	0.58	-2.51	-2.62	-3.50	-4.14	-6.62	-4.89	4.32	8.02	4.60
3	-0.42	7.91	11.42	0.56	7.74	-3.71	-1.48	7.32	4.21	7.84	14.50	14.85
5	-6.87	3.85	-15.19	-6.48	12.97	-11.64	-7.60	4.59	-12.20	-0.21	9.88	-11.24
10	-6.56	-7.99	-5.65	-4.95	-1.41	-8.07	-6.74	-7.96	-9.19	2.52	7.46	-2.12
15	-4.07	6.28	3.09	-2.04	5.25	-11.03	-3.90	5.31	-7.12	4.81	14.30	7.43
20	-8.21	-3.69	-6.85	-7.78	6.54	-7.10	-9.06	-1.19	-2.15	-0.27	3.48	-2.09
30	-3.77	0.13	-12.49	-1.68	8.66	-9.11	-4.49	1.12	-11.58	4.84	12.46	-6.65
40	-6.19	-0.49	-3.13	-4.97	0.79	-14.71	-6.44	2.07	-10.05	2.48	16.56	2.06
50	-8.29	-4.28	-3.83	-6.70	4.49	-7.59	-8.15	-2.08	-1.19	1.14	3.83	3.67
60	-5.79	-17.52	-1.59	-3.77	-7.78	3.29	-5.08	-14.39	5.33	4.86	-3.45	5.02
100	-4.24	-5.52	3.14	-2.96	-5.80	-7.75	-2.39	-1.27	0.69	9.35	14.51	12.54
120	-2.24	-6.76	5.57	-1.68	1.27	2.74	-0.65	-0.73	11.02	9.96	4.82	13.58
180	-17.93	-34.73	-18.63	-15.73	-23.88	-11.37	-14.00	-26.25	-7.15	-2.17	-13.68	-0.93
200	-11.02	-18.87	-5.40	-8.57	-15.04	-13.87	-6.76	-7.92	-3.46	4.79	7.33	8.51

Average	-5.76	-4.41	-3.25	-4.66	1.02	-6.94	-5.62	-2.44	-3.46	3.91	7.91	2.84
Minimum	-17.93	-34.73	-18.63	-15.73	-23.88	-14.71	-14.00	-26.25	-12.20	-2.17	-13.68	-11.24
Maximum	4.42	20.74	11.42	4.23	18.13	3.29	2.91	16.79	11.02	11.48	32.87	14.85

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	-3.03	0.52	-2.70
Minimum	-17.93	-34.73	-18.63
Maximum	11.48	32.87	14.85

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Watt-hour 60 Hz Phase B

Date..... 16-Oct-26 Uncertainty at Unity..... 12

Serial Number..... XXXXXX Uncertainty at 60° Phase Angle.... 23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μWh/Wh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.2	-3.29	15.06	-23.34	-0.90	24.43	-17.46	-0.76	10.25	-16.70	8.46	15.34	-18.07
0.25	-4.19	13.15	-20.38	2.13	14.60	-26.76	2.41	14.70	-21.58	9.65	26.50	-11.87
0.5	-8.99	15.98	-27.39	-2.06	21.65	-32.29	-2.05	20.49	-21.30	4.24	21.55	-19.87
1	-6.88	14.87	-42.15	-1.07	30.40	-30.68	-1.56	20.11	-32.23	5.36	23.59	-26.35
2.5	-10.93	-20.93	-10.95	-5.58	-13.08	-10.47	-4.43	-16.72	-7.23	2.73	-5.32	-0.75
3	-11.16	-5.22	-6.67	-4.29	-0.98	-16.46	-4.27	-0.87	-4.31	1.96	-0.03	7.20
5	-4.97	-14.68	-5.69	1.01	0.48	4.40	1.66	-8.97	8.37	7.21	-7.95	6.79
10	-7.00	8.28	-35.52	-2.14	16.00	-34.09	-2.26	12.12	-31.03	5.26	24.14	-22.65
15	-1.83	23.27	-16.86	4.08	23.67	-28.11	3.68	25.15	-20.01	10.13	30.57	-11.36
20	-8.39	-10.13	-10.50	-3.48	3.34	-4.52	-4.06	-6.22	2.20	3.13	-6.81	3.87
30	-2.10	-4.12	-10.37	3.08	4.67	-2.81	1.36	-3.44	-5.17	8.38	3.18	-3.17
40	1.58	28.14	-17.90	4.76	27.56	-30.04	4.35	27.89	-23.68	10.76	37.21	-8.98
50	1.33	25.28	-13.91	5.08	33.45	-16.97	4.76	24.40	-10.15	12.22	23.16	-7.16
60	5.70	11.04	-8.13	8.94	20.11	-3.11	8.33	8.70	-3.10	15.99	15.46	-5.33
100	2.48	21.78	-8.11	4.36	18.59	-23.91	5.22	20.68	-14.84	14.49	31.53	-3.49
120	6.11	22.84	-1.80	8.36	27.93	-8.11	8.35	20.54	0.13	15.70	20.18	-0.29
180	4.75	-2.40	5.56	6.04	-0.47	7.25	6.02	-8.26	5.77	14.88	-1.31	9.20
200	7.62	12.47	19.61	8.78	3.93	0.00	8.44	5.94	7.87	17.72	15.64	18.76
Average	-2.23	8.59	-13.03	2.06	14.24	-15.23	1.96	9.25	-10.39	9.35	14.81	-5.19
Minimum	-11.16	-20.93	-42.15	-5.58	-13.08	-34.09	-4.43	-16.72	-32.23	1.96	-7.95	-26.35
Maximum	7.62	28.14	19.61	8.94	33.45	7.25	8.44	27.89	8.37	17.72	37.21	18.76
<u>Overall</u>				Unity PF	0.5 Lag	0.5 Lead						
Average				2.78	11.72	-10.96						
Minimum				-11.16	-20.93	-42.15						
Maximum				17.72	37.21	19.61						

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Watt-hour 60 Hz Phase C

Date..... 16-Oct-26 Uncertainty at Unity..... 12

Serial Number..... XXXXXX Uncertainty at 60° Phase Angle.... 23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μWh/Wh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.2	-9.33	5.00	-37.94	-10.83	6.83	-22.09	-12.79	-13.13	-17.46	-4.61	-5.09	-17.09
0.25	-10.02	21.51	-22.62	-10.49	9.10	-37.73	-11.49	0.54	-19.45	-5.14	6.47	-4.18
0.5	-8.69	18.36	-27.66	-7.99	21.21	-24.71	-9.37	3.89	-5.88	-2.57	-2.76	-5.72
1	-9.86	6.34	-38.37	-10.48	7.74	-24.94	-12.01	-10.45	-23.72	-6.71	-3.20	-20.14
2.5	-5.65	7.10	-10.60	-6.44	-2.54	-22.42	-6.93	-8.89	-7.18	-1.14	-1.58	10.39
3	-5.83	15.07	-9.53	-6.28	13.50	-14.39	-7.76	-1.59	3.52	-1.55	-8.34	11.24
5	-5.77	11.37	-38.63	-7.27	16.40	-21.14	-7.62	-3.85	-17.38	-3.03	1.49	-17.82
10	-14.43	-4.64	-17.91	-14.26	-13.92	-27.69	-15.49	-21.52	-14.00	-9.61	-10.78	2.30
15	-7.38	7.04	-7.79	-7.59	1.84	-14.26	-8.01	-7.40	4.43	-3.04	-11.21	15.13
20	-13.09	-9.38	-30.67	-14.13	0.94	-12.30	-13.82	-21.62	-1.96	-8.30	-21.62	-6.26
30	-7.36	2.22	-26.28	-6.29	-2.95	-24.04	-7.69	-12.18	-16.37	-1.51	-1.83	-5.26
40	-6.01	12.88	-11.05	-5.63	7.93	-23.47	-5.65	0.30	-2.24	-0.23	1.49	12.02
50	-7.43	-2.91	-20.98	-6.28	7.86	-5.74	-5.77	-14.44	5.96	0.60	-16.09	3.10
60	-3.63	-11.93	-10.17	-2.04	-12.91	-2.07	-2.06	-24.27	7.41	5.38	-13.13	13.68
100	5.09	21.40	1.45	5.91	15.25	-10.19	7.68	13.29	15.50	15.85	17.10	27.33
120	2.93	5.26	-12.87	4.92	16.36	2.99	6.16	-0.87	20.12	14.11	-2.13	15.30
180	-10.59	-5.55	-38.43	-7.19	-5.17	-29.56	-4.26	-6.85	-14.64	4.89	3.72	-3.50
200	-14.28	5.81	-31.39	-10.96	3.82	-38.33	-7.34	6.08	-9.19	1.10	9.62	3.41

Average	-7.30	5.83	-21.75	-6.85	5.07	-19.56	-6.90	-6.83	-5.14	-0.30	-3.21	1.89
Minimum	-14.43	-11.93	-38.63	-14.26	-13.92	-38.33	-15.49	-24.27	-23.72	-9.61	-21.62	-20.14
Maximum	5.09	21.51	1.45	5.91	21.21	2.99	7.68	13.29	20.12	15.85	17.10	27.33

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	-5.34	0.21	-11.14
Minimum	-15.49	-24.27	-38.63
Maximum	15.85	21.51	27.33

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	Watt-hour	60 Hz	Total
Date.....	16-Oct-26	Uncertainty at Unity.....	20
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	38

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μWh/Wh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	-6.41	4.27	-20.97	-5.92	11.32	-12.57	-6.99	-3.31	-10.25	2.66	4.06	-11.05
0.25	-3.24	18.46	-15.29	-1.35	13.91	-25.55	-2.06	10.74	-17.32	5.29	22.00	-5.34
0.5	-8.67	11.90	-19.65	-6.08	15.12	-23.73	-6.93	8.17	-11.29	0.32	8.31	-8.03
1	-7.14	5.10	-27.24	-5.47	14.05	-17.64	-6.64	1.21	-18.68	-0.05	7.28	-15.92
2.5	-6.48	-6.75	-6.99	-4.87	-6.12	-12.11	-5.21	-10.69	-6.46	1.97	0.37	4.78
3	-5.81	5.91	-1.60	-3.34	6.71	-11.52	-4.50	1.62	1.11	2.72	2.01	11.07
5	-5.85	0.18	-19.86	-4.19	9.94	-9.44	-4.54	-2.77	-7.09	1.29	1.14	-7.42
10	-9.38	-1.40	-19.71	-7.14	0.21	-23.29	-8.19	-5.73	-18.09	-0.68	6.94	-7.49
15	-4.43	12.20	-7.22	-1.88	10.26	-17.84	-2.74	7.65	-7.53	3.94	11.20	3.71
20	-9.87	-7.78	-15.96	-8.45	3.63	-7.95	-8.98	-9.72	-0.63	-1.82	-8.24	-1.49
30	-4.40	-0.62	-16.38	-1.63	3.50	-11.99	-3.61	-4.83	-11.04	3.94	4.58	-5.06
40	-3.49	13.46	-10.71	-1.94	12.12	-22.72	-2.58	10.11	-12.02	4.38	18.38	1.71
50	-4.72	6.03	-12.95	-2.60	15.30	-10.14	-3.10	2.63	-1.79	4.65	3.64	-0.13
60	-1.21	-6.17	-6.63	1.08	-0.19	-0.59	0.36	-9.96	3.28	8.72	-0.35	4.41
100	1.11	12.56	-1.21	2.48	9.38	-13.95	3.50	10.94	0.45	13.17	21.05	12.16
120	2.27	7.11	-3.06	3.90	15.16	-0.76	4.62	6.31	10.42	13.23	7.65	9.56
180	-7.90	-14.23	-17.20	-5.64	-9.81	-11.22	-4.10	-13.74	-5.32	5.90	-3.76	1.60
200	-5.94	-0.20	-5.73	-3.58	-2.43	-17.36	-1.92	1.36	-1.56	7.87	10.86	10.23
Average	-5.09	3.34	-12.69	-3.15	6.78	-13.91	-3.53	0.00	-6.32	4.31	6.51	-0.15
Minimum	-9.87	-14.23	-27.24	-8.45	-9.81	-25.55	-8.98	-13.74	-18.68	-1.82	-8.24	-15.92
Maximum	2.27	18.46	-1.21	3.90	15.30	-0.59	4.62	10.94	10.42	13.23	22.00	12.16
<u>Overall</u>				Unity PF	0.5 Lag	0.5 Lead						
Average				-1.87	4.15	-8.27						
Minimum				-9.87	-14.23	-27.24						
Maximum				13.23	22.00	12.16						

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Watt-hour 60 Hz

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μWh/Wh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

Phase A:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	22.69	51.01	4.88	26.20	63.74	11.98	27.55	49.17	11.43	34.50	79.11	12.44
0.02	7.00	16.42	-3.06	12.23	39.53	0.23	9.71	29.87	-3.99	21.91	62.55	-4.51
0.05	9.77	25.21	17.44	16.40	34.02	3.31	12.38	36.11	8.16	24.25	57.04	17.89

Phase B:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	23.79	77.92	-19.19	19.96	82.63	17.98	13.41	38.95	-6.96	27.84	67.60	-10.96
0.02	3.23	32.60	-15.51	3.13	42.71	-25.54	-0.88	35.52	-29.17	15.60	57.00	-15.86
0.05	12.07	44.15	10.69	12.16	49.43	-11.26	8.32	46.84	-7.17	21.18	58.00	9.79

Phase C:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	29.48	28.53	45.46	23.75	49.87	41.35	29.12	37.81	41.36	35.47	34.27	39.55
0.02	-0.12	8.28	17.13	6.65	11.07	6.48	5.21	13.29	12.82	15.26	20.63	15.49
0.05	15.16	25.43	30.90	19.73	35.05	26.67	17.30	21.63	35.27	26.47	24.52	40.75

Total:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	25.36	52.47	10.36	23.31	65.37	23.82	23.31	42.00	15.25	32.61	60.32	13.64
0.02	3.39	19.13	-0.53	7.36	31.15	-6.25	4.66	26.20	-6.76	17.62	46.72	-1.63
0.05	12.37	31.63	19.71	16.06	39.50	6.24	12.67	34.79	12.05	23.94	46.52	22.77

Average	13.68	34.40	9.86	15.58	45.34	7.92	13.56	34.35	6.86	24.72	51.19	11.61
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Minimum	-0.12	8.28	-19.19	3.13	11.07	-25.54	-0.88	13.29	-29.17	15.26	20.63	-15.86
Maximum	29.48	77.92	45.46	26.20	82.63	41.35	29.12	49.17	41.36	35.47	79.11	40.75

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	16.89	41.32	9.06
Minimum	-0.88	8.28	-29.17
Maximum	35.47	82.63	45.46

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	Watts	60 Hz	Phase A
Date.....	16-Oct-26	Uncertainty at Unity.....	12
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as $\mu\text{W/W}$. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	-6.57	-7.40	-1.85	-6.04	2.66	1.72	-7.44	-7.18	3.44	3.91	1.97	1.81
0.25	4.36	19.97	-3.54	4.30	17.75	-12.09	3.01	16.07	-11.40	11.36	32.23	-0.42
0.5	-8.80	1.06	-4.24	-8.44	1.68	-15.60	-9.63	0.10	-7.91	-1.08	6.27	1.92
1	-4.53	-5.48	-0.64	-4.59	4.14	3.13	-6.35	-5.52	0.02	1.26	1.49	-1.54
2.5	-3.04	-6.42	0.34	-2.62	-2.90	-3.77	-4.37	-6.75	-5.17	4.22	7.79	4.67
3	-0.43	8.01	11.43	0.59	7.43	-3.75	-1.54	7.35	3.84	7.81	14.52	14.67
5	-7.01	3.80	-15.31	-6.60	12.97	-12.11	-7.66	4.67	-11.79	-0.22	10.08	-10.74
10	-6.66	-8.04	-5.66	-4.92	-1.11	-7.57	-6.78	-7.90	-8.82	2.45	6.80	-2.44
15	-4.27	5.59	2.57	-2.30	4.81	-11.57	-4.10	4.56	-8.12	4.59	14.29	7.14
20	-8.39	-3.24	-6.31	-7.85	6.51	-7.48	-9.11	-0.90	-2.11	-0.31	3.82	-2.00
30	-3.75	-0.13	-12.69	-1.75	8.60	-9.30	-4.54	1.06	-11.76	4.77	12.38	-6.77
40	-6.26	-0.65	-3.02	-5.06	0.64	-14.76	-6.53	2.08	-10.10	2.48	16.50	1.90
50	-8.21	-4.35	-3.88	-6.60	4.29	-7.96	-8.15	-1.91	-1.46	1.10	3.71	3.66
60	-5.94	-17.56	-1.65	-3.83	-7.59	3.60	-5.07	-14.30	6.08	4.83	-3.51	5.22
100	-4.12	-5.49	3.16	-2.88	-5.79	-7.52	-2.39	-1.30	0.60	9.33	14.25	12.72
120	-2.39	-6.62	5.96	-1.81	1.10	3.11	-0.69	-0.74	10.80	9.86	4.74	13.01
180	-18.65	-35.20	-19.95	-16.24	-23.72	-12.83	-14.79	-26.51	-7.45	-2.85	-14.08	-1.53
200	-11.13	-19.12	-5.43	-8.76	-15.21	-13.89	-7.06	-7.92	-3.90	4.66	7.18	8.17
Average	-5.88	-4.52	-3.37	-4.74	0.90	-7.15	-5.73	-2.50	-3.62	3.79	7.80	2.75
Minimum	-18.65	-35.20	-19.95	-16.24	-23.72	-15.60	-14.79	-26.51	-11.79	-2.85	-14.08	-10.74
Maximum	4.36	19.97	11.43	4.30	17.75	3.60	3.01	16.07	10.80	11.36	32.23	14.67
				Overall	Unity PF	0.5 Lag	0.5 Lead					
				Average	-3.14	0.42	-2.85					
				Minimum	-18.65	-35.20	-19.95					
				Maximum	11.36	32.23	14.67					

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Watts 60 Hz Phase B

Date..... 16-Oct-26 Uncertainty at Unity..... 12

Serial Number..... XXXXXX Uncertainty at 60° Phase Angle.... 23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μW/W. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.2	-3.29	15.06	-23.34	-0.90	24.43	-17.46	-0.76	10.25	-16.70	8.46	15.34	-18.07
0.25	-4.19	13.15	-20.38	2.13	14.60	-26.76	2.41	14.70	-21.58	9.65	26.50	-11.87
0.5	-8.99	15.98	-27.39	-2.06	21.65	-32.29	-2.05	20.49	-21.30	4.24	21.55	-19.87
1	-6.88	14.87	-42.15	-1.07	30.40	-30.68	-1.56	20.11	-32.23	5.36	23.59	-26.35
2.5	-10.93	-20.93	-10.95	-5.58	-13.08	-10.47	-4.43	-16.72	-7.23	2.73	-5.32	-0.75
3	-11.16	-5.22	-6.67	-4.29	-0.98	-16.46	-4.27	-0.87	-4.31	1.96	-0.03	7.20
5	-4.97	-14.68	-5.69	1.01	0.48	4.40	1.66	-8.97	8.37	7.21	-7.95	6.79
10	-7.00	8.28	-35.52	-2.14	16.00	-34.09	-2.26	12.12	-31.03	5.26	24.14	-22.65
15	-1.83	23.27	-16.86	4.08	23.67	-28.11	3.68	25.15	-20.01	10.13	30.57	-11.36
20	-8.39	-10.13	-10.50	-3.48	3.34	-4.52	-4.06	-6.22	2.20	3.13	-6.81	3.87
30	-2.10	-4.12	-10.37	3.08	4.67	-2.81	1.36	-3.44	-5.17	8.38	3.18	-3.17
40	1.58	28.14	-17.90	4.76	27.56	-30.04	4.35	27.89	-23.68	10.76	37.21	-8.98
50	1.33	25.28	-13.91	5.08	33.45	-16.97	4.76	24.40	-10.15	12.22	23.16	-7.16
60	5.70	11.04	-8.13	8.94	20.11	-3.11	8.33	8.70	-3.10	15.99	15.46	-5.33
100	2.48	21.78	-8.11	4.36	18.59	-23.91	5.22	20.68	-14.84	14.49	31.53	-3.49
120	6.11	22.84	-1.80	8.36	27.93	-8.11	8.35	20.54	0.13	15.70	20.18	-0.29
180	4.75	-2.40	5.56	6.04	-0.47	7.25	6.02	-8.26	5.77	14.88	-1.31	9.20
200	7.62	12.47	19.61	8.78	3.93	0.00	8.44	5.94	7.87	17.72	15.64	18.76
Average	-2.23	8.59	-13.03	2.06	14.24	-15.23	1.96	9.25	-10.39	9.35	14.81	-5.19
Minimum	-11.16	-20.93	-42.15	-5.58	-13.08	-34.09	-4.43	-16.72	-32.23	1.96	-7.95	-26.35
Maximum	7.62	28.14	19.61	8.94	33.45	7.25	8.44	27.89	8.37	17.72	37.21	18.76
<u>Overall</u>				Unity PF	0.5 Lag	0.5 Lead						
Average				2.78	11.72	-10.96						
Minimum				-11.16	-20.93	-42.15						
Maximum				17.72	37.21	19.61						

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Watts 60 Hz Phase C

Date..... 16-Oct-26 Uncertainty at Unity..... 12

Serial Number..... XXXXXX Uncertainty at 60° Phase Angle.... 23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μW/W. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.2	-9.43	4.77	-38.04	-10.89	6.76	-22.16	-12.95	-13.21	-17.57	-4.72	-5.23	-17.22
0.25	-10.04	20.65	-23.00	-10.70	8.04	-38.25	-11.67	0.13	-20.39	-5.28	6.48	-4.90
0.5	-8.75	18.95	-27.13	-7.87	21.32	-25.35	-9.38	4.39	-5.69	-2.66	-2.03	-4.86
1	-9.96	6.06	-38.66	-10.61	7.69	-25.02	-12.08	-10.54	-23.75	-6.72	-3.97	-20.19
2.5	-5.79	7.05	-10.66	-6.44	-2.54	-22.46	-6.97	-8.95	-7.24	-1.13	-1.57	10.42
3	-5.83	14.99	-9.61	-6.35	12.97	-14.42	-7.78	-1.59	3.47	-1.60	-8.43	11.17
5	-5.84	11.25	-38.61	-7.35	17.20	-21.13	-7.70	-3.50	-16.97	-2.99	1.44	-17.41
10	-14.45	-4.72	-17.86	-14.22	-14.23	-27.39	-15.53	-22.15	-14.17	-9.74	-10.95	1.58
15	-7.35	7.26	-7.71	-7.69	1.31	-14.85	-8.01	-7.22	3.62	-3.10	-10.63	15.28
20	-13.11	-9.03	-30.40	-14.17	0.83	-12.16	-13.85	-21.30	-2.01	-8.29	-22.01	-5.89
30	-7.40	1.45	-26.87	-6.32	-3.03	-24.04	-7.71	-12.23	-16.42	-1.57	-1.83	-5.26
40	-5.97	12.79	-11.17	-5.76	7.80	-23.52	-5.75	0.16	-2.31	-0.23	1.41	12.03
50	-7.40	-3.05	-21.10	-6.28	7.95	-5.79	-5.84	-13.73	6.02	0.62	-16.12	3.09
60	-3.67	-12.02	-10.34	-2.06	-12.51	-1.76	-2.11	-24.56	7.79	5.29	-13.33	13.55
100	5.03	21.35	1.43	5.87	15.21	-10.31	7.62	13.29	15.47	15.70	17.03	27.33
120	2.87	5.23	-13.07	5.00	16.41	2.82	6.11	-0.81	20.09	14.15	-2.16	15.34
180	-10.78	-5.61	-38.57	-7.37	-5.06	-29.72	-4.35	-7.01	-14.63	4.84	3.60	-3.57
200	-14.19	5.75	-31.55	-11.05	3.78	-38.28	-7.37	6.03	-9.27	1.10	9.61	3.20

Average	-7.34	5.73	-21.83	-6.90	4.99	-19.66	-6.96	-6.82	-5.22	-0.35	-3.26	1.87
Minimum	-14.45	-12.02	-38.66	-14.22	-14.23	-38.28	-15.53	-24.56	-23.75	-9.74	-22.01	-20.19
Maximum	5.03	21.35	1.43	5.87	21.32	2.82	7.62	13.29	20.09	15.70	17.03	27.33

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	-5.39	0.16	-11.21
Minimum	-15.53	-24.56	-38.66
Maximum	15.70	21.35	27.33

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	Watts	60 Hz	Total
Date.....	16-Oct-26	Uncertainty at Unity.....	20
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	38

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μW/W. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	-6.42	4.16	-21.01	-5.97	11.34	-12.65	-7.07	-3.34	-10.36	2.54	3.96	-11.14
0.25	-3.30	17.94	-16.11	-1.55	13.32	-25.79	-2.12	10.03	-17.77	5.23	21.66	-5.74
0.5	-8.85	12.20	-19.10	-6.15	14.95	-24.31	-7.03	8.44	-11.59	0.24	8.61	-7.73
1	-7.15	5.12	-27.21	-5.50	13.95	-17.57	-6.69	1.28	-18.72	-0.10	7.16	-15.95
2.5	-6.51	-6.78	-7.05	-4.90	-6.12	-12.21	-5.21	-10.80	-6.48	1.96	0.29	4.66
3	-5.87	5.90	-1.64	-3.39	6.26	-11.65	-4.55	1.54	0.63	2.74	2.01	11.09
5	-5.95	0.11	-19.91	-4.34	10.19	-9.75	-4.61	-2.28	-6.54	1.39	1.17	-6.97
10	-9.37	-1.46	-19.70	-7.12	0.23	-22.73	-8.24	-5.95	-18.08	-0.70	6.32	-7.91
15	-4.55	11.93	-7.51	-1.95	9.53	-18.22	-2.83	7.36	-8.02	3.77	11.53	3.63
20	-9.98	-7.49	-15.45	-8.57	3.59	-8.13	-9.04	-9.42	-0.66	-1.79	-8.31	-1.12
30	-4.49	-0.82	-16.79	-1.68	3.38	-12.07	-3.69	-4.90	-11.12	3.83	4.51	-5.14
40	-3.59	13.41	-10.73	-2.08	11.95	-22.83	-2.67	10.02	-12.13	4.35	18.34	1.59
50	-4.80	5.89	-13.01	-2.58	15.10	-10.48	-3.15	2.95	-2.09	4.61	3.59	-0.14
60	-1.30	-6.18	-6.77	0.97	0.00	-0.17	0.38	-10.05	3.64	8.63	-0.71	4.49
100	1.09	12.59	-1.22	2.42	9.24	-14.02	3.45	10.90	0.15	13.13	21.02	12.14
120	2.21	7.12	-3.00	3.86	15.13	-0.75	4.58	6.28	10.32	13.23	7.67	9.30
180	-8.26	-14.37	-17.74	-5.94	-9.46	-11.85	-4.40	-13.86	-5.27	5.52	-3.99	1.16
200	-5.98	-0.34	-5.78	-3.72	-2.76	-17.43	-2.04	1.26	-2.17	7.75	10.72	9.96
Average	-5.17	3.27	-12.76	-3.23	6.66	-14.03	-3.61	-0.03	-6.46	4.24	6.42	-0.21
Minimum	-9.98	-14.37	-27.21	-8.57	-9.46	-25.79	-9.04	-13.86	-18.72	-1.79	-8.31	-15.95
Maximum	2.21	17.94	-1.22	3.86	15.13	-0.17	4.58	10.90	10.32	13.23	21.66	12.14
<u>Overall</u>				Unity PF	0.5 Lag	0.5 Lead						
Average				-1.94	4.08	-8.37						
Minimum				-9.98	-14.37	-27.21						
Maximum				13.23	21.66	12.14						

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Watts 60 Hz

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as $\mu\text{W/W}$. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

Phase A:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	23.24	50.03	5.56	25.48	64.98	11.73	28.07	49.70	12.06	33.97	79.20	10.92
0.02	7.04	16.45	-3.12	12.35	39.79	0.27	9.40	29.87	-3.83	21.72	61.80	-4.91
0.05	9.57	24.86	17.27	16.25	33.16	3.12	12.22	35.88	7.58	24.04	57.12	17.88

Phase B:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	23.51	78.98	-18.88	19.88	83.01	18.11	12.53	40.72	-6.88	27.46	70.39	-9.81
0.02	3.23	32.60	-15.51	3.13	42.71	-25.54	-0.88	35.52	-29.17	15.60	57.00	-15.86
0.05	12.07	44.15	10.69	12.16	49.43	-11.26	8.32	46.84	-7.17	21.18	58.00	9.79

Phase C:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	28.64	28.24	46.29	23.29	50.83	39.22	28.42	39.00	44.22	36.20	34.69	38.42
0.02	-0.12	7.68	16.63	6.57	10.95	7.25	5.18	12.95	12.16	14.97	20.17	14.91
0.05	15.17	25.33	30.70	19.51	34.72	26.27	17.25	21.40	34.92	26.53	24.43	40.70

Total:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	24.94	52.71	10.68	23.09	66.31	22.75	22.81	41.86	16.19	32.47	61.20	13.33
0.02	3.23	18.44	-0.90	7.26	31.30	-5.73	4.57	25.81	-6.94	17.42	46.25	-1.93
0.05	12.32	31.46	19.52	15.92	38.80	6.07	12.56	34.66	11.57	23.90	46.47	22.75

Average	13.57	34.24	9.91	15.41	45.50	7.69	13.37	34.52	7.06	24.62	51.39	11.35
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Minimum	-0.12	7.68	-18.88	3.13	10.95	-25.54	-0.88	12.95	-29.17	14.97	20.17	-15.86
Maximum	28.64	78.98	46.29	25.48	83.01	39.22	28.42	49.70	44.22	36.20	79.20	40.70

<i>Overall</i>	Unity PF	0.5 Lag	0.5 Lead
Average	16.74	41.41	9.00
Minimum	-0.88	7.68	-29.17
Maximum	36.20	83.01	46.29

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR-hour 60 Hz Phase A

Date..... 16-Oct-26 Uncertainty 23

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VARh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VARh/VARh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.2	3.61	-2.95	-0.90	-17.07	-4.48	-6.61	8.61	-4.07
0.25	15.55	-9.97	9.79	-7.69	4.16	-13.96	18.61	-1.26
0.5	4.88	-9.58	-2.32	-16.54	-7.22	-17.44	7.40	-2.23
1	1.77	1.15	-3.84	-15.80	-6.38	-5.63	6.61	-7.06
2.5	2.41	-7.08	-3.07	-8.46	-6.72	-9.50	6.02	1.12
3	11.07	-1.85	5.82	-2.01	1.78	-8.34	12.72	9.63
5	4.67	-10.70	-0.97	-26.68	-4.62	-18.36	7.78	-13.08
10	3.65	-7.16	-1.33	-10.76	-4.13	-7.39	7.14	-2.50
15	7.32	-8.44	3.10	-7.42	-0.71	-14.05	11.99	5.94
20	0.61	-8.35	-3.96	-23.20	-7.24	-13.25	4.92	-6.84
30	8.80	-5.06	5.56	-15.21	1.78	-7.33	14.67	-5.36
40	5.29	-14.46	2.81	-10.23	-1.87	-13.60	11.31	3.57
50	4.39	-6.27	1.02	-16.01	-2.09	-12.15	8.43	-0.11
60	-4.77	-5.39	-8.41	-18.20	-11.06	-3.20	3.56	-3.65
100	-2.81	-18.16	-6.65	-15.34	-8.37	-14.39	5.67	4.21
120	-4.35	-9.20	-8.74	-23.47	-8.47	-11.35	5.65	-0.63
180	-19.62	-23.41	-21.78	-36.43	-20.93	-12.67	-5.77	-9.67
200	-11.52	-28.19	-12.87	-22.09	-11.29	-15.37	2.64	4.95
Average	1.72	-9.72	-2.60	-16.26	-5.44	-11.37	7.67	-1.50
Minimum	-19.62	-28.19	-21.78	-36.43	-20.93	-18.36	-5.77	-13.08
Maximum	15.55	1.15	9.79	-2.01	4.16	-3.20	18.61	9.63

<u>Overall</u>	90°Lag	30°Lag
Average	0.34	-9.71
Minimum	-21.78	-36.43
Maximum	18.61	9.63

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR-hour 60 Hz Phase B

Date..... 16-Oct-26 Uncertainty 23

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VARh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VARh/VARh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.2	13.98	-9.85	8.66	-22.30	8.57	-9.66	11.23	-20.24
0.25	21.57	-7.10	10.79	-2.59	11.14	-9.79	19.87	2.56
0.5	17.82	-9.27	12.66	-17.03	7.50	-16.36	20.04	-2.12
1	14.05	-16.34	8.89	-32.40	6.79	-21.02	17.63	-25.40
2.5	9.57	4.51	4.63	4.08	1.75	3.38	11.09	12.97
3	14.41	2.68	10.10	1.85	5.98	-3.78	14.81	13.32
5	20.00	24.19	15.17	4.97	12.12	17.13	22.37	19.17
10	15.10	-15.29	11.09	-17.93	7.59	-14.14	17.57	-9.85
15	21.01	-8.46	17.86	-6.51	14.48	-12.34	25.16	7.45
20	12.53	8.37	8.65	-5.82	6.29	6.76	15.71	9.65
30	20.39	14.35	16.95	6.33	14.92	14.25	25.72	14.89
40	20.62	-18.96	18.87	-11.95	16.13	-14.85	26.28	4.94
50	21.08	-4.87	19.80	-14.52	16.74	-8.84	24.56	3.39
60	13.29	-1.67	10.25	-14.22	8.31	4.06	20.30	0.88
100	9.66	-20.67	6.25	-16.94	5.34	-16.32	17.69	2.63
120	8.80	-8.17	5.38	-24.47	6.05	-10.75	18.82	-3.02
180	6.23	5.99	3.67	-9.18	5.06	14.42	16.78	12.99
200	8.39	-6.47	6.38	-0.20	7.59	2.99	19.65	24.36
Average	14.92	-3.72	10.89	-9.93	9.02	-4.16	19.18	3.81
Minimum	6.23	-20.67	3.67	-32.40	1.75	-21.02	11.09	-25.40
Maximum	21.57	24.19	19.80	6.33	16.74	17.13	26.28	24.36

<u>Overall</u>	90°Lag	30°Lag
Average	13.50	-3.50
Minimum	1.75	-32.40
Maximum	26.28	24.36

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR-hour 60 Hz Phase C

Date..... 16-Oct-26 Uncertainty 23

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VARh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VARh/VARh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.2	10.90	-8.32	0.61	-23.75	-3.59	29.48	12.82	-12.98
0.25	10.39	-21.76	1.40	-13.91	-4.71	12.77	13.54	1.35
0.5	10.34	-13.15	0.42	-29.96	-4.36	23.64	15.69	-11.40
1	4.60	-15.78	-4.45	-25.88	-7.13	18.93	12.10	-16.66
2.5	6.18	-16.67	-1.12	-5.87	-5.85	14.05	14.54	11.62
3	12.72	-2.35	4.48	-13.16	-0.86	15.82	21.09	5.14
5	12.89	-10.83	2.62	-28.16	-0.29	11.69	21.30	-13.89
10	4.16	-14.81	-5.42	-6.13	-9.09	3.60	17.72	6.49
15	10.48	-1.88	2.82	-9.51	-1.99	-3.73	8.28	15.42
20	5.62	-1.12	-3.46	-21.86	-7.55	2.41	0.65	-7.67
30	16.05	-4.50	7.00	-4.02	2.93	-0.13	11.33	8.98
40	16.80	-4.44	8.15	-5.60	2.94	-5.28	12.05	15.18
50	17.75	15.01	8.25	-11.60	4.16	9.36	11.26	7.93
60	11.78	12.75	0.75	3.00	-3.35	18.75	6.53	15.49
100	18.52	-5.64	8.79	-6.24	4.63	-4.40	16.32	18.39
120	15.85	9.82	3.81	-20.01	1.21	6.08	13.64	3.89
180	10.21	-9.07	-2.95	-23.93	-5.99	-5.29	4.34	-1.28
200	7.81	-14.57	-4.44	-24.04	-7.76	-24.38	2.85	2.33
Average	11.28	-5.96	1.51	-15.03	-2.59	6.85	12.00	2.68
Minimum	4.16	-21.76	-5.42	-29.96	-9.09	-24.38	0.65	-16.66
Maximum	18.52	15.01	8.79	3.00	4.63	29.48	21.30	18.39
Overall								
Average				90°Lag	30°Lag			
Minimum				5.55	-2.86			
Maximum				-9.09	-29.96			
				21.30	29.48			

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR-hour 60 Hz Total
 Date..... 16-Oct-26 Uncertainty 40
 Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VARh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VARh/VARh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.2	9.50	-7.04	2.79	-21.00	0.20	4.44	13.30	-9.33
0.25	15.89	-12.97	7.35	-8.12	3.52	-3.72	17.32	0.93
0.5	11.05	-10.63	3.56	-21.20	-1.39	-3.39	14.40	-5.28
1	6.78	-10.32	0.17	-24.72	-2.17	-2.57	12.09	-16.35
2.5	6.05	-6.42	0.12	-3.47	-3.61	2.59	10.59	8.57
3	12.70	-0.59	6.75	-4.44	2.34	1.18	16.21	9.40
5	12.56	0.84	5.63	-16.60	2.38	3.47	17.12	-2.60
10	7.68	-12.44	1.47	-11.61	-1.90	-5.93	14.14	-1.95
15	12.90	-6.29	7.90	-7.81	3.97	-10.04	15.17	9.55
20	6.25	-0.39	0.42	-16.99	-2.88	-1.33	7.09	-1.62
30	15.11	1.59	9.81	-4.29	6.54	2.26	17.22	6.22
40	14.28	-12.57	9.98	-9.26	5.75	-11.22	16.51	7.90
50	14.41	1.29	9.69	-14.01	6.28	-3.87	14.77	3.74
60	6.73	1.87	0.89	-9.80	-2.00	6.59	10.10	4.19
100	8.42	-14.90	2.76	-12.80	0.54	-11.71	13.22	8.41
120	6.76	-2.51	0.12	-22.68	-0.44	-5.34	12.70	0.05
180	-1.02	-8.82	-7.05	-23.16	-7.26	-1.23	5.12	0.69
200	1.56	-16.37	-3.65	-15.45	-3.82	-12.25	8.35	10.52
Average	9.31	-6.48	3.26	-13.75	0.34	-2.89	13.08	1.84
Minimum	-1.02	-16.37	-7.05	-24.72	-7.26	-12.25	5.12	-16.35
Maximum	15.89	1.87	9.98	-3.47	6.54	6.59	17.32	10.52

<u>Overall</u>	90°Lag	30°Lag
Average	6.50	-5.32
Minimum	-7.26	-24.72
Maximum	17.32	10.52

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR-hour 60 Hz

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VARh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVARh/VARh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle								
Phase A:		120	120	240	240	480	480	600
		90°Lag	30°Lag	90°Lag	30°Lag	90°Lag	30°Lag	90°Lag
	Amps							
	0.005	-2.91	-50.76	1.04	-32.06	-7.74	-43.52	3.17
	0.02	-7.08	-28.80	-4.30	-23.92	-4.16	-22.94	5.17
	0.05	-4.78	-16.57	1.33	-7.70	0.71	-12.35	13.63
Phase B:		120	120	240	240	480	480	600
		90°Lag	30°Lag	90°Lag	30°Lag	90°Lag	30°Lag	90°Lag
	Amps							
	0.005	11.55	-30.49	-5.46	-57.82	-19.61	-79.21	-10.85
	0.02	-11.10	-35.99	-11.78	-41.66	-19.53	-53.38	7.68
	0.05	0.31	-16.89	-0.10	-20.66	-5.83	-33.66	3.16
Phase C:		120	120	240	240	480	480	600
		90°Lag	30°Lag	90°Lag	30°Lag	90°Lag	30°Lag	90°Lag
	Amps							
	0.005	23.14	11.20	2.65	5.77	-4.75	-5.18	4.33
	0.02	-6.71	-15.82	-4.53	3.82	-8.16	-12.53	10.63
	0.05	6.35	9.62	7.43	6.12	7.00	10.65	6.01
Total:		120	120	240	240	480	480	600
		90°Lag	30°Lag	90°Lag	30°Lag	90°Lag	30°Lag	90°Lag
	Amps							
	0.005	10.62	-23.30	-0.54	-28.07	-10.67	-42.62	-1.15
	0.02	-8.29	-26.92	-6.90	-20.56	-10.64	-29.57	7.70
	0.05	0.62	-7.91	2.85	-7.38	0.66	-11.79	6.90
Average		0.98	-19.39	-1.53	-18.68	-6.89	-28.01	4.70
Minimum		-11.10	-50.76	-11.78	-57.82	-19.61	-79.21	-10.85
Maximum		23.14	11.20	7.43	6.12	7.00	10.65	13.63
		Overall	90°Lag	30°Lag				
		Average	-0.69	-24.62				
		Minimum	-19.61	-79.21				
		Maximum	23.14	11.20				

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR 60 Hz Phase A

Date..... 16-Oct-26 Uncertainty 23

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAR calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VAR/VAR. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.2	3.58	-3.07	-1.01	-17.36	-4.50	-6.95	8.50	-3.85
0.25	15.49	-9.82	9.68	-7.80	4.13	-14.06	18.61	-1.23
0.5	4.90	-10.42	-2.43	-16.53	-7.29	-17.47	7.29	-2.22
1	1.72	1.06	-3.83	-15.93	-6.36	-5.94	6.46	-7.09
2.5	2.41	-7.12	-3.08	-8.72	-6.78	-9.06	5.98	0.77
3	10.98	-1.83	5.78	-1.75	1.82	-8.52	12.64	9.87
5	4.59	-11.10	-1.11	-26.70	-4.62	-18.35	7.65	-12.72
10	3.61	-6.85	-1.32	-10.84	-4.12	-7.49	7.09	-2.98
15	7.28	-8.68	3.04	-7.50	-0.83	-14.18	11.92	5.88
20	0.46	-8.68	-3.98	-23.20	-7.34	-13.64	4.83	-6.90
30	8.74	-5.07	5.50	-15.63	1.74	-7.19	14.70	-5.46
40	5.26	-14.54	2.68	-10.07	-1.95	-13.29	11.17	3.14
50	4.32	-6.45	1.04	-16.06	-2.18	-12.24	8.41	0.49
60	-4.86	-5.30	-8.42	-18.25	-11.20	-3.13	3.52	-3.86
100	-2.89	-18.24	-6.79	-15.19	-8.46	-13.91	5.64	3.93
120	-4.37	-9.29	-8.78	-23.12	-8.52	-11.90	5.70	-0.10
180	-20.29	-24.59	-22.26	-37.38	-21.56	-13.49	-6.29	-10.90
200	-11.72	-28.30	-13.00	-21.89	-11.39	-15.31	2.36	4.54
Average	1.62	-9.90	-2.68	-16.33	-5.52	-11.45	7.57	-1.59
Minimum	-20.29	-28.30	-22.26	-37.38	-21.56	-18.35	-6.29	-12.72
Maximum	15.49	1.06	9.68	-1.75	4.13	-3.13	18.61	9.87

<u>Overall</u>	90°Lag	30°Lag
Average	0.25	-9.82
Minimum	-22.26	-37.38
Maximum	18.61	9.87

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR 60 Hz Phase B

Date..... 16-Oct-26 Uncertainty 23

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAR calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VAR/VAR. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.2	13.90	-9.85	8.65	-22.45	8.50	-10.08	18.53	-10.52
0.25	21.67	-6.95	10.19	-2.82	11.18	-10.35	19.13	1.94
0.5	17.92	-8.81	12.70	-16.64	7.75	-16.24	20.16	-1.76
1	13.77	-16.67	8.59	-33.17	6.57	-21.58	17.48	-25.69
2.5	9.66	4.70	4.64	3.99	1.75	4.02	11.04	12.66
3	14.30	2.50	10.03	2.02	5.92	-4.11	14.70	13.48
5	19.96	23.85	15.08	4.85	12.02	17.15	22.30	19.54
10	15.00	-14.98	11.00	-18.01	7.46	-14.21	17.45	-10.61
15	20.95	-8.71	17.86	-6.59	14.44	-12.35	25.13	7.59
20	12.41	8.02	8.59	-5.84	6.24	6.45	15.60	9.52
30	20.41	14.39	16.90	5.87	14.90	14.47	25.58	14.88
40	20.54	-19.14	18.89	-11.75	16.02	-14.75	26.25	4.45
50	21.01	-4.93	19.69	-14.54	16.64	-9.10	24.52	3.91
60	13.06	-1.50	10.19	-14.46	8.23	4.02	20.15	0.38
100	9.46	-21.21	6.02	-16.75	5.16	-16.14	17.66	2.06
120	8.75	-8.20	5.31	-24.48	5.95	-11.22	18.89	-2.60
180	6.19	5.94	3.64	-9.33	5.04	14.68	16.53	12.12
200	8.44	-6.59	6.39	0.25	7.40	3.02	19.59	24.17
Average	14.85	-3.78	10.80	-9.99	8.95	-4.24	19.48	4.20
Minimum	6.19	-21.21	3.64	-33.17	1.75	-21.58	11.04	-25.69
Maximum	21.67	23.85	19.69	5.87	16.64	17.15	26.25	24.17
Overall								
Average	90°Lag		30°Lag					
	13.52		-3.46					
Minimum	1.75		-33.17					
Maximum	26.25		24.17					

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR 60 Hz Phase C

Date..... 16-Oct-26 Uncertainty 23

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAR calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VAR/VAR. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.2	10.83	-8.42	0.47	-24.38	-3.55	29.65	12.79	-13.15
0.25	10.44	-22.03	1.40	-13.87	-4.67	12.96	13.45	1.57
0.5	10.31	-13.42	0.36	-30.02	-4.32	23.51	15.59	-11.65
1	4.60	-15.76	-4.46	-26.50	-7.11	19.03	12.10	-16.77
2.5	6.18	-16.66	-1.15	-5.82	-5.91	14.32	14.50	11.63
3	12.65	-2.43	4.37	-12.96	-0.92	15.30	21.00	5.78
5	12.87	-10.74	2.57	-28.19	-0.40	11.62	21.28	-14.30
10	4.19	-14.27	-5.39	-6.15	-9.06	3.50	17.73	5.99
15	10.47	-2.61	2.76	-9.57	-2.03	-3.77	8.40	15.50
20	5.55	-1.03	-3.49	-22.01	-7.59	1.95	0.72	-7.67
30	16.02	-4.48	6.99	-4.48	2.89	0.54	11.32	9.01
40	16.73	-4.48	8.03	-5.22	2.88	-5.49	11.87	15.26
50	17.78	14.82	8.33	-11.63	4.11	9.31	11.28	8.70
60	11.71	13.47	0.67	2.99	-3.40	18.74	6.58	14.59
100	18.43	-5.66	8.79	-5.43	4.52	-4.56	16.26	18.39
120	15.88	9.75	3.76	-20.12	1.21	5.53	13.71	3.97
180	10.13	-9.18	-3.13	-24.40	-6.15	-5.05	4.20	-1.93
200	7.79	-14.67	-4.49	-23.64	-7.70	-24.81	2.90	2.31

Average	11.25	-5.99	1.47	-15.08	-2.62	6.79	11.98	2.62
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Minimum	4.19	-22.03	-5.39	-30.02	-9.06	-24.81	0.72	-16.77
Maximum	18.43	14.82	8.79	2.99	4.52	29.65	21.28	18.39

<u>Overall</u>	90°Lag	30°Lag
Average	5.52	-2.91
Minimum	-9.06	-30.02
Maximum	21.28	29.65

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR 60 Hz Total

Date..... 16-Oct-26 Uncertainty 40

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAR calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VAR/VAR. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.2	9.45	-7.07	2.74	-21.17	0.14	4.35	13.30	-9.23
0.25	15.80	-12.79	7.06	-8.08	3.54	-3.67	17.14	0.76
0.5	10.97	-10.97	3.58	-21.14	-1.30	-3.37	14.43	-5.16
1	6.72	-10.52	0.13	-25.05	-2.29	-2.81	12.04	-16.54
2.5	6.08	-6.38	0.09	-3.43	-3.66	3.14	10.52	8.25
3	12.63	-0.64	6.73	-4.14	2.26	0.87	16.12	9.65
5	12.48	0.71	5.54	-16.67	2.39	3.47	17.10	-2.57
10	7.60	-12.11	1.40	-11.67	-1.88	-6.03	14.06	-2.30
15	12.86	-6.62	7.87	-7.85	3.89	-10.09	15.11	9.55
20	6.16	-0.72	0.35	-16.95	-2.92	-1.75	7.04	-1.70
30	15.06	1.56	9.78	-4.76	6.50	2.64	17.18	6.12
40	14.14	-12.73	9.88	-8.96	5.64	-11.19	16.42	7.73
50	14.39	1.15	9.74	-14.09	6.22	-4.03	14.75	4.12
60	6.63	2.16	0.79	-9.89	-2.12	6.52	10.07	3.94
100	8.32	-15.14	2.62	-12.78	0.40	-11.76	13.19	8.22
120	6.78	-2.59	0.12	-22.69	-0.50	-5.93	12.80	0.71
180	-1.27	-9.25	-7.29	-23.89	-7.58	-1.41	4.83	-0.13
200	1.48	-16.53	-3.69	-15.27	-3.91	-12.39	8.29	10.28
Average	9.24	-6.58	3.19	-13.80	0.27	-2.97	13.02	1.76
Minimum	-1.27	-16.53	-7.29	-25.05	-7.58	-12.39	4.83	-16.54
Maximum	15.80	2.16	9.88	-3.43	6.50	6.52	17.18	10.28

<u>Overall</u>	90°Lag	30°Lag
Average	6.43	-5.40
Minimum	-7.58	-25.05
Maximum	17.18	10.28

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR 60 Hz

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAR calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VAR/VAR. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NC SL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

Phase A:

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.005	-2.18	-51.42	0.82	-31.75	-7.88	-44.12	4.07	-75.65
0.02	-7.04	-28.74	-4.34	-23.92	-4.36	-23.08	5.19	-27.04
0.05	-4.85	-16.49	1.20	-7.29	0.66	-12.69	13.59	-1.50

Phase B:

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.005	11.43	-31.24	-5.57	-57.93	-20.85	-80.49	-11.12	-76.69
0.02	-11.29	-35.78	-11.83	-41.75	-19.61	-53.64	-0.13	-46.16
0.05	0.27	-16.97	-0.22	-20.20	-5.87	-33.93	10.31	-14.00

Phase C:

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.005	23.20	9.62	2.66	5.99	-4.43	-3.08	4.65	-31.22
0.02	-6.76	-15.49	-4.46	4.20	-7.97	-12.21	1.60	-7.97
0.05	6.32	9.70	7.44	6.93	7.09	10.17	15.85	18.16

Total:

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.005	10.71	-23.57	-0.74	-27.69	-10.52	-42.71	-0.52	-60.89
0.02	-8.27	-26.64	-6.87	-20.62	-10.64	-29.60	2.16	-26.80
0.05	0.58	-7.97	2.81	-7.04	0.57	-12.10	13.19	1.13
Average	1.01	-19.58	-1.59	-18.42	-6.98	-28.12	4.90	-29.05
Minimum	-11.29	-51.42	-11.83	-57.93	-20.85	-80.49	-11.12	-76.69
Maximum	23.20	9.70	7.44	6.93	7.09	10.17	15.85	18.16

<u>Overall</u>	90°Lag	30°Lag
Average	-0.67	-23.79
Minimum	-20.85	-80.49
Maximum	23.20	18.16

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....VA-hour RMS 60 Hz Phase A

Date..... 16-Oct-26 Uncertainty at Unity..... 13

Serial Number..... XXXXXX Uncertainty at 60° Phase Angle.... 23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVAh/VAh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	-9.07	12.62	-31.78	-18.61	-2.13	-31.31	-18.49	-9.17	-29.93	-9.45	7.06	-22.63
0.25	1.17	23.56	-26.28	-10.41	5.48	-24.68	-10.21	-2.58	-23.20	-1.27	14.26	-14.31
0.5	-10.99	15.02	-35.89	-22.93	-2.79	-34.92	-23.51	-11.04	-33.24	-14.52	5.18	-25.02
1	-8.22	6.46	-32.50	-19.73	-10.32	-33.75	-20.69	-16.65	-37.78	-11.55	-0.11	-25.43
2.5	-5.38	7.41	-23.98	-14.46	-6.57	-22.98	-15.60	-15.24	-24.33	-6.99	1.75	-15.35
3	-1.76	22.18	-26.72	-12.54	5.80	-25.83	-12.48	-1.00	-25.97	-7.22	11.20	-18.92
5	-9.61	11.48	-37.05	-21.62	-6.80	-38.87	-21.74	-12.86	-37.59	-12.19	2.31	-31.13
10	-8.09	12.04	-31.26	-17.40	-2.91	-30.16	-18.77	-10.78	-31.36	-9.94	6.13	-23.77
15	-6.30	16.63	-30.85	-15.74	1.19	-30.11	-15.69	-5.33	-30.49	-8.30	9.69	-18.56
20	-11.81	8.45	-34.40	-17.64	-4.19	-30.81	-18.34	-10.53	-31.45	-8.26	5.58	-25.04
30	-7.05	20.72	-33.84	-13.87	8.51	-29.75	-15.23	0.77	-32.40	-5.91	16.21	-18.96
40	-8.86	15.21	-32.38	-11.10	8.90	-22.72	-9.03	1.06	-25.87	-2.06	18.66	-21.90
50	-10.36	18.38	-32.12	-13.96	10.73	-24.43	-13.38	2.78	-27.85	-6.33	15.65	-17.53
60	-8.78	4.96	-15.56	-12.34	-4.17	-8.85	-12.22	-10.01	-10.60	-3.03	5.98	-3.42
100	-6.16	5.19	-8.57	-6.01	-1.35	0.72	-3.64	-4.05	-0.85	4.39	12.75	5.26
120	-5.35	2.53	-4.44	-9.79	-6.39	0.98	-7.00	-8.88	-0.21	2.71	8.47	6.40
180	-20.05	-12.41	-14.23	-11.52	-7.46	3.04	-8.09	-9.16	-0.25	1.35	8.11	6.67
200	-14.22	-3.86	-7.48	-6.70	-0.47	9.13	-2.49	-0.47	2.97	6.39	14.65	8.04

Average	-8.38	10.36	-25.52	-14.24	-0.83	-20.85	-13.70	-6.84	-22.24	-5.12	9.08	-14.20
Minimum	-20.05	-12.41	-37.05	-22.93	-10.32	-38.87	-23.51	-16.65	-37.78	-14.52	-0.11	-31.13
Maximum	1.17	23.56	-4.44	-6.01	10.73	9.13	-2.49	2.78	2.97	6.39	18.66	8.04

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	-10.36	2.94	-20.70
Minimum	-23.51	-16.65	-38.87
Maximum	6.39	23.56	9.13

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....VA-hour RMS 60 Hz Phase B

Date..... 16-Oct-26 Uncertainty at Unity..... 13

Serial Number..... XXXXXX Uncertainty at 60° Phase Angle.... 23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVAh/VAh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	1.52	23.50	-23.78	-16.19	1.85	-28.58	-15.60	-5.36	-26.94	-11.10	7.57	-24.08
0.25	-0.14	27.19	-26.36	-14.98	5.46	-28.09	-13.36	-3.61	-23.78	-8.60	9.47	-20.13
0.5	-5.04	27.04	-30.64	-17.47	7.70	-28.45	-16.26	-1.11	-24.86	-11.09	12.61	-22.34
1	-3.70	15.48	-25.78	-16.98	-3.95	-26.45	-17.14	-9.35	-28.38	-10.93	2.96	-19.04
2.5	-6.59	11.93	-25.12	-18.29	-6.13	-23.71	-17.57	-13.85	-22.52	-12.13	-0.22	-19.26
3	-5.92	23.43	-28.87	-19.44	3.52	-28.19	-17.80	-3.25	-27.52	-15.49	5.79	-23.41
5	-1.59	24.84	-28.37	-12.73	6.22	-26.96	-11.48	-0.14	-24.41	-6.38	13.53	-21.91
10	-3.23	20.81	-26.12	-17.14	0.93	-27.40	-17.12	-6.32	-26.49	-11.63	7.77	-23.64
15	1.59	29.31	-25.55	-13.23	8.08	-27.39	-12.79	2.35	-25.64	-7.98	13.53	-19.11
20	-4.80	18.59	-28.12	-19.02	-2.12	-29.20	-17.84	-7.01	-27.97	-12.70	5.49	-25.42
30	0.99	31.22	-26.66	-14.24	10.93	-29.79	-14.72	4.54	-30.37	-9.77	15.69	-21.62
40	4.77	29.68	-20.50	-9.38	12.50	-20.15	-8.36	5.70	-22.25	-4.21	18.90	-20.71
50	5.02	35.21	-19.06	-10.29	17.06	-20.95	-9.92	9.55	-22.46	-7.80	18.74	-17.17
60	8.22	22.72	-1.80	-8.39	2.18	-5.15	-7.84	-2.53	-4.55	-3.19	8.87	-2.31
100	5.12	19.24	-1.98	-11.81	-4.00	-7.02	-10.63	-6.85	-7.10	-5.63	4.20	-5.05
120	7.60	19.07	2.76	-10.96	-5.91	-2.44	-9.53	-8.02	-1.61	-3.38	4.02	-0.35
180	7.93	17.67	4.74	-10.48	-3.92	1.26	-8.28	-6.15	-1.23	-3.14	5.87	1.60
200	9.97	21.21	6.31	-6.14	2.26	5.60	-4.67	1.87	0.77	0.79	11.98	1.91

Average	1.21	23.23	-18.05	-13.73	2.93	-19.61	-12.83	-2.75	-19.29	-8.02	9.26	-15.67
Minimum	-6.59	11.93	-30.64	-19.44	-6.13	-29.79	-17.84	-13.85	-30.37	-15.49	-0.22	-25.42
Maximum	9.97	35.21	6.31	-6.14	17.06	5.60	-4.67	9.55	0.77	0.79	18.90	1.91

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	-8.34	8.17	-18.16
Minimum	-19.44	-13.85	-30.64
Maximum	9.97	35.21	6.31

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....VA-hour RMS 60 Hz Phase C

Date..... 16-Oct-26 Uncertainty at Unity..... 13

Serial Number..... XXXXXX Uncertainty at 60° Phase Angle.... 23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVAh/VAh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	-6.47	19.13	-38.39	-9.05	8.95	-26.25	-11.78	0.95	-23.25	-1.81	18.04	-16.04
0.25	-8.47	17.12	-35.28	-9.53	9.03	-24.24	-11.57	-1.34	-22.49	-0.75	17.30	-12.64
0.5	-5.49	21.16	-31.67	-7.36	12.59	-18.82	-9.09	4.62	-17.71	0.49	21.51	-10.65
1	-8.32	7.86	-33.67	-9.81	1.28	-22.82	-11.66	-4.96	-27.41	-1.73	11.62	-12.98
2.5	-2.24	11.56	-23.58	-6.71	2.30	-14.73	-8.98	-6.92	-16.69	0.51	11.27	-6.66
3	-2.02	23.42	-28.83	-7.33	13.33	-19.03	-7.64	5.81	-19.75	-1.36	18.98	-12.11
5	-3.68	18.88	-33.59	-5.13	11.20	-21.62	-5.52	4.65	-19.97	4.33	21.16	-13.04
10	-11.17	10.98	-37.64	-11.88	5.35	-24.65	-13.90	-4.53	-26.39	-4.65	14.03	-17.15
15	-6.53	18.35	-34.19	-7.17	12.32	-22.44	-8.65	3.54	-22.61	-0.02	19.38	-11.63
20	-12.25	10.99	-39.14	-11.50	5.17	-25.16	-12.48	-3.00	-25.24	-2.53	13.36	-18.79
30	-6.34	24.79	-37.92	-6.42	19.66	-24.09	-8.42	9.90	-27.12	1.56	24.73	-12.89
40	-5.99	24.45	-34.41	-2.07	22.04	-16.80	-1.48	12.19	-19.19	7.02	30.51	-13.64
50	-6.17	30.06	-34.09	-4.53	24.78	-18.72	-5.06	15.17	-20.46	3.00	28.85	-9.36
60	-3.58	18.67	-18.69	-1.25	11.98	-3.35	-2.03	3.61	-3.02	7.33	20.37	5.48
100	5.12	24.14	-3.79	9.42	18.22	12.24	10.43	12.98	11.87	18.91	29.16	18.19
120	2.68	21.05	-4.57	5.96	13.52	10.96	7.33	7.74	12.37	17.33	24.91	19.37
180	-9.09	13.09	-16.25	-1.74	10.67	5.12	0.49	3.98	4.67	10.65	22.16	13.23
200	-14.49	13.50	-21.74	-4.63	10.84	1.66	-2.96	5.64	-1.88	6.57	20.41	5.58

Average	-5.80	18.29	-28.19	-5.04	11.85	-14.04	-5.72	3.89	-14.68	3.60	20.43	-5.87
Minimum	-14.49	7.86	-39.14	-11.88	1.28	-26.25	-13.90	-6.92	-27.41	-4.65	11.27	-18.79
Maximum	5.12	30.06	-3.79	9.42	24.78	12.24	10.43	15.17	12.37	18.91	30.51	19.37

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	-3.24	13.61	-15.70
Minimum	-14.49	-6.92	-39.14
Maximum	18.91	30.51	19.37

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	VA-hour RMS	60 Hz	Total
Date.....	16-Oct-26	Uncertainty at Unity.....	21
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	38

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVAh/VAh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	-4.64	18.42	-31.32	-14.62	2.86	-28.67	-15.26	-4.53	-26.71	-7.52	10.86	-20.92
0.25	-2.45	22.59	-29.33	-11.67	6.65	-25.67	-11.66	-2.45	-23.19	-3.51	13.68	-15.69
0.5	-7.20	21.14	-32.68	-15.89	5.87	-27.43	-16.25	-2.51	-25.30	-8.35	13.10	-19.36
1	-6.69	9.88	-30.58	-15.50	-4.30	-27.70	-16.47	-10.29	-31.25	-8.11	4.84	-19.15
2.5	-4.76	10.33	-24.19	-13.21	-3.41	-20.50	-14.05	-12.03	-21.15	-6.20	4.26	-13.72
3	-3.19	23.06	-28.17	-13.14	7.54	-24.33	-12.64	0.51	-24.43	-8.05	11.96	-18.15
5	-4.92	18.35	-32.95	-13.11	3.59	-29.15	-12.96	-2.80	-27.30	-4.74	12.38	-22.07
10	-7.51	14.58	-31.70	-15.47	1.15	-27.46	-16.59	-7.23	-28.00	-8.70	9.34	-21.53
15	-3.72	21.46	-30.23	-12.05	7.19	-26.61	-12.34	0.19	-26.28	-5.41	14.20	-16.41
20	-9.59	12.63	-33.86	-16.10	-0.34	-28.34	-16.17	-6.87	-28.24	-7.83	8.10	-23.13
30	-4.16	25.54	-32.84	-11.55	12.99	-27.88	-12.83	5.04	-29.96	-4.68	18.85	-17.77
40	-3.40	23.10	-29.07	-7.52	14.49	-19.91	-6.24	6.29	-22.48	0.25	22.65	-18.75
50	-3.87	27.89	-28.43	-9.64	17.48	-21.33	-9.45	9.17	-23.51	-3.69	21.04	-14.71
60	-1.34	15.45	-12.01	-7.33	3.30	-5.79	-7.40	-3.01	-6.03	0.40	11.71	-0.05
100	1.36	16.16	-4.78	-2.80	4.30	2.02	-1.29	0.69	1.35	5.90	15.33	6.13
120	1.62	14.19	-2.05	-4.91	0.41	3.20	-3.07	-3.08	3.52	5.53	12.52	8.53
180	-7.11	6.14	-8.60	-7.91	-0.24	3.16	-5.28	-3.80	1.02	2.95	12.04	7.13
200	-6.21	10.28	-7.63	-5.82	4.21	5.51	-3.33	2.31	0.66	4.53	15.74	5.18
Average	-4.32	17.29	-23.91	-11.01	4.65	-18.16	-10.74	-1.91	-18.74	-3.18	12.92	-11.91
Minimum	-9.59	6.14	-33.86	-16.10	-4.30	-29.15	-16.59	-12.03	-31.25	-8.70	4.26	-23.13
Maximum	1.62	27.89	-2.05	-2.80	17.48	5.51	-1.29	9.17	3.52	5.90	22.65	8.53
Overall Unity PF0.5 Lag0.5 Lead Average Minimum Maximum												
-7.318.24-18.18 -16.59-12.03-33.86 5.9027.898.53												

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....VA-hour RMS 60 Hz

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VAh/VAh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

Phase A:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	19.16	14.88	16.58	35.72	33.38	44.48	45.35	20.12	39.40	36.14	41.20	44.03
0.02	2.00	-5.34	0.26	-1.15	-6.39	0.61	6.81	-3.58	6.37	17.33	6.12	16.49
0.05	5.57	-0.89	3.75	0.36	-3.45	-2.20	-1.38	-3.97	-0.02	13.77	11.31	13.39

Phase B:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	24.64	17.91	19.25	-16.87	-7.17	36.31	-14.83	-31.87	32.02	-4.20	2.22	20.91
0.02	6.53	-2.09	2.72	-16.46	-23.99	-19.96	-11.07	-21.09	-21.68	2.55	-15.06	5.20
0.05	15.27	8.64	9.94	-4.98	-10.83	-7.01	-8.70	-15.72	-12.05	7.53	-1.46	3.20

Phase C:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	24.87	22.67	31.36	19.31	14.56	33.11	20.49	8.13	31.88	37.79	26.63	52.44
0.02	4.02	-3.62	2.07	10.27	1.56	8.92	3.69	1.40	7.21	18.54	13.74	21.84
0.05	16.17	8.21	12.91	18.60	12.41	16.92	16.80	11.52	13.61	31.28	24.31	28.42

Total:

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.005	22.86	18.48	22.45	12.69	13.62	37.96	16.96	-1.16	34.43	23.21	23.35	39.13
0.02	4.18	-3.68	1.73	-2.43	-9.58	-3.52	-0.19	-7.75	-2.73	12.80	1.56	14.51
0.05	12.33	5.32	8.84	4.66	-0.62	2.57	2.24	-2.72	0.55	17.56	11.39	14.98

Average	13.13	6.71	10.99	4.98	1.12	12.35	6.35	-3.89	10.75	17.86	12.11	22.88
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Minimum	2.00	-5.34	0.26	-16.87	-23.99	-19.96	-14.83	-31.87	-21.68	-4.20	-15.06	3.20
Maximum	24.87	22.67	31.36	35.72	33.38	44.48	45.35	20.12	39.40	37.79	41.20	52.44

<u>Overall</u>	Unity PF	0.5 Lag	0.5 Lead
Average	10.58	4.01	14.24
Minimum	-16.87	-31.87	-21.68
Maximum	45.35	41.20	52.44

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	VA RMS	60 Hz	Phase A
Date.....	16-Oct-26	Uncertainty at Unity.....	13
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VA calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVA/VA. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	-9.20	12.48	-31.87	-18.59	-2.12	-31.34	-18.59	-9.11	-29.99	-9.53	7.10	-22.74
0.25	1.14	23.50	-26.40	-10.32	5.45	-24.67	-10.36	-2.77	-23.07	-1.26	14.21	-14.23
0.5	-11.24	14.89	-35.98	-22.95	-2.99	-35.19	-23.61	-11.16	-33.19	-14.63	5.06	-24.85
1	-8.13	6.59	-32.50	-19.77	-10.20	-33.85	-20.66	-16.59	-37.91	-11.37	-0.10	-25.56
2.5	-5.41	7.37	-24.14	-14.33	-6.58	-23.02	-15.65	-15.09	-24.47	-7.10	1.64	-15.33
3	-1.74	22.19	-26.63	-12.60	5.78	-25.84	-12.42	-1.16	-26.04	-7.18	11.34	-18.95
5	-9.66	11.40	-37.10	-21.71	-6.86	-38.90	-21.80	-12.92	-37.64	-12.23	2.25	-31.17
10	-8.10	11.96	-31.35	-17.46	-2.92	-30.12	-18.74	-10.55	-31.41	-9.95	6.18	-23.85
15	-6.45	16.52	-30.94	-15.92	1.09	-30.26	-15.89	-5.55	-30.62	-8.49	9.60	-18.60
20	-11.89	8.33	-34.46	-17.71	-4.18	-30.83	-18.37	-10.56	-31.47	-8.30	5.33	-25.11
30	-7.09	20.55	-33.94	-14.01	8.45	-29.85	-15.31	0.68	-32.40	-6.09	16.10	-19.03
40	-8.97	15.07	-32.46	-11.22	8.89	-22.78	-9.16	0.94	-25.95	-2.09	18.60	-21.91
50	-10.39	18.37	-32.19	-14.04	10.70	-24.36	-13.34	2.64	-27.81	-6.41	15.61	-17.71
60	-8.73	4.86	-15.53	-12.32	-4.22	-8.88	-12.19	-9.97	-10.48	-3.10	5.93	-3.58
100	-6.10	5.14	-8.57	-5.93	-1.27	0.69	-3.56	-4.06	-0.90	4.64	12.86	5.29
120	-5.38	2.43	-4.54	-9.84	-6.32	1.14	-7.09	-8.95	-0.24	2.68	8.44	6.37
180	-20.52	-13.18	-14.96	-11.95	-7.87	2.39	-8.64	-9.38	-0.76	0.79	7.60	6.18
200	-14.43	-3.97	-7.59	-6.90	-0.54	9.12	-2.61	-0.61	2.87	6.26	14.73	8.06
Average	-8.46	10.25	-25.62	-14.31	-0.87	-20.92	-13.78	-6.90	-22.30	-5.19	9.03	-14.26
Minimum	-20.52	-13.18	-37.10	-22.95	-10.20	-38.90	-23.61	-16.59	-37.91	-14.63	-0.10	-31.17
Maximum	1.14	23.50	-4.54	-5.93	10.70	9.12	-2.61	2.64	2.87	6.26	18.60	8.06
<u>Overall</u>				Unity PF	0.5 Lag	0.5 Lead						
Average				-10.43	2.88	-20.78						
Minimum				-23.61	-16.59	-38.90						
Maximum				6.26	23.50	9.12						

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VA RMS 60 Hz Phase B

Date..... 16-Oct-26 Uncertainty at Unity..... 13

Serial Number..... XXXXXX Uncertainty at 60° Phase Angle.... 23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VA calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVA/VA. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	1.56	23.57	-23.89	-16.12	1.84	-28.75	-15.60	-5.16	-26.78	-11.26	7.69	-24.14
0.25	-0.21	27.01	-26.39	-14.93	5.15	-27.98	-13.45	-3.82	-23.75	-8.57	9.32	-20.32
0.5	-5.08	27.17	-30.94	-17.36	7.87	-28.60	-16.16	-0.80	-24.92	-11.07	12.89	-22.56
1	-3.89	15.18	-25.77	-17.12	-4.10	-26.40	-17.13	-9.49	-28.32	-11.04	2.81	-18.90
2.5	-6.55	11.94	-25.19	-18.27	-6.17	-23.67	-17.44	-13.85	-22.62	-12.06	-0.11	-19.31
3	-6.14	23.37	-28.83	-19.50	3.35	-28.22	-17.91	-3.38	-27.53	-15.53	5.73	-23.46
5	-1.63	24.82	-28.44	-12.83	6.26	-26.96	-11.51	-0.20	-24.50	-6.42	13.51	-21.98
10	-3.26	20.67	-26.17	-17.14	0.84	-27.38	-17.17	-6.14	-26.51	-11.73	7.67	-23.78
15	1.51	29.22	-25.79	-13.34	7.99	-27.53	-12.76	2.29	-25.82	-8.00	13.59	-19.30
20	-4.96	18.51	-28.10	-19.13	-2.17	-29.15	-17.94	-7.18	-28.09	-12.75	5.37	-25.47
30	0.99	31.06	-26.77	-14.31	10.83	-29.82	-14.80	4.50	-30.37	-9.88	15.58	-21.69
40	4.59	29.62	-20.64	-9.48	12.39	-20.23	-8.45	5.62	-22.33	-4.35	18.85	-20.77
50	5.03	35.09	-19.14	-10.33	17.01	-20.99	-10.03	9.36	-22.48	-7.84	18.61	-17.25
60	8.12	22.65	-1.86	-8.53	2.07	-5.22	-8.05	-2.60	-4.55	-3.40	8.73	-2.37
100	5.09	19.11	-1.95	-11.69	-3.90	-7.07	-10.55	-6.96	-6.98	-5.45	4.40	-4.85
120	7.67	19.00	2.69	-11.01	-6.05	-2.52	-9.57	-8.02	-1.63	-3.43	4.01	-0.42
180	7.76	17.54	4.38	-10.56	-3.98	0.93	-8.51	-6.39	-1.53	-3.35	5.64	1.17
200	9.81	21.23	6.27	-6.16	2.32	5.53	-4.60	1.78	0.66	0.69	12.06	1.96

Average	1.13	23.15	-18.14	-13.77	2.86	-19.67	-12.87	-2.80	-19.34	-8.08	9.24	-15.75
Minimum	-6.55	11.94	-30.94	-19.50	-6.17	-29.82	-17.94	-13.85	-30.37	-15.53	-0.11	-25.47
Maximum	9.81	35.09	6.27	-6.16	17.01	5.53	-4.60	9.36	0.66	0.69	18.85	1.96

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	-8.39	8.11	-18.22
Minimum	-19.50	-13.85	-30.94
Maximum	9.81	35.09	6.27

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	VA RMS	60 Hz	Phase C
Date.....	16-Oct-26	Uncertainty at Unity.....	13
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	23

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VA calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVA/VA. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.2	-6.46	19.16	-38.48	-9.17	8.99	-26.23	-11.81	0.72	-23.30	-1.69	17.94	-16.03
0.25	-8.56	17.09	-35.62	-9.49	9.29	-24.11	-11.62	-1.36	-22.68	-0.96	17.19	-12.77
0.5	-5.56	21.19	-31.76	-7.35	12.63	-19.01	-9.13	4.56	-17.84	0.52	21.47	-10.70
1	-8.36	7.90	-33.68	-9.91	1.21	-22.86	-11.68	-4.99	-27.49	-1.87	11.55	-13.07
2.5	-2.18	11.57	-23.64	-6.48	2.31	-14.71	-9.07	-6.88	-16.75	0.42	11.15	-6.68
3	-2.09	23.37	-28.78	-7.51	13.31	-19.10	-7.65	5.66	-19.65	-1.38	19.08	-12.20
5	-3.74	18.84	-33.67	-5.26	11.14	-21.68	-5.54	4.50	-19.99	4.23	21.06	-13.10
10	-11.24	11.01	-37.67	-11.46	5.37	-24.58	-13.97	-4.28	-26.30	-4.68	14.01	-17.11
15	-6.48	18.33	-34.25	-7.22	12.26	-22.65	-8.68	3.48	-22.66	-0.08	19.32	-11.64
20	-12.32	10.89	-39.18	-11.64	5.17	-25.18	-12.43	-3.08	-25.25	-2.57	13.33	-18.79
30	-6.41	24.72	-37.89	-6.47	19.60	-24.23	-8.59	9.92	-27.18	1.53	24.61	-12.98
40	-6.09	24.39	-34.47	-2.12	22.05	-16.76	-1.57	12.06	-19.26	7.05	30.44	-13.68
50	-6.11	30.05	-34.18	-4.62	24.79	-18.89	-5.10	15.10	-20.47	2.92	28.79	-9.36
60	-3.64	18.66	-18.75	-1.32	11.96	-3.42	-2.11	3.57	-3.14	7.28	20.34	5.46
100	5.11	24.10	-3.89	9.36	18.20	12.22	10.37	13.00	11.86	18.91	29.21	18.26
120	2.77	21.07	-4.58	5.98	13.48	10.89	7.36	7.78	12.48	17.39	24.96	19.45
180	-9.18	12.89	-16.43	-1.63	10.69	5.05	0.51	3.96	4.67	10.58	22.09	13.24
200	-14.46	13.51	-21.86	-4.69	10.80	1.55	-2.94	5.72	-1.91	6.52	20.51	5.57

Average	-5.83	18.26	-28.26	-5.06	11.85	-14.09	-5.76	3.86	-14.71	3.56	20.39	-5.90
Minimum	-14.46	7.90	-39.18	-11.64	1.21	-26.23	-13.97	-6.88	-27.49	-4.68	11.15	-18.79
Maximum	5.11	30.05	-3.89	9.36	24.79	12.22	10.37	15.10	12.48	18.91	30.44	19.45

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	-3.27	13.59	-15.74
Minimum	-14.46	-6.88	-39.18
Maximum	18.91	30.44	19.45

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	VA RMS	60 Hz	Total
Date.....	16-Oct-26	Uncertainty at Unity.....	21
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	38

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VA calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVA/VA. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	-4.67	18.39	-31.45	-14.64	2.95	-28.74	-15.34	-4.54	-26.77	-7.51	10.79	-20.91
0.25	-2.58	22.52	-29.37	-11.67	6.66	-25.60	-11.79	-2.54	-23.15	-3.61	13.60	-15.66
0.5	-7.21	21.00	-32.79	-15.93	5.79	-27.58	-16.28	-2.55	-25.25	-8.42	13.08	-19.39
1	-6.77	9.89	-30.63	-15.60	-4.29	-27.69	-16.52	-10.36	-31.30	-8.07	4.72	-19.18
2.5	-4.75	10.28	-24.31	-13.18	-3.49	-20.47	-14.07	-11.85	-21.28	-6.25	4.22	-13.75
3	-3.32	22.99	-28.10	-13.16	7.50	-24.43	-12.64	0.43	-24.42	-8.01	12.02	-18.17
5	-4.97	18.39	-33.06	-13.17	3.52	-29.21	-12.94	-2.81	-27.34	-4.79	12.34	-22.10
10	-7.54	14.59	-31.73	-15.43	1.15	-27.35	-16.64	-7.01	-28.04	-8.76	9.14	-21.59
15	-3.77	21.35	-30.30	-12.09	7.09	-26.66	-12.41	0.10	-26.36	-5.55	14.16	-16.52
20	-9.70	12.63	-33.93	-16.08	-0.38	-28.40	-16.27	-6.97	-28.28	-7.85	8.08	-23.11
30	-4.23	25.43	-32.87	-11.67	12.95	-27.93	-12.88	4.94	-30.01	-4.78	18.81	-17.88
40	-3.49	23.03	-29.19	-7.56	14.48	-19.91	-6.39	6.20	-22.53	0.16	22.63	-18.78
50	-3.83	27.84	-28.51	-9.70	17.48	-21.41	-9.50	9.09	-23.56	-3.75	21.03	-14.73
60	-1.44	15.40	-12.06	-7.36	3.23	-5.85	-7.36	-3.05	-6.08	0.31	11.66	-0.15
100	1.34	16.10	-4.80	-2.80	4.33	1.91	-1.22	0.65	1.29	5.96	15.41	6.22
120	1.72	14.15	-2.13	-5.00	0.39	3.13	-3.09	-3.06	3.56	5.55	12.46	8.45
180	-7.39	5.73	-9.01	-8.08	-0.33	2.89	-5.47	-3.96	0.82	2.56	11.84	6.85
200	-6.39	10.25	-7.72	-5.91	4.22	5.43	-3.36	2.31	0.56	4.56	15.76	5.21
Average	-4.39	17.22	-24.00	-11.06	4.63	-18.21	-10.79	-1.94	-18.79	-3.24	12.88	-11.96
Minimum	-9.70	5.73	-33.93	-16.08	-4.29	-29.21	-16.64	-11.85	-31.30	-8.76	4.22	-23.11
Maximum	1.72	27.84	-2.13	-2.80	17.48	5.43	-1.22	9.09	3.56	5.96	22.63	8.45
<u>Overall</u>				Unity PF	0.5 Lag	0.5 Lead						
Average				-7.37	8.19	-18.24						
Minimum				-16.64	-11.85	-33.93						
Maximum				5.96	27.84	8.45						

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VA RMS 60 Hz

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as $\mu\text{VA}/\text{VA}$. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

Phase A:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	17.79	15.09	16.83	37.85	36.28	41.27	44.48	20.22	37.36	35.58	41.66	45.79
0.02	1.78	-5.35	-0.06	-1.19	-6.81	0.38	6.67	-3.01	6.47	17.86	5.90	16.89
0.05	5.56	-0.96	3.66	0.00	-3.47	-2.13	-1.39	-3.88	-0.46	13.59	11.30	13.39

Phase B:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	24.59	17.85	19.51	-17.49	-3.83	36.47	-14.36	-27.86	35.93	0.77	0.21	12.37
0.02	6.53	-2.17	2.74	-15.64	-24.67	-20.83	-10.23	-22.26	-23.10	1.42	-14.91	8.29
0.05	15.17	8.53	9.92	-4.85	-10.77	-6.96	-8.87	-15.28	-11.60	7.93	-1.28	2.75

Phase C:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	23.75	22.93	31.45	13.86	11.82	37.64	20.33	7.28	27.85	32.80	26.75	52.34
0.02	3.94	-3.53	2.13	9.59	2.75	8.82	3.97	1.44	6.29	17.55	13.62	21.68
0.05	16.00	8.22	12.81	18.34	12.31	16.70	17.14	11.63	13.59	31.38	23.85	29.06

Total:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	22.26	18.48	22.49	11.87	13.85	37.78	15.78	-0.90	34.05	24.66	23.17	39.38
0.02	4.20	-3.75	1.61	-2.18	-9.78	-3.85	-0.06	-7.84	-2.77	12.77	1.88	14.37
0.05	12.21	5.28	8.81	4.60	-0.70	2.55	2.21	-2.74	0.36	17.48	11.31	14.98

Average	12.82	6.72	10.99	4.56	1.41	12.32	6.31	-3.60	10.33	17.82	11.95	22.61
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Minimum	1.78	-5.35	-0.06	-17.49	-24.67	-20.83	-14.36	-27.86	-23.10	0.77	-14.91	2.75
Maximum	24.59	22.93	31.45	37.85	36.28	41.27	44.48	20.22	37.36	35.58	41.66	52.34

<u>Overall</u>	Unity PF	0.5 Lag	0.5 Lead
Average	10.38	4.12	14.06
Minimum	-17.49	-27.86	-23.10
Maximum	44.48	41.66	52.34

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Qh RMS 60 Hz Phase A

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Q-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μQh/Qh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.2	10.48	-3.94	-8.52	1.98	-2.38	-9.19	8.91	-0.92	-9.31	11.68	7.48	6.77
0.25	7.03	13.11	9.81	4.80	13.74	24.83	2.38	14.10	24.20	6.12	22.14	30.80
0.5	6.41	-3.07	-16.66	-7.99	-2.44	-1.91	-2.80	-2.18	-7.54	6.77	5.55	1.69
1	14.28	0.51	-9.60	4.08	1.31	-8.61	10.16	1.40	-7.54	11.27	9.48	8.77
2.5	8.41	2.90	-5.68	6.69	3.83	3.40	3.83	4.41	3.98	4.81	12.02	13.27
3	12.25	6.17	-12.43	3.43	6.77	4.62	7.36	7.60	-1.70	17.66	14.90	6.79
5	2.33	-3.03	-2.68	-9.97	-2.46	-1.82	-3.03	-1.39	-2.10	-1.03	6.29	15.33
10	-4.89	-4.82	-6.40	-4.82	-2.18	1.90	-7.25	-3.11	1.83	-6.87	4.69	11.44
15	-5.32	-0.27	-5.23	-10.47	1.73	12.89	-9.80	1.93	7.08	-0.80	8.35	12.55
20	-0.10	-6.75	-8.61	-14.84	-4.32	-4.32	-6.32	-4.61	-8.76	0.69	3.89	6.06
30	-0.08	-0.36	3.45	0.49	2.02	3.93	-0.08	2.40	7.08	-0.34	10.41	21.09
40	-2.96	-5.89	-15.41	-5.32	-3.25	-0.32	-5.61	-2.18	-5.61	1.49	6.52	0.23
50	6.64	-4.46	-13.85	-3.32	-1.15	-7.10	5.03	-0.92	-12.59	13.66	7.90	1.03
60	9.75	-0.84	-2.56	7.55	0.97	-5.99	10.32	2.40	-4.85	10.41	10.18	10.57
100	1.49	-4.81	-16.59	0.57	-2.86	-2.18	0.46	-1.72	-7.55	7.62	6.43	-2.63
120	10.03	-3.13	-13.91	-0.17	-0.55	-7.61	8.79	0.69	-13.14	17.81	8.58	0.72
180	2.15	-13.94	-17.62	3.17	-10.00	-22.01	3.99	-9.93	-19.79	3.52	-2.18	-7.36
200	-1.83	-9.50	-20.49	-1.60	-5.49	-7.44	-0.23	-4.92	-15.11	8.17	2.40	-10.41

Average	4.23	-2.34	-9.05	-1.43	-0.37	-1.50	1.45	0.17	-3.97	6.26	8.06	7.04
Minimum	-5.32	-13.94	-20.49	-14.84	-10.00	-22.01	-9.80	-9.93	-19.79	-6.87	-2.18	-10.41
Maximum	14.28	13.11	9.81	7.55	13.74	24.83	10.32	14.10	24.20	17.81	22.14	30.80

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	2.63	1.38	-1.87
Minimum	-14.84	-13.94	-22.01
Maximum	17.81	22.14	30.80

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Qh RMS 60 Hz Phase B

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Q-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μQh/Qh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.2	-6.18	-3.61	15.06	-15.79	-1.59	12.82	-8.52	-1.15	12.93	-3.25	8.73	27.51
0.25	-8.70	10.52	19.73	-10.31	11.06	38.42	-13.89	11.06	36.18	-4.89	20.14	41.96
0.5	-13.17	0.06	7.93	-29.53	-0.12	24.74	-24.35	0.78	17.40	-10.83	9.27	31.66
1	-19.34	-0.74	30.73	-30.16	-0.12	30.99	-24.71	-0.48	31.71	-19.63	9.34	43.74
2.5	2.55	-2.25	-8.54	0.40	-0.46	2.76	-2.75	-1.46	3.69	2.40	7.32	10.41
3	2.47	-0.74	-13.62	-8.02	0.09	6.53	-3.37	0.33	-2.41	10.60	8.12	2.88
5	17.57	-3.32	-12.05	3.40	-1.82	-12.47	10.77	-2.18	-11.69	15.56	7.21	5.15
10	-27.42	-4.11	22.93	-28.78	-2.18	33.09	-32.43	-2.32	34.02	-28.38	6.75	39.94
15	-22.20	1.26	15.75	-30.50	2.97	37.12	-29.35	2.69	30.54	-15.83	11.86	37.65
20	3.12	-4.96	-1.67	-14.19	-2.46	2.97	-5.18	-3.96	-2.53	5.49	5.72	10.99
30	3.64	1.64	8.41	3.26	3.55	9.46	1.93	3.93	12.89	4.00	11.48	25.98
40	-23.13	-4.03	11.92	-28.50	-1.89	30.44	-28.35	-1.25	24.72	-17.05	8.01	25.75
50	-10.76	-2.63	12.70	-23.80	0.34	19.45	-13.28	0.91	13.73	-0.71	9.63	27.49
60	-8.37	0.02	26.05	-12.38	2.97	22.43	-9.71	2.69	23.96	-7.29	11.79	37.88
100	-19.00	-3.32	8.35	-24.72	-1.03	28.04	-24.72	-1.26	22.31	-13.16	7.53	23.00
120	-8.95	-2.37	11.08	-23.92	-0.84	19.76	-15.43	-0.55	14.61	-3.40	8.05	27.58
180	1.45	-4.72	4.25	-1.35	-2.37	2.34	-3.45	-2.75	7.55	-1.97	4.44	18.68
200	-5.27	-1.95	-5.49	-9.38	0.11	16.36	-10.41	0.23	8.81	3.13	9.36	10.46

Average	-7.87	-1.40	8.53	-15.79	0.35	18.07	-13.18	0.29	15.47	-4.73	9.15	24.93
Minimum	-27.42	-4.96	-13.62	-30.50	-2.46	-12.47	-32.43	-3.96	-11.69	-28.38	4.44	2.88
Maximum	17.57	10.52	30.73	3.40	11.06	38.42	10.77	11.06	36.18	15.56	20.14	43.74

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	-10.39	2.10	16.75
Minimum	-32.43	-4.96	-13.62
Maximum	17.57	20.14	43.74

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Qh RMS 60 Hz Phase C

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Q-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μQh/Qh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.2	-1.26	-3.05	8.02	-3.83	-3.61	-2.15	3.10	-3.16	-0.48	-0.92	3.10	10.79
0.25	-7.72	5.33	-0.12	-9.86	4.53	18.48	-2.80	4.80	6.41	8.62	10.20	5.55
0.5	-0.39	-0.83	3.64	-15.85	-1.10	3.46	1.40	-0.12	-8.52	10.91	3.98	1.69
1	-12.90	-3.61	12.93	-8.97	-4.05	2.12	-1.55	-3.34	3.10	-6.18	2.47	15.71
2.5	-4.46	1.26	-6.04	-2.53	1.47	9.20	1.47	2.26	-1.96	8.81	6.18	-5.27
3	6.53	2.59	-8.25	-4.44	2.24	-1.82	12.49	3.07	-16.24	23.67	6.98	-7.42
5	-6.97	-4.75	11.84	-10.33	-4.61	-0.67	-0.39	-4.32	-1.53	-5.49	1.60	12.36
10	-14.91	-6.18	-10.97	-8.76	-5.97	3.40	-6.90	-5.32	-5.61	-1.03	-0.34	-9.27
15	2.21	0.97	-7.33	-11.04	-0.46	4.41	3.55	0.88	-10.28	16.67	5.61	-6.98
20	-0.53	-5.89	1.47	-8.68	-5.75	-10.69	7.48	-5.75	-15.91	7.44	0.57	0.57
30	-6.28	1.26	4.88	2.50	0.69	7.55	2.59	1.64	6.12	1.72	6.45	8.73
40	-5.11	-4.25	-17.48	-13.40	-3.32	1.26	-1.60	-4.18	-15.34	11.21	1.37	-16.59
50	10.07	-1.83	-4.01	-0.80	-1.03	-12.13	15.91	-2.18	-16.94	18.52	3.78	-2.82
60	3.55	1.83	0.78	9.55	1.16	-0.94	11.65	1.45	-2.46	8.81	6.67	2.94
100	2.06	6.75	-4.58	-5.49	5.95	14.53	6.06	6.75	-1.15	18.88	12.20	-2.91
120	12.23	4.21	4.41	1.93	5.55	-3.99	16.42	3.74	-7.23	19.49	9.42	6.67
180	-9.42	-1.67	4.95	-5.23	-2.75	6.41	-7.39	-2.68	6.34	-8.08	0.98	8.20
200	-12.82	-1.49	-11.79	-22.20	-2.98	10.76	-12.36	-3.66	-5.04	1.30	1.94	-6.94

Average	-2.56	-0.52	-0.98	-6.52	-0.78	2.73	2.73	-0.56	-4.82	7.46	4.62	0.83
Minimum	-14.91	-6.18	-17.48	-22.20	-5.97	-12.13	-12.36	-5.75	-16.94	-8.08	-0.34	-16.59
Maximum	12.23	6.75	12.93	9.55	5.95	18.48	16.42	6.75	6.41	23.67	12.20	15.71

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	0.28	0.69	-0.56
Minimum	-22.20	-6.18	-17.48
Maximum	23.67	12.20	18.48

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Qh RMS 60 Hz Total

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Q-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μQh/Qh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.2	1.01	-3.53	4.89	-5.84	-2.49	0.49	1.16	-1.74	1.01	2.47	6.53	14.99
0.25	-3.13	9.63	9.75	-5.16	9.75	27.27	-4.80	9.98	22.26	3.26	17.47	26.05
0.5	-2.41	-1.22	-1.70	-17.79	-1.22	8.79	-8.61	-0.51	0.45	2.31	6.22	11.65
1	-5.99	-1.22	11.30	-11.65	-0.98	8.20	-5.39	-0.74	9.15	-4.85	7.08	22.72
2.5	2.12	0.59	-6.75	1.54	1.64	5.07	0.88	1.73	1.93	5.38	8.51	6.14
3	7.12	2.67	-11.47	-2.97	2.99	3.07	5.45	3.63	-6.78	17.34	10.03	0.75
5	4.31	-3.70	-0.94	-5.61	-2.94	-5.04	2.40	-2.65	-5.13	3.01	5.07	10.95
10	-15.72	-5.04	1.83	-14.10	-3.42	12.80	-15.53	-3.61	10.03	-12.09	3.70	14.00
15	-8.41	0.62	1.07	-17.37	1.45	18.11	-11.84	1.83	9.08	0.06	8.61	14.41
20	0.88	-5.89	-2.94	-12.57	-4.18	-3.99	-1.32	-4.75	-9.04	4.54	3.39	5.84
30	-0.90	0.81	5.58	2.02	2.02	6.98	1.51	2.66	8.70	1.79	9.42	18.58
40	-10.38	-4.75	-7.04	-15.72	-2.84	10.41	-11.90	-2.56	1.26	-1.49	5.30	3.09
50	2.02	-3.01	-1.72	-9.35	-0.57	0.04	2.55	-0.73	-5.30	10.46	7.10	8.57
60	1.64	0.30	8.12	1.58	1.70	5.14	4.06	2.21	5.52	3.93	9.52	17.15
100	-5.15	-0.50	-4.24	-9.88	0.65	13.46	-6.07	1.26	4.54	4.48	8.69	5.82
120	4.44	-0.40	0.56	-7.39	1.39	2.66	3.23	1.26	-1.92	11.35	8.71	11.66
180	-1.92	-6.75	-2.77	-1.16	-5.06	-4.38	-2.26	-5.14	-2.01	-2.21	1.11	6.47
200	-6.68	-4.31	-12.63	-11.03	-2.79	6.60	-7.67	-2.79	-3.78	4.23	4.60	-2.30

Average	-2.06	-1.43	-0.51	-7.91	-0.27	6.43	-3.01	-0.04	2.22	3.00	7.28	10.92
Minimum	-15.72	-6.75	-12.63	-17.79	-5.06	-5.04	-15.53	-5.14	-9.04	-12.09	1.11	-2.30
Maximum	7.12	9.63	11.30	2.02	9.75	27.27	5.45	9.98	22.26	17.34	17.47	26.05

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	-2.50	1.39	4.77
Minimum	-17.79	-6.75	-12.63
Maximum	17.34	17.47	27.27

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Watt-hour 60 Hz Pulse Output

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μWh/Wh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

Phase A:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	6.28	-1.54	1.67	-18.79	-1.19	10.34	-23.33	-16.00	29.47	-22.72	-6.29	44.45
0.02	1.54	-4.12	-9.08	-0.98	-3.84	-0.49	-9.08	-6.50	2.72	-9.19	2.09	14.61
0.05	-2.60	-2.60	-10.76	-11.43	-1.59	7.01	-8.75	-1.26	0.64	0.15	6.23	8.91

Phase B:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	-1.89	-1.96	14.11	-28.57	-3.70	20.04	-38.56	-16.35	33.39	-51.77	-14.22	73.40
0.02	-13.55	-1.89	9.64	-18.16	-4.40	20.53	-20.82	-3.56	26.05	-20.82	1.54	35.96
0.05	-15.79	-0.03	1.98	-26.07	-0.81	20.98	-22.60	-1.71	13.72	-8.79	5.51	20.98

Phase C:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	10.34	-4.05	-14.11	-5.80	-8.45	12.22	-8.80	-2.17	26.40	0.64	-11.32	28.25
0.02	-11.95	-8.10	-18.51	-2.52	-7.13	-2.66	-8.80	-8.73	-5.66	-7.96	-3.16	-1.71
0.05	4.44	-0.70	-13.44	-8.19	-3.16	-3.49	5.45	-2.38	-15.12	17.23	1.85	-5.84

Total:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	4.89	-2.47	0.60	-17.74	-4.43	14.20	-23.52	-11.50	29.75	-24.62	-10.61	48.70
0.02	-7.96	-4.70	-6.01	-7.22	-5.17	5.82	-12.90	-6.29	7.68	-12.62	0.19	16.29
0.05	-4.65	-1.07	-7.41	-15.23	-1.82	8.17	-8.67	-1.74	-0.25	2.83	4.50	8.08

Average	-2.58	-2.77	-4.28	-13.39	-3.81	9.39	-15.03	-6.52	12.40	-11.47	-1.97	24.34
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Minimum	-15.79	-8.10	-18.51	-28.57	-8.45	-3.49	-38.56	-16.35	-15.12	-51.77	-14.22	-5.84
Maximum	10.34	-0.03	14.11	-0.98	-0.81	20.98	5.45	-1.26	33.39	17.23	6.23	73.40

Overall	Unity PF	0.5 Lag	0.5 Lead
Average	-10.62	-3.77	10.46
Minimum	-51.77	-16.35	-18.51
Maximum	17.23	6.23	73.40

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	Watt-hour	60 Hz	Phase A	Pulse Output
Date.....	16-Oct-26	Uncertainty at Unity.....	12	
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	23	

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μWh/Wh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
Amps												
0.2	-3.01	-4.34	1.12	-2.34	5.83	4.94	-3.72	-3.31	6.84	7.62	5.76	5.29
0.25	7.51	24.63	0.92	7.48	21.12	-8.67	6.33	19.90	-7.33	15.07	35.89	3.28
0.5	-4.98	4.62	-0.65	-4.52	6.06	-11.19	-5.74	3.83	-3.14	2.89	9.55	5.09
1	0.50	-1.68	3.45	1.30	1.94	-0.58	-1.26	-1.40	-4.01	4.98	4.89	2.13
2.5	0.56	-2.61	4.17	1.24	0.98	0.11	-0.47	-2.92	-1.09	7.98	11.78	8.29
3	3.15	11.55	14.92	4.24	11.29	-0.03	2.13	10.99	7.85	11.50	18.12	18.41
5	-3.27	7.45	-11.80	-2.79	16.66	-8.12	-3.83	8.42	-8.98	3.51	13.63	-8.34
10	-3.50	-4.57	-2.31	-1.31	2.47	-5.45	-3.55	-4.16	-6.97	6.35	11.27	0.85
15	-0.47	9.88	6.63	1.65	8.91	-8.47	-0.22	9.08	-4.21	8.58	18.03	11.13
20	-5.45	-0.01	-3.20	-4.79	10.33	-4.38	-5.65	2.07	0.98	3.46	7.32	1.20
30	-0.20	3.82	-8.71	1.97	12.57	-5.41	-1.28	4.94	-8.19	8.53	16.24	-2.91
40	-3.06	2.67	0.52	-1.45	3.99	-11.54	-2.85	5.49	-6.76	5.71	20.37	5.66
50	-4.59	-0.78	-0.15	-2.86	8.20	-3.78	-5.00	1.58	2.37	4.88	7.50	7.19
60	-2.14	-15.03	2.10	-0.63	-4.12	7.12	-2.26	-11.34	8.53	8.52	0.43	8.66
100	-0.55	-2.96	6.93	0.12	-2.89	-4.03	0.99	1.77	3.80	12.89	18.32	16.19
120	0.86	-3.59	9.39	1.05	4.33	6.07	2.59	2.10	13.74	10.92	8.61	17.29
180	-14.65	-31.75	-15.74	-12.12	-20.62	-8.08	-13.15	-22.76	-3.68	-1.48	-10.29	2.24
200	-7.87	-16.43	-1.56	-5.11	-11.93	-10.70	-5.99	-4.46	-0.16	5.48	11.00	12.17
Average	-2.29	-1.06	0.34	-1.05	4.17	-4.01	-2.38	1.10	-0.58	7.08	11.58	6.32
Minimum	-14.65	-31.75	-15.74	-12.12	-20.62	-11.54	-13.15	-22.76	-8.98	-1.48	-10.29	-8.34
Maximum	7.51	24.63	14.92	7.48	21.12	7.12	6.33	19.90	13.74	15.07	35.89	18.41
<u>Overall</u>				Unity PF	0.5 Lag	0.5 Lead						
Average				0.34	3.95	0.52						
Minimum				-14.65	-31.75	-15.74						
Maximum				15.07	35.89	18.41						

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	Watt-hour	60 Hz	Phase B	Pulse Output
Date.....	16-Oct-26	Uncertainty at Unity.....	12	
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	23	

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μWh/Wh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	-0.03	18.03	-20.24	2.77	28.08	-14.85	2.97	13.57	-14.02	12.03	18.61	-15.34
0.25	-0.95	16.95	-16.26	5.54	17.50	-23.78	5.90	17.47	-18.74	13.16	29.33	-8.55
0.5	-5.77	18.82	-24.58	1.39	24.73	-29.40	1.33	23.94	-18.53	7.86	24.98	-17.33
1	-6.25	-14.34	-8.71	-0.64	-5.24	-9.42	-0.41	-8.77	-8.33	9.10	27.15	-23.76
2.5	-7.60	-18.32	-7.35	-2.01	-9.34	-7.95	-0.95	-13.30	-4.62	6.44	-1.61	2.76
3	-7.66	-1.41	-2.91	-0.64	2.70	-13.78	-0.50	2.85	-0.94	5.76	3.76	10.74
5	-1.41	-12.17	-2.06	4.79	4.24	7.95	5.37	-6.30	11.87	10.86	-4.14	10.37
10	-3.26	11.93	-32.85	1.51	19.68	-31.79	1.00	15.92	-28.74	8.87	28.01	-20.38
15	1.95	27.01	-14.23	7.81	27.52	-25.53	7.27	28.80	-17.62	13.85	34.19	-9.05
20	-4.84	-6.57	-6.97	-0.38	7.08	-1.72	-0.63	-3.03	5.19	6.94	-2.97	7.46
30	1.67	-0.48	-6.64	6.87	8.38	0.82	4.37	0.19	-2.33	12.02	6.88	0.34
40	4.77	31.95	-15.13	8.19	30.67	-26.97	7.80	31.41	-20.34	13.94	40.90	-6.45
50	5.17	28.97	-10.25	8.86	37.16	-14.56	7.84	28.17	-7.50	16.04	26.93	-4.69
60	9.37	14.73	-5.44	12.07	23.70	-0.49	11.20	11.86	-0.17	19.64	19.18	-3.04
100	6.12	25.33	-4.37	7.57	22.42	-21.28	8.56	23.69	-11.90	18.10	35.26	-0.91
120	9.36	26.58	1.90	11.15	31.14	-4.97	11.56	23.22	3.02	16.70	23.83	2.13
180	7.96	0.52	8.62	9.70	2.93	10.53	6.86	-4.73	9.14	15.48	1.98	12.38
200	10.71	16.06	23.46	12.20	6.93	3.15	9.30	9.35	11.31	18.59	19.25	22.52
Average	1.07	10.20	-8.00	5.38	15.57	-11.34	4.94	10.79	-6.29	12.52	18.42	-2.27
Minimum	-7.66	-18.32	-32.85	-2.01	-9.34	-31.79	-0.95	-13.30	-28.74	5.76	-4.14	-23.76
Maximum	10.71	31.95	23.46	12.20	37.16	10.53	11.56	31.41	11.87	19.64	40.90	22.52
Overall				Unity PF	0.5 Lag	0.5 Lead						
Average				5.98	13.75	-6.97						
Minimum				-7.66	-18.32	-32.85						
Maximum				19.64	40.90	23.46						

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	Watt-hour	60 Hz	Phase C	Pulse Output
Date.....	16-Oct-26	Uncertainty at Unity.....	12	
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	23	

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μWh/Wh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.2	-6.11	7.79	-34.98	-7.72	9.88	-19.15	-9.30	-10.33	-14.73	-1.04	-1.55	-14.40
0.25	-6.62	25.62	-18.18	-6.96	12.24	-34.87	-7.88	4.15	-16.01	-1.61	10.01	-0.48
0.5	-5.19	21.09	-24.99	-4.41	24.39	-21.68	-5.70	7.28	-2.51	1.16	0.79	-2.21
1	-1.13	12.18	-6.61	-1.44	2.74	-20.27	-3.12	-2.97	-4.79	-2.76	0.70	-17.54
2.5	-1.87	10.58	-7.02	-2.55	1.22	-20.02	-3.30	-5.25	-3.49	2.57	2.03	14.11
3	-2.22	18.70	-5.85	-2.50	17.21	-10.90	-4.06	2.21	7.23	2.04	-4.56	14.66
5	-2.89	15.04	-35.84	-4.54	20.08	-18.77	-4.44	-0.27	-15.03	0.72	5.18	-15.50
10	-11.98	-1.14	-14.78	-11.88	-10.25	-25.42	-12.20	-17.97	-11.53	-5.85	-6.99	5.99
15	-3.59	10.67	-4.06	-3.79	5.78	-11.06	-4.17	-3.63	8.28	0.68	-7.65	18.58
20	-10.63	-6.53	-28.12	-11.00	4.61	-8.93	-10.37	-18.47	0.93	-4.49	-18.45	-3.26
30	-3.55	6.06	-23.22	-2.64	0.98	-21.37	-4.53	-8.43	-13.09	2.17	1.99	-1.75
40	-2.92	16.55	-7.28	-2.23	11.20	-20.39	-2.26	3.71	1.09	2.80	5.30	15.60
50	-4.18	0.04	-18.36	-2.72	11.60	-2.07	-2.55	-11.72	9.80	4.29	-13.35	6.78
60	-0.06	-9.22	-7.25	1.09	-9.33	1.11	0.80	-20.91	10.39	9.08	-9.30	17.38
100	8.89	24.99	5.19	9.17	18.81	-7.57	10.94	16.54	18.38	19.39	20.76	30.97
120	6.03	8.82	-10.21	7.82	19.43	6.36	9.41	1.95	22.90	15.02	1.60	18.94
180	-7.39	-2.56	-35.42	-3.66	-1.90	-26.22	-3.45	-3.27	-11.33	5.64	7.00	-0.16
200	-11.24	9.40	-28.98	-7.40	6.93	-35.35	-6.50	9.33	-5.95	1.93	13.28	7.02
Average	-3.70	9.34	-17.00	-3.19	8.09	-16.48	-3.48	-3.23	-1.08	2.88	0.38	5.26
Minimum	-11.98	-9.22	-35.84	-11.88	-10.25	-35.35	-12.20	-20.91	-16.01	-5.85	-18.45	-17.54
Maximum	8.89	25.62	5.19	9.17	24.39	6.36	10.94	16.54	22.90	19.39	20.76	30.97
<u>Overall</u>				Unity PF	0.5 Lag	0.5 Lead						
Average				-1.87	3.64	-7.32						
Minimum				-12.20	-20.91	-35.84						
Maximum				19.39	25.62	30.97						

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Watt-hour 60 Hz Pulse Output

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as µWh/Wh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

Phase A:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	26.44	48.29	7.04	29.84	67.20	16.64	30.44	52.91	14.91	36.95	81.86	15.31
0.02	10.05	20.08	0.52	15.67	42.50	3.20	13.32	33.23	-0.62	24.76	65.66	-1.40
0.05	12.94	27.97	20.11	19.03	37.17	6.54	15.88	39.00	10.88	27.40	60.99	21.85

Phase B:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	26.53	79.33	-18.89	23.42	85.19	22.84	16.56	42.26	-2.71	30.39	70.44	-8.67
0.02	6.34	36.34	-11.82	6.54	45.85	-22.32	2.71	39.00	-25.99	18.43	60.24	-12.65
0.05	15.27	47.06	13.54	14.91	52.73	-7.98	11.95	49.76	-4.14	24.58	62.10	13.92

Phase C:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	34.84	34.62	47.26	27.13	50.15	45.33	32.51	40.82	45.41	37.88	37.32	43.77
0.02	2.91	11.97	20.19	10.00	13.98	9.61	8.82	16.64	16.26	18.19	24.01	19.14
0.05	18.27	28.33	33.43	22.51	38.34	29.90	20.72	24.44	38.18	30.03	28.54	44.66

Average	17.07	37.11	12.38	18.78	48.12	11.53	16.99	37.56	10.24	27.62	54.57	15.10
Minimum	2.91	11.97	-18.89	6.54	13.98	-22.32	2.71	16.64	-25.99	18.19	24.01	-12.65
Maximum	34.84	79.33	47.26	29.84	85.19	45.33	32.51	52.91	45.41	37.88	81.86	44.66

<u>Overall</u>	Unity PF	0.5 Lag	0.5 Lead
Average	20.12	44.34	12.31
Minimum	2.71	11.97	-25.99
Maximum	37.88	85.19	47.26

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR 60 Hz Phase A Pulse Output

Date..... 16-Oct-26 Uncertainty 23

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VARh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VARh/VARh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.2	6.50	-0.06	1.53	-13.90	-1.91	-3.94	12.23	-1.51
0.25	18.93	-5.91	13.34	-4.70	7.90	-11.44	22.15	2.30
0.5	7.41	-6.70	0.12	-13.83	-4.55	-14.95	11.03	0.65
1	4.12	3.87	-1.30	-13.36	-3.87	-2.67	10.37	-4.58
2.5	4.85	-4.48	-0.52	-6.02	-4.02	-6.58	9.77	4.81
3	13.43	0.87	9.28	0.98	5.44	-6.06	16.37	13.22
5	6.99	-8.11	1.54	-24.21	-2.35	-16.02	11.43	-10.53
10	6.27	-4.55	1.30	-8.39	-1.25	-4.97	10.75	-0.05
15	9.65	-5.87	5.58	-5.13	1.62	-11.73	15.47	8.49
20	3.14	-5.76	-0.90	-20.74	-3.95	-10.32	7.54	-4.16
30	11.31	-2.64	8.08	-12.82	4.63	-4.85	18.34	-3.02
40	8.27	-11.96	6.25	-7.34	1.60	-10.12	14.43	7.03
50	6.90	-3.83	3.57	-13.46	0.75	-9.68	12.08	3.02
60	-2.40	-2.82	-5.13	-15.76	-8.34	-0.18	7.13	-0.92
100	-0.27	-15.87	-3.65	-12.80	-5.18	-11.39	9.25	7.74
120	-1.31	-6.65	-6.10	-20.44	-5.29	-8.52	6.65	3.02
180	-16.26	-20.58	-18.39	-33.26	-20.26	-9.36	-5.03	-6.37
200	-8.29	-25.61	-9.60	-18.97	-10.66	-11.97	3.47	8.51
Average	4.40	-7.04	0.28	-13.56	-2.76	-8.60	10.75	1.54
Minimum	-16.26	-25.61	-18.39	-33.26	-20.26	-16.02	-5.03	-10.53
Maximum	18.93	3.87	13.34	0.98	7.90	-0.18	22.15	13.22

<u>Overall</u>	90°Lag	30°Lag
Average	3.17	-6.92
Minimum	-20.26	-33.26
Maximum	22.15	13.22

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR 60 Hz Phase B Pulse Output

Date..... 16-Oct-26 Uncertainty 23

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VARh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VARh/VARh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.2	16.65	-7.01	11.14	-19.71	11.07	-6.86	22.16	-8.11
0.25	24.80	-3.15	14.18	0.37	14.70	-6.84	23.74	5.51
0.5	20.87	-5.93	15.44	-14.13	10.26	-13.79	23.73	0.40
1	17.22	-13.32	11.49	-29.43	9.54	-18.33	21.40	-22.70
2.5	12.14	7.92	6.96	6.67	4.15	5.98	14.56	16.48
3	17.08	5.67	12.57	4.05	8.65	-1.36	18.46	16.95
5	22.37	27.98	17.82	7.35	14.51	20.77	25.82	22.71
10	17.42	-12.80	13.62	-15.66	10.52	-11.63	21.22	-7.35
15	24.63	-5.83	21.38	-4.02	17.66	-9.88	28.67	9.79
20	15.03	11.06	11.81	-3.43	9.52	9.76	19.23	11.98
30	23.65	17.86	20.11	8.75	18.10	16.85	29.35	17.50
40	23.72	-16.43	22.44	-8.91	19.62	-11.66	29.25	7.58
50	23.55	-2.54	22.39	-12.17	19.70	-6.23	28.27	5.75
60	15.66	0.91	13.29	-11.95	10.95	7.16	23.96	3.40
100	12.23	-18.11	9.25	-14.47	8.59	-13.30	21.28	5.10
120	11.81	-5.88	8.18	-21.46	9.16	-7.93	19.86	-0.70
180	9.48	8.95	7.21	-5.95	5.76	17.81	17.55	16.33
200	11.60	-4.09	9.86	2.71	8.32	6.22	20.61	27.89

Average	17.77	-0.82	13.84	-7.30	11.71	-1.29	22.73	7.14
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Minimum	9.48	-18.11	6.96	-29.43	4.15	-18.33	14.56	-22.70
Maximum	24.80	27.98	22.44	8.75	19.70	20.77	29.35	27.89

<u>Overall</u>	90°Lag	30°Lag
Average	16.51	-0.57
Minimum	4.15	-29.43
Maximum	29.35	27.98

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR 60 Hz Phase C Pulse Output

Date..... 16-Oct-26 Uncertainty 23

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VARh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VARh/VARh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.2	13.42	-4.85	2.97	-19.99	-1.04	32.29	15.89	-10.20
0.25	13.73	-17.70	4.65	-11.06	-1.30	15.27	17.32	4.72
0.5	12.89	-10.00	2.85	-27.12	-1.86	26.13	19.25	-8.80
1	7.10	-12.87	-1.97	-23.24	-4.58	21.22	14.67	-14.17
2.5	8.96	-14.07	1.23	-2.64	-3.49	16.75	18.28	15.33
3	15.70	0.56	6.91	-10.76	1.69	19.44	24.88	8.58
5	15.36	-8.22	4.93	-25.64	2.08	14.01	23.63	-11.50
10	6.49	-12.34	-2.98	-3.80	-6.10	5.99	20.28	10.16
15	12.96	1.03	5.38	-7.26	0.45	-1.39	11.85	18.82
20	8.14	1.30	-0.21	-19.41	-4.40	5.29	3.04	-5.14
30	18.89	-1.93	9.50	-1.33	6.03	2.50	14.94	12.61
40	19.88	-2.02	11.53	-2.79	6.34	-1.97	15.13	18.91
50	20.36	18.73	10.81	-9.09	7.28	13.08	14.86	10.65
60	14.31	15.42	3.75	5.46	-0.57	21.78	10.04	19.20
100	22.24	-3.19	11.78	-3.14	7.92	-1.23	19.91	21.73
120	18.90	13.48	6.59	-17.02	4.13	9.02	14.48	6.84
180	13.58	-6.12	0.48	-20.48	-5.28	-2.00	5.02	2.09
200	10.97	-12.18	-1.19	-21.26	-7.12	-20.96	3.86	5.16
Average	14.10	-3.05	4.28	-12.25	0.01	9.73	14.85	5.83
Minimum	6.49	-17.70	-2.98	-27.12	-7.12	-20.96	3.04	-14.17
Maximum	22.24	18.73	11.78	5.46	7.92	32.29	24.88	21.73

<u>Overall</u>	90°Lag	30°Lag
Average	8.31	0.07
Minimum	-7.12	-27.12
Maximum	24.88	32.29

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... VAR-hour 60 Hz Pulse Output

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAR calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μ VARh/VARh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NC SL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

Phase A:

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.005	-0.40	-45.92	4.66	-28.91	-4.61	-40.68	5.69	-74.15
0.02	-4.07	-25.43	-1.03	-20.85	-0.63	-19.79	7.74	-23.20
0.05	-1.86	-14.01	4.20	-4.64	3.60	-9.89	17.32	2.39

Phase B:

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.005	14.47	-19.92	-1.88	-54.47	-16.55	-74.85	-7.90	-72.99
0.02	-8.11	-32.53	-8.59	-38.70	-16.01	-50.06	2.75	-42.09
0.05	3.32	-14.11	2.58	-17.44	-3.20	-31.06	13.82	-10.22

Phase C:

	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
Amps								
0.005	26.10	12.39	6.19	7.94	-2.35	-3.11	6.92	-27.62
0.02	-3.75	-12.63	-1.28	6.69	-4.79	-9.23	4.22	-4.06
0.05	9.32	12.42	10.21	9.22	9.68	13.53	18.64	21.46

Average	3.89	-15.53	1.67	-15.68	-3.87	-25.02	7.69	-25.61
Minimum	-8.11	-45.92	-8.59	-54.47	-16.55	-74.85	-7.90	-74.15
Maximum	26.10	12.42	10.21	9.22	9.68	13.53	18.64	21.46

<u>Overall</u>	90°Lag	30°Lag
Average	2.35	-20.46
Minimum	-16.55	-74.85
Maximum	26.10	21.46

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	VA-hour	60 Hz	Phase A	Pulse Output
Date.....	16-Oct-26	Uncertainty at Unity.....	13	
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	23	

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVAh/VAh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	-6.25	15.50	-28.66	-16.27	0.43	-28.97	-16.29	-6.74	-27.69	-6.87	9.47	-19.94
0.25	4.29	26.90	-22.98	-7.20	8.13	-21.36	-6.96	0.59	-20.01	1.97	17.47	-11.15
0.5	-8.43	17.73	-33.29	-20.63	-0.52	-32.63	-21.25	-8.87	-30.99	-12.39	7.29	-22.96
1	-4.36	8.95	-29.69	-17.62	-7.94	-31.65	-18.58	-14.51	-35.72	-8.28	2.26	-23.31
2.5	-1.57	9.89	-20.15	-12.42	-4.34	-20.66	-13.55	-13.10	-22.13	-3.50	4.65	-12.00
3	1.97	25.92	-22.99	-10.57	7.99	-23.61	-10.10	1.04	-23.93	-3.89	14.59	-15.49
5	-6.98	13.92	-34.47	-19.59	-4.57	-36.67	-19.65	-10.83	-35.39	-9.93	4.40	-28.79
10	-5.49	14.38	-28.78	-15.17	-0.56	-27.89	-15.96	-8.02	-28.38	-7.70	8.28	-21.73
15	-2.60	19.10	-27.47	-13.57	3.33	-28.01	-13.46	-3.26	-28.22	-5.37	11.84	-15.97
20	-9.16	10.83	-31.74	-14.86	-1.48	-27.90	-15.31	-7.54	-28.52	-6.03	7.69	-22.87
30	-3.52	23.10	-30.25	-11.69	10.79	-27.73	-12.53	3.54	-29.65	-2.57	19.11	-15.55
40	-5.78	18.28	-29.33	-8.14	11.89	-19.76	-5.80	4.34	-22.63	0.60	21.38	-18.95
50	-7.58	20.71	-29.12	-11.78	12.90	-22.15	-10.76	5.53	-25.02	-2.81	18.77	-14.21
60	-5.25	7.38	-11.88	-9.52	-1.37	-6.16	-9.77	-7.60	-8.13	0.16	9.23	-0.02
100	-3.71	7.61	-5.96	-3.26	1.62	3.55	-0.64	-1.06	2.12	7.73	16.00	8.64
120	-2.49	5.63	-1.16	-7.47	-3.70	3.47	-4.09	-5.92	2.55	3.42	9.10	7.06
180	-16.78	-9.18	-11.03	-8.27	-4.40	6.24	-7.62	-8.65	0.35	1.75	8.54	7.16
200	-11.26	-0.66	-4.26	-3.72	2.61	12.18	-1.92	-0.05	3.52	6.93	15.21	8.72
Average	-5.27	13.11	-22.40	-11.76	1.71	-18.32	-11.35	-4.51	-19.88	-2.60	11.40	-11.74
Minimum	-16.78	-9.18	-34.47	-20.63	-7.94	-36.67	-21.25	-14.51	-35.72	-12.39	2.26	-28.79
Maximum	4.29	26.90	-1.16	-3.26	12.90	12.18	-0.64	5.53	3.52	7.73	21.38	8.72
				Overall	Unity PF	0.5 Lag	0.5 Lead					
				Average	-7.75	5.43	-18.09					
				Minimum	-21.25	-14.51	-36.67					
				Maximum	7.73	26.90	12.18					

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	VA-hour	60 Hz	Phase B	Pulse Output
Date.....	16-Oct-26	Uncertainty at Unity.....	13	
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	23	

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVAh/VAh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	4.68	26.83	-20.53	-13.74	4.20	-26.04	-13.35	-2.94	-24.58	-8.80	9.91	-21.80
0.25	2.94	30.31	-23.15	-12.19	8.14	-25.52	-10.64	-0.99	-20.99	-5.53	12.39	-17.05
0.5	-1.42	30.23	-27.42	-15.35	9.80	-26.31	-13.98	1.25	-22.52	-8.98	14.96	-20.27
1	-0.17	19.19	-22.04	-14.79	-1.75	-24.26	-14.85	-6.97	-26.07	-8.69	5.20	-16.75
2.5	-2.97	15.48	-21.82	-16.24	-4.04	-21.53	-15.38	-11.78	-20.26	-10.00	2.15	-17.01
3	-2.26	27.05	-25.05	-17.26	5.62	-26.06	-15.73	-1.05	-25.29	-13.22	7.90	-21.34
5	1.99	28.34	-25.14	-10.66	8.55	-24.75	-9.45	2.09	-22.22	-4.19	15.59	-19.85
10	0.57	23.67	-22.43	-15.09	3.15	-25.15	-14.43	-3.72	-23.67	-9.53	9.97	-21.48
15	5.41	32.99	-21.72	-11.17	10.22	-25.33	-10.53	4.43	-23.44	-5.82	15.77	-16.97
20	-1.05	21.07	-24.29	-16.37	0.87	-26.24	-14.66	-3.91	-24.80	-10.44	7.50	-23.30
30	4.88	34.97	-22.94	-12.12	13.08	-27.55	-12.03	7.13	-27.53	-7.62	17.69	-19.56
40	7.81	32.80	-17.39	-6.23	15.50	-17.18	-5.04	8.84	-18.86	-1.51	21.82	-17.91
50	8.55	38.74	-15.29	-7.96	19.23	-18.61	-7.19	12.11	-19.67	-5.55	20.79	-14.85
60	11.98	26.49	1.94	-5.73	5.01	-2.32	-5.41	-0.02	-2.04	-1.02	11.01	-0.06
100	8.89	22.40	1.80	-9.06	-1.06	-4.42	-7.49	-3.93	-4.02	-3.51	6.28	-2.95
120	10.60	22.17	5.89	-8.64	-3.30	-0.08	-6.63	-5.16	1.28	-2.80	4.56	0.32
180	11.22	20.99	7.98	-7.28	-0.79	4.40	-7.76	-5.59	-0.63	-2.66	6.36	2.11
200	13.13	24.31	9.53	-3.25	5.35	8.65	-4.09	2.27	1.31	1.35	12.50	2.59
Average	4.71	26.56	-14.56	-11.28	5.43	-17.13	-10.48	-0.44	-16.89	-6.03	11.24	-13.67
Minimum	-2.97	15.48	-27.42	-17.26	-4.04	-27.55	-15.73	-11.78	-27.53	-13.22	2.15	-23.30
Maximum	13.13	38.74	9.53	-3.25	19.23	8.65	-4.09	12.11	1.31	1.35	21.82	2.59
<u>Overall</u>				Unity PF	0.5 Lag	0.5 Lead						
Average				-5.77	10.70	-15.56						
Minimum				-17.26	-11.78	-27.55						
Maximum				13.13	38.74	9.53						

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....	VA-hour	60 Hz	Phase C	Pulse Output
Date.....	16-Oct-26	Uncertainty at Unity.....	13	
Serial Number.....	XXXXXX	Uncertainty at 60° Phase Angle....	23	

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVAh/VAh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. Results are accredited to ISO/IEC 17025:2017.

Voltage & Phase Angle

Amps	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
0.2	-2.84	21.82	-35.70	-6.41	11.17	-23.73	-8.78	3.11	-20.80	1.34	21.21	-12.60
0.25	-4.91	20.54	-31.64	-6.33	12.33	-21.00	-8.20	2.02	-19.09	2.49	20.53	-9.22
0.5	-1.85	24.07	-28.38	-4.05	15.23	-15.52	-5.74	7.43	-14.56	3.97	24.94	-7.35
1	-5.00	10.38	-31.03	-7.10	3.52	-20.38	-8.62	-2.69	-25.00	1.69	15.13	-9.61
2.5	1.56	15.15	-19.83	-3.49	5.54	-11.52	-5.69	-4.19	-13.69	3.82	14.65	-3.24
3	1.79	26.96	-25.18	-4.03	16.56	-15.77	-4.42	9.11	-16.29	1.91	22.28	-8.65
5	-0.29	21.44	-30.93	-2.33	13.29	-19.48	-2.20	6.89	-16.61	7.72	24.46	-9.76
10	-8.61	13.44	-35.12	-9.64	7.53	-22.53	-11.15	-1.79	-23.52	-1.24	17.39	-13.71
15	-2.71	21.19	-30.37	-3.74	15.22	-19.09	-5.11	6.76	-19.23	3.43	22.71	-8.17
20	-9.58	13.48	-36.56	-8.79	8.02	-22.40	-9.56	0.01	-22.11	0.91	16.81	-15.24
30	-2.71	28.07	-34.23	-3.15	22.93	-20.72	-5.67	12.59	-24.27	5.09	28.20	-9.30
40	-3.09	27.42	-31.15	0.97	25.33	-13.79	1.77	15.39	-15.99	9.79	33.03	-10.78
50	-3.00	32.45	-31.43	-1.16	27.13	-16.34	-2.17	17.88	-17.56	6.48	32.39	-5.98
60	0.18	22.05	-16.07	1.54	14.78	-0.60	0.45	5.93	-0.46	10.83	23.76	8.83
100	8.90	27.90	-0.13	12.17	21.09	15.02	13.47	16.01	14.83	22.32	32.49	21.42
120	5.67	24.01	-1.32	8.43	16.09	13.57	10.04	10.59	15.30	17.96	25.61	20.09
180	-5.69	16.53	-12.91	1.35	13.69	8.19	0.99	4.53	5.26	11.07	22.54	13.66
200	-11.42	16.65	-18.67	-1.67	14.01	4.60	-2.50	6.01	-1.41	7.10	21.01	6.32
Average	-2.42	21.31	-25.04	-2.08	14.64	-11.19	-2.95	6.42	-11.96	6.48	23.28	-2.96
Minimum	-11.42	10.38	-36.56	-9.64	3.52	-23.73	-11.15	-4.19	-25.00	-1.24	14.65	-15.24
Maximum	8.90	32.45	-0.13	12.17	27.13	15.02	13.47	17.88	15.30	22.32	33.03	21.42
Overall Unity PF0.5 Lag0.5 Lead Average-0.2416.41-12.79 Minimum-11.42-4.19-36.56 Maximum22.3233.0321.42												

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function.....VA-hour RMS 60 Hz Pulse Output

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as μVAh/VAh. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Phase Angle

Phase A:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	21.88	18.01	20.57	39.24	36.53	48.02	48.00	22.96	42.16	38.58	43.51	46.17
0.02	4.99	-2.31	3.38	1.97	-3.30	3.62	10.12	-0.44	9.71	19.85	8.72	19.03
0.05	8.68	2.38	7.06	2.64	-0.88	0.25	1.32	-1.28	2.53	16.33	13.71	16.29

Phase B:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	27.96	20.78	21.97	-12.76	-3.14	40.14	-11.90	-27.86	35.29	-2.59	3.90	23.84
0.02	9.46	1.04	5.88	-13.51	-21.16	-16.85	-8.04	-17.70	-18.65	4.81	-12.40	7.49
0.05	18.56	11.82	13.08	-2.45	-8.30	-4.60	-6.00	-12.72	-9.30	10.10	0.99	5.49

Phase C:

	120	120	120	240	240	240	480	480	480	600	600	600
	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead	Unity PF	0.5 Lag	0.5 Lead
Amps												
0.005	28.65	25.89	34.47	22.94	16.88	35.35	22.25	8.66	33.59	38.43	29.71	53.17
0.02	7.02	-0.63	5.20	13.51	5.13	12.16	7.00	4.41	10.36	21.04	16.30	24.05
0.05	19.31	11.46	16.17	20.85	14.95	19.54	19.81	14.12	16.40	34.43	27.44	31.45

Average	16.28	9.83	14.20	8.05	4.08	15.29	9.17	-1.09	13.57	20.11	14.65	25.22
Minimum	4.99	-2.31	3.38	-13.51	-21.16	-16.85	-11.90	-27.86	-18.65	-2.59	-12.40	5.49
Maximum	28.65	25.89	34.47	39.24	36.53	48.02	48.00	22.96	42.16	38.58	43.51	53.17

<u>Overall</u>	Unity PF	0.5 Lag	0.5 Lead
Average	13.40	6.87	17.07
Minimum	-13.51	-27.86	-18.65
Maximum	48.00	43.51	53.17

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Volts RMS 60 Hz Phase A

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Volt calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as $\mu\text{V/V}$. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the Instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage

	V RMS	Vh RMS	V2h RMS
60	3.29	3.41	6.79
80	2.06	2.13	4.17
100	-1.98	-1.93	-3.90
120	-1.49	-1.51	-3.11
140	-0.87	-0.82	-1.56
160	2.19	2.13	4.24
180	-0.19	-0.20	-0.33
200	-1.60	-1.60	-3.21
220	-1.72	-1.70	-3.51
240	-0.66	-0.61	-1.32
260	0.49	0.41	0.84
280	0.61	0.71	1.42
300	1.57	1.60	3.12
320	-0.72	-0.72	-1.46
340	-2.05	-1.91	-3.91
360	-2.88	-2.81	-5.63
380	-3.29	-3.34	-6.65
400	-3.52	-3.27	-6.56
420	-2.94	-2.83	-5.65
440	-2.76	-2.74	-5.49
460	-2.68	-2.59	-5.19
480	-1.87	-1.73	-3.59
500	-1.01	-0.94	-1.87
520	-0.07	0.00	-0.08
540	0.72	0.67	1.19
560	1.90	1.86	3.70
580	4.74	4.73	9.39
600	6.12	6.16	12.20
Average	-0.31	-0.27	-0.57
Minimum	-3.52	-3.34	-6.65
Maximum	6.12	6.16	12.20

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Volts RMS 60 Hz Phase B

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Volt calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as $\mu\text{V/V}$. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the Instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage

	V RMS	Vh RMS	V2h RMS
60	1.67	1.85	3.57
80	7.63	7.57	15.10
100	1.79	1.89	3.65
120	0.22	0.17	0.35
140	6.65	6.65	13.24
160	3.20	3.22	6.32
180	0.36	0.39	0.73
200	2.93	3.03	5.97
220	1.72	1.84	3.58
240	1.49	1.51	3.09
260	4.06	4.33	8.56
280	3.79	3.87	7.64
300	3.76	3.84	7.54
320	2.65	2.71	5.44
340	0.34	0.38	0.72
360	-0.54	-0.35	-0.75
380	-1.62	-1.64	-3.32
400	-0.21	-0.12	-0.21
420	-0.62	-0.60	-1.22
440	-0.76	-0.72	-1.45
460	1.27	1.26	2.40
480	0.89	0.95	1.78
500	1.28	1.42	2.75
520	3.78	3.81	7.54
540	4.02	4.04	7.97
560	5.08	5.21	10.35
580	7.60	7.69	15.35
600	9.30	9.29	18.61
Average	2.56	2.62	5.19
Minimum	-1.62	-1.64	-3.32
Maximum	9.30	9.29	18.61

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Volts RMS 60 Hz Phase C

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Volt calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as $\mu\text{V/V}$. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the Instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage

	V RMS	Vh RMS	V2h RMS
60	9.28	9.33	18.71
80	3.49	3.55	6.99
100	-0.84	-0.79	-1.67
120	-1.25	-1.17	-2.39
140	-4.80	-4.75	-9.44
160	3.47	3.55	7.05
180	1.19	1.21	2.32
200	-1.72	-1.80	-3.56
220	-2.12	-2.19	-4.36
240	-1.27	-1.17	-2.51
260	-2.93	-2.89	-5.87
280	-2.07	-1.97	-3.92
300	-1.10	-1.08	-2.22
320	1.41	1.45	2.90
340	0.18	0.22	0.37
360	0.14	0.17	0.31
380	-0.66	-0.65	-1.32
400	-1.30	-1.33	-2.61
420	-1.47	-1.43	-2.93
440	-0.98	-0.91	-1.88
460	-2.00	-1.89	-3.83
480	-1.36	-1.28	-2.63
500	-0.83	-0.83	-1.65
520	-0.85	-0.83	-1.70
540	0.05	0.17	0.25
560	1.46	1.48	3.00
580	2.13	2.14	4.24
600	3.70	3.75	7.47
Average	-0.04	0.00	-0.03
Minimum	-4.80	-4.75	-9.44
Maximum	9.28	9.33	18.71

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Amps RMS 60 Hz Phase A

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Amp calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as $\mu\text{A/A}$. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the Instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Amps

	A RMS	Ah RMS	A2h RMS
0.2	0.93	1.01	1.99
0.25	15.63	15.62	31.29
0.5	-1.41	-1.06	-2.15
1	3.61	3.46	6.90
2.5	5.14	5.29	10.63
3	8.49	8.46	16.96
5	0.17	0.26	0.54
10	-1.68	-1.62	-3.32
15	1.84	2.03	4.02
20	-2.58	-2.42	-4.93
30	3.20	3.19	6.41
40	-0.73	-0.61	-1.28
50	1.13	1.08	2.17
60	3.17	3.28	6.41
100	0.59	0.54	1.01
120	2.18	2.30	4.60
180	-8.47	-7.78	-15.57
200	-2.07	-1.92	-3.94

Average	1.62	1.73	3.43
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Minimum	-8.47	-7.78	-15.57
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Maximum	15.63	15.62	31.29
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Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Amps RMS 60 Hz Phase B

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Amp calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as $\mu A/A$. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the Instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Amps

	A RMS	Ah RMS	A2h RMS
0.2	-0.55	-0.56	-1.15
0.25	10.34	10.42	20.73
0.5	-0.45	-0.56	-1.06
1	0.49	0.61	1.20
2.5	-2.06	-2.09	-4.29
3	-0.89	-0.81	-1.67
5	-1.96	-1.88	-3.86
10	-1.99	-1.88	-3.86
15	2.43	2.47	4.88
20	-2.43	-2.29	-4.71
30	3.02	3.19	6.41
40	-1.09	-1.01	-2.03
50	0.86	0.97	1.97
60	3.14	3.19	6.41
100	0.32	0.44	0.73
120	0.65	0.69	1.35
180	-2.80	-2.65	-5.31
200	1.28	1.29	2.52

Average	0.46	0.53	1.01
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Minimum	-2.80	-2.65	-5.31
Maximum	10.34	10.42	20.73

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Amps RMS 60 Hz Phase C

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Amp calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as $\mu A/A$. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the Instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Amps

	A RMS	Ah RMS	A2h RMS
0.2	-1.23	-1.08	-2.33
0.25	4.86	4.89	9.83
0.5	0.09	0.19	0.28
1	-2.22	-2.15	-4.33
2.5	2.94	3.01	6.01
3	3.17	3.21	6.38
5	-1.84	-1.75	-3.64
10	-4.27	-4.23	-8.58
15	2.36	2.38	4.79
20	-2.46	-2.42	-4.93
30	3.19	3.28	6.50
40	-1.47	-1.48	-3.00
50	0.52	0.54	1.07
60	3.28	3.37	6.69
100	8.74	8.70	17.42
120	5.93	6.05	12.03
180	-1.55	-1.46	-2.94
200	-1.54	-1.60	-3.32

Average	1.03	1.08	2.11
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Minimum	-4.27	-4.23	-8.58
Maximum	8.74	8.70	17.42

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Amps RMS 60 Hz

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Amp calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as $\mu\text{A/A}$. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the Instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Phase A:

Amps

	A RMS	Ah RMS	A2h RMS
0.005	0.51	-0.04	-0.16
0.02	-1.18	-1.22	-2.51
0.05	0.16	0.38	0.75

Phase B:

Amps

	A RMS	Ah RMS	A2h RMS
0.005	5.45	5.73	11.41
0.02	-0.71	-0.56	-1.08
0.05	-1.60	-1.61	-3.25

Phase C:

Amps

	A RMS	Ah RMS	A2h RMS
0.005	7.91	8.74	17.44
0.02	-5.08	-5.14	-10.28
0.05	-0.20	-0.14	-0.30

Average	0.58	0.68	1.34
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Minimum	-5.08	-5.14	-10.28
Maximum	7.91	8.74	17.44

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Mode..... Frequency Phase A

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 time base calibration is derived directly from a Keysight Technologies 53220A Universal Counter/Timer, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as Hz/MHz. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the Instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Frequency

45	-0.12
46	-0.03
47	-0.07
48	-0.11
49	-0.07
50	-0.08
51	-0.06
52	-0.05
53	-0.06
54	-0.05
55	-0.04
56	-0.09
57	-0.12
58	-0.04
59	-0.08
60	-0.10
61	-0.08
62	-0.06
63	-0.10
64	-0.12
65	-0.12
Average	-0.08
Minimum	-0.12
Maximum	-0.03

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Mode..... Frequency Phase B

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 time base calibration is derived directly from a Keysight Technologies 53220A Universal Counter/Timer, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as Hz/MHz. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the Instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Frequency

45	-0.11
46	-0.03
47	-0.07
48	-0.11
49	-0.07
50	-0.08
51	-0.06
52	-0.05
53	-0.06
54	-0.05
55	-0.04
56	-0.11
57	-0.12
58	-0.04
59	-0.11
60	-0.08
61	-0.06
62	-0.06
63	-0.08
64	-0.12
65	-0.12
Average	-0.08
Minimum	-0.12
Maximum	-0.03

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Mode..... Frequency Phase C

Date..... 16-Oct-26

Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 time base calibration is derived directly from a Keysight Technologies 53220A Universal Counter/Timer, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as Hz/MHz. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the Instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Frequency

45	-0.14
46	-0.03
47	-0.07
48	-0.11
49	-0.07
50	-0.08
51	-0.06
52	-0.05
53	-0.06
54	-0.05
55	-0.04
56	-0.11
57	-0.13
58	-0.04
59	-0.08
60	-0.10
61	-0.08
62	-0.06
63	-0.08
64	-0.12
65	-0.12
Average	-0.08
Minimum	-0.14
Maximum	-0.03

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Phase 60 Hz Phase A
Date..... 16-Oct-26
Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 phase calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). The test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as μ rad/rad. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Current

	120 1	120 5	120 15	120 30	120 50	240 1	240 5	240 15	240 30	240 50	480 1	480 5	480 15	480 30	480 50
Phase															
-180	-0.60	0.89	0.31	0.47	-0.81	0.92	1.55	1.61	1.21	0.11	0.59	1.26	1.47	0.94	0.35
-150	-0.46	1.00	0.25	0.50	-0.85	1.04	1.55	1.32	1.14	0.19	0.55	1.22	1.29	0.89	0.13
-120	0.05	0.93	0.79	0.50	-0.53	0.92	1.59	1.46	1.21	0.31	0.63	1.49	1.41	0.88	0.19
-90	0.69	1.03	1.45	0.58	0.24	1.22	1.85	1.98	1.20	0.83	0.89	1.99	1.62	1.57	0.54
-60	0.87	1.13	1.65	1.62	0.95	1.51	2.50	2.25	1.61	1.43	1.20	2.24	1.93	1.86	1.22
-30	0.32	1.28	1.25	1.28	0.38	1.41	2.07	2.18	1.90	1.23	1.16	1.92	1.96	1.62	0.87
0	-0.88	0.74	0.34	0.76	-0.30	0.64	1.11	1.43	0.93	0.08	0.13	0.81	1.32	0.69	0.42
30	-1.17	-0.30	-0.43	-0.16	-1.12	-0.32	0.21	0.44	-0.04	-0.86	-0.70	0.06	0.29	-0.14	-0.90
60	-1.00	-0.91	-0.15	-1.17	-1.12	-0.84	0.16	0.12	0.06	-0.56	-0.80	0.00	-0.06	-0.24	-1.05
90	-0.88	-0.71	0.01	-0.60	-0.97	-0.65	0.51	0.55	0.60	-0.42	-0.43	0.40	0.26	0.48	-0.95
120	-0.97	-0.16	-0.25	-0.31	-1.00	-0.01	0.77	0.72	0.28	-0.73	-0.12	0.68	0.61	0.58	-0.25
150	-1.06	0.37	-0.41	-0.39	-1.37	0.18	0.59	0.82	0.57	-0.24	0.08	0.79	0.78	0.57	-0.46
180	-0.89	0.58	-0.22	-0.36	-1.55	0.18	0.76	0.83	0.65	-0.38	0.03	0.75	0.73	0.45	-0.32
Average	-0.46	0.45	0.35	0.21	-0.62	0.48	1.17	1.21	0.87	0.08	0.25	1.05	1.05	0.78	-0.02
Minimum	-1.17	-0.91	-0.43	-1.17	-1.55	-0.84	0.16	0.12	-0.04	-0.86	-0.80	0.00	-0.06	-0.24	-1.05
Maximum	0.87	1.28	1.65	1.62	0.95	1.51	2.50	2.25	1.90	1.43	1.20	2.24	1.96	1.86	1.22

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Phase 60 Hz Phase B
Date..... 16-Oct-26
Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 phase calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). The test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as μ rad/rad. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NC SL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Current

	120 1	120 5	120 15	120 30	120 50	240 1	240 5	240 15	240 30	240 50	480 1	480 5	480 15	480 30	480 50
Phase															
-180	2.09	-0.52	1.92	0.33	0.86	3.75	0.15	3.62	1.20	1.91	2.64	-0.05	3.33	1.07	2.25
-150	1.99	-0.60	1.93	0.58	0.89	3.67	-0.15	3.19	0.63	1.88	2.95	-0.41	3.04	0.34	2.19
-120	2.37	-0.90	2.38	-0.06	1.41	3.26	-0.20	3.04	0.63	2.27	2.81	-0.47	2.76	0.68	1.75
-90	2.97	-0.95	3.08	0.37	1.68	3.33	0.10	3.39	1.14	2.41	3.07	-0.04	3.02	1.00	2.00
-60	3.27	-0.70	3.56	1.35	3.09	3.88	0.90	4.03	1.88	3.34	3.57	0.39	3.66	1.56	2.83
-30	2.80	-0.33	3.09	1.46	2.96	4.01	0.52	4.10	1.84	3.20	3.66	0.41	3.79	1.79	3.16
0	1.77	-0.53	2.24	0.75	1.40	3.47	-0.39	3.54	1.18	2.17	2.71	-0.55	3.32	0.55	2.36
30	1.82	-1.45	1.75	-0.18	0.71	2.70	-0.87	2.80	0.52	1.96	2.16	-1.12	2.51	0.43	1.61
60	2.26	-1.96	2.20	-0.97	0.61	2.24	-0.74	2.39	0.35	1.48	2.33	-1.10	2.29	0.06	1.54
90	2.46	-1.79	2.24	-0.94	0.46	2.46	-0.23	2.96	0.63	1.57	2.83	-0.53	2.75	0.49	1.72
120	2.21	-1.17	2.00	-0.37	0.66	3.25	-0.01	3.30	1.00	2.05	3.14	-0.21	3.12	0.90	2.01
150	1.82	-0.75	1.47	-0.26	-0.21	3.26	-0.58	3.12	0.76	1.61	3.02	-0.34	2.95	0.82	2.00
180	1.74	-0.80	1.43	-1.07	-0.48	2.38	-0.67	2.73	0.60	1.59	2.56	-0.68	2.54	0.43	1.49
Average	2.27	-0.96	2.25	0.08	1.08	3.20	-0.17	3.25	0.95	2.11	2.88	-0.36	3.01	0.78	2.07
Minimum	1.74	-1.96	1.43	-1.07	-0.48	2.24	-0.87	2.39	0.35	1.48	2.16	-1.12	2.29	0.06	1.49
Maximum	3.27	-0.33	3.56	1.46	3.09	4.01	0.90	4.10	1.88	3.34	3.66	0.41	3.79	1.79	3.16

Calibration Report

RX-33-PQ/AS Xytronic Portable Standard

Function..... Phase 60 Hz Phase C
 Date..... 16-Oct-26
 Serial Number..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 phase calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). The test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as $\mu\text{rad}/\text{rad}$. The RS-933 Automated Calibration System has at least a 2 times greater accuracy than the instrument under test. The results presented on this page are compliant with ANSI/NCSL Z540-1-1994. They are not within Radian's 17025 scope of accreditation.

Voltage & Current

	120 1	120 5	120 15	120 30	120 50	240 1	240 5	240 15	240 30	240 50	480 1	480 5	480 15	480 30	480 50
Phase															
-180	0.65	1.78	-0.04	0.97	0.25	2.21	1.32	1.31	0.78	1.41	0.63	1.46	0.30	0.59	-0.08
-150	1.09	2.27	0.28	1.52	-0.15	2.73	1.18	1.44	0.43	0.89	0.41	1.28	-0.39	0.60	-0.65
-120	2.03	1.95	1.10	1.19	0.05	2.41	1.68	0.75	0.80	0.41	0.90	0.86	-0.03	0.05	-0.37
-90	2.64	1.39	1.68	0.42	0.68	1.62	2.46	0.59	1.70	0.08	1.64	0.73	0.75	-0.26	0.26
-60	2.35	1.06	1.44	0.47	1.27	1.98	2.74	1.02	1.79	0.61	2.13	1.10	1.24	0.64	0.70
-30	1.25	1.31	0.41	0.96	-0.42	2.52	1.56	1.55	1.17	1.45	1.34	1.73	0.74	0.64	0.23
0	0.72	1.90	-0.43	1.04	-0.86	2.46	0.70	1.47	0.06	0.62	0.08	0.99	-0.34	0.17	-0.74
30	1.20	1.11	-0.16	0.42	-0.80	1.60	0.62	0.66	-0.15	-0.47	-0.01	-0.21	-1.15	-0.91	-1.51
60	1.54	-0.04	0.72	-0.54	-0.07	0.54	1.23	-0.59	0.59	-0.95	0.60	-0.73	-0.35	-1.33	-0.84
90	1.19	-0.38	0.39	-0.80	0.38	0.23	1.68	-0.07	1.20	-0.34	1.04	-0.19	0.14	-1.00	-0.19
120	0.51	0.34	-0.21	0.53	0.39	1.22	1.37	0.79	0.87	0.74	0.86	0.61	-0.04	0.32	-0.05
150	0.18	1.36	-0.61	1.17	-0.31	2.18	0.55	1.20	0.06	1.21	0.31	1.24	-0.66	0.67	-0.79
180	0.77	2.00	-0.08	0.78	-0.07	1.92	0.96	0.97	0.16	0.85	0.15	0.91	-0.85	0.45	-1.36
Average	1.24	1.23	0.35	0.63	0.03	1.82	1.39	0.85	0.73	0.50	0.78	0.75	-0.05	0.05	-0.41
Minimum	0.18	-0.38	-0.61	-0.80	-0.86	0.23	0.55	-0.59	-0.15	-0.95	-0.01	-0.73	-1.15	-1.33	-1.51
Maximum	2.64	2.27	1.68	1.52	1.27	2.73	2.74	1.55	1.79	1.45	2.13	1.73	1.24	0.67	0.70