*Power**CET*** Corporation
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Santa Clara, CA 95054 USA
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Sample Report

Power Analysis Summary
PowerCET Corporation
3350 Scott Blvd., Bldg. 55
Santa Clara, CA 95054

Introduction

This is a summary of the power conditions at the PowerCET Corp. site, as recorded at location PowerCET Main 0 04/15/05 16:55. Data at this location was collected from 04/15/05 16:55:41 through 04/22/05 16:55:41.

This summary is composed of:

- The initial conditions section. This Section defines the power conditions at the above location**.**
- The Events section. This is a summary of the voltage events that occurred at this location during the monitor interval. Events are defined as changes in the monitored voltage. These changes may be subtle or severe. The power tolerance curve provides a graphical representation of the likelihood of an event to disrupt equipment operations.
- The Voltage Current and Frequency, (VIF), section. This section contains summaries for each of these parameters during the monitor interval.
- The Harmonics section. This contains the voltage and current harmonic, and harmonic distortion summaries acquired during the monitor interval.
- The Power section. This contains the VA, VARS., Watts, and Power factor acquired during the monitor interval. For multiphase locations, voltage and current imbalance are also included.

Site and Location Information

Site Information

Name	PowerCET Corp.
Account Number	
Date and Time	02/11/05 11:13:30
Phone Number	(408) 988-1346 ext 105
Contact	Bruce Lonie
Memo	PQ Monitoring / Load Study
Problem Description	N/A
Date First noticed	02/10/05
Problem Frequency	N/A
How problem exhibits itself	N/A
Problem Cost	N/A

Sample Report

Location Information

Name	PowerCET Main 0 04/15/05 16:55
Power Type	Three phase wye
Feed Phase	Unknown
Phone	(408) 988-1346
Date and Time	04/27/05 15:57:24
Nominal Voltage	120 Volts
Nominal Frequency	60 Hz

Report Parameters

This report was prepared on 4/27/2005 by PowerCET Corporation. The following limits were used in analyzing the results.

Maximum Phase Voltage.	127 V
Minimum Phase Voltage.	104 V
Maximum Neutral Voltage.	3 V
Maximum Impulse Voltage.	500 V
Maximum. Waveshape Voltage.	10 V
Maximum Frequency Deviation.	.02 Hz
Minimum Power Factor.	.85
Maximum Voltage T.H.D.	5 %
Maximum Current T.H.D	20 %
Maximum Voltage Imbalance.	2 %
Maximum Current Imbalance.	5 %

Any values outside these limits are noted in the report. Values within the limits are considered to be within a safe operating range. These limits have been programmed by PowerCET Corporation**.**

Initial Conditions

A summary of all the electrical parameters at this location is presented in the tables and graphs below. Parameters marked with an ‘*’ lie outside the limits defined above.

Sample Report

Initial Power measurements for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55 , 04/27/05 at 15:57:24

Measurement	Phase A	Phase B	Phase C	Neutral	Ground
True RMS. Voltage	122.6V	124.3V	123.4V	767.7mV	
Max. Peak to Peak Voltage	342.9V	346.9V	344.8V		
True RMS. Current	49.45A	28.72A	27.15A	18.64A	24.63mA
Max. Peak to Peak Current	153.5A	93.04A	79.03A		
Fundamental RMS. Voltage	122.5V	124.3V	123.3V		
Voltage Angle	0°	120.8°	240.7°		
Fundamental RMS. Current	49.33A	28.37A	27.02A		
Current Angle	1.033°	120.6°	224.2°		
Fundamental Impedance	2.484 Ohms	4.382 Ohms	4.565 Ohms		
Impedance Angle	358.9°	241.2m°	16.46°		
Voltage Imbalance	0.74%				
Current Imbalance	41.3%*				
Total Voltage Harmonics	1.707%	1.772%	1.508%	629.4%	
Total Current Harmonics	9.595%	11.12%	10.93%	40.11%	598.7%
True VA	6.073k	3.551k	3.356k	13.68	
True VARS.	634.5	429.1	984.5	13.52	
True Watts	6.040k	3.525k	3.208k	-2.08	
Distortion	-7.289	-3.670	11.15	-2.187	
True Power Factor	0.994	0.992	0.956	0.152	
Fundamental VA	6.048k	3.528k	3.334k	0.394	
Fundamental VARS.	-109.0	14.85	945.1	0.379	
Fundamental Watts	6.047k	3.528k	3.197k	0.107	
Fundamental Power Factor	-0.999	1	0.959	0.271	

One or more of the Initial Conditions exceed the limits defined above. It is recommended that corrective action be implemented to reduce or eliminate these conditions.

Nominal Voltages

Phase Voltages:

Phase voltages that exceed the nominal voltage may damage sensitive electronic equipment or cause overheating. Low phase voltages may result in intermittent equipment operation and overheating.

Neutral and Neutral to Ground Voltages:

Excessive neutral voltages may indicate wiring problems exist or that the loads on the supply exceed the wiring rating.

Sample Report

Voltage and Current Imbalance

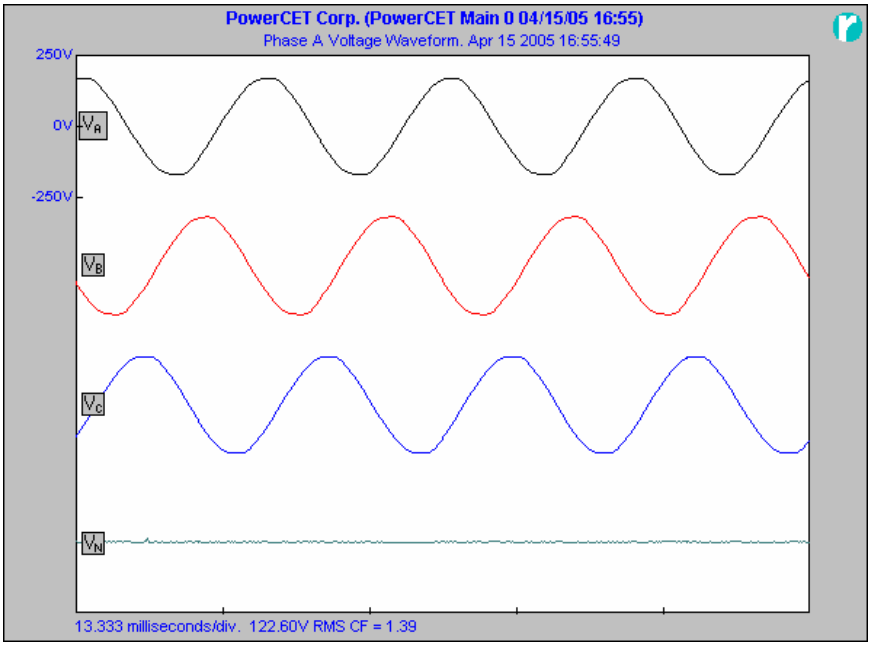
Voltage Imbalance:

Excessive Voltage Imbalance is an indication that one or two phases may be overloaded. A redistribution of the loads on one or more of the phases may be in order.

Current Imbalance:

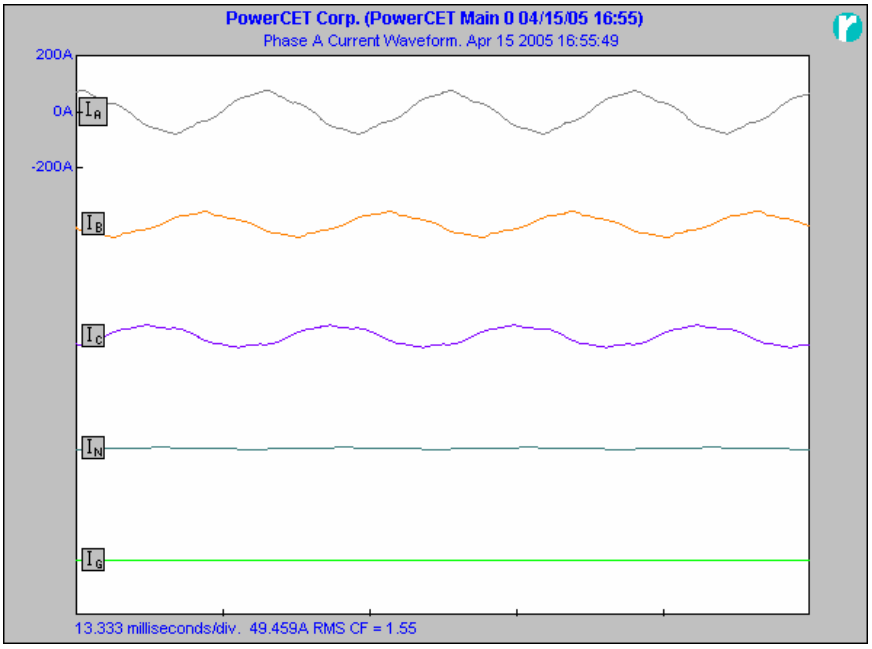
Excessive Current Imbalance also indicates a poor distribution of loads. Although there may be no corresponding voltage imbalance, excessive current imbalance may result in tripped circuit breakers or transformer overheating.

The Voltage waveforms for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55 are shown below:



Sample Report

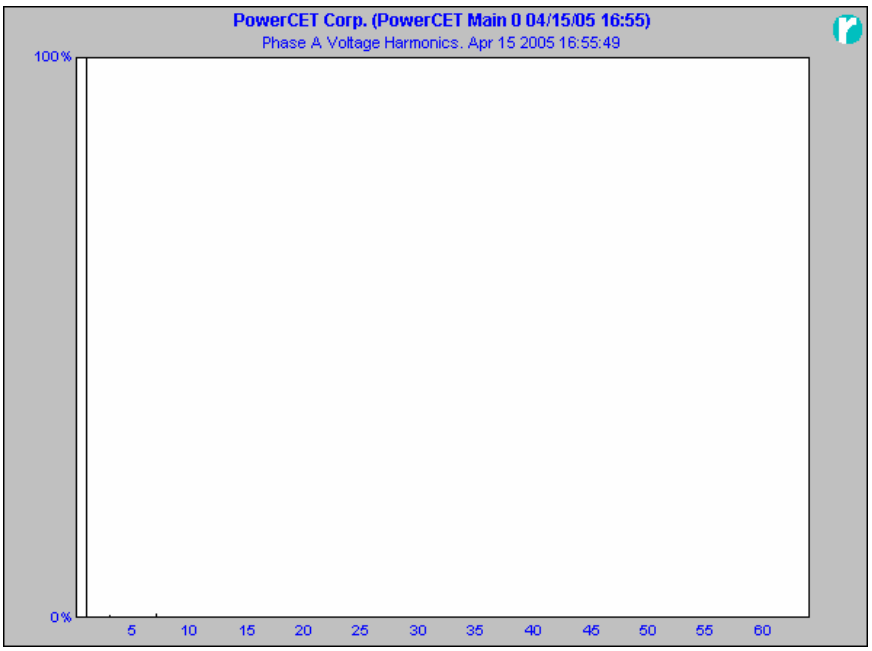
The Current waveforms for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55 are shown below:



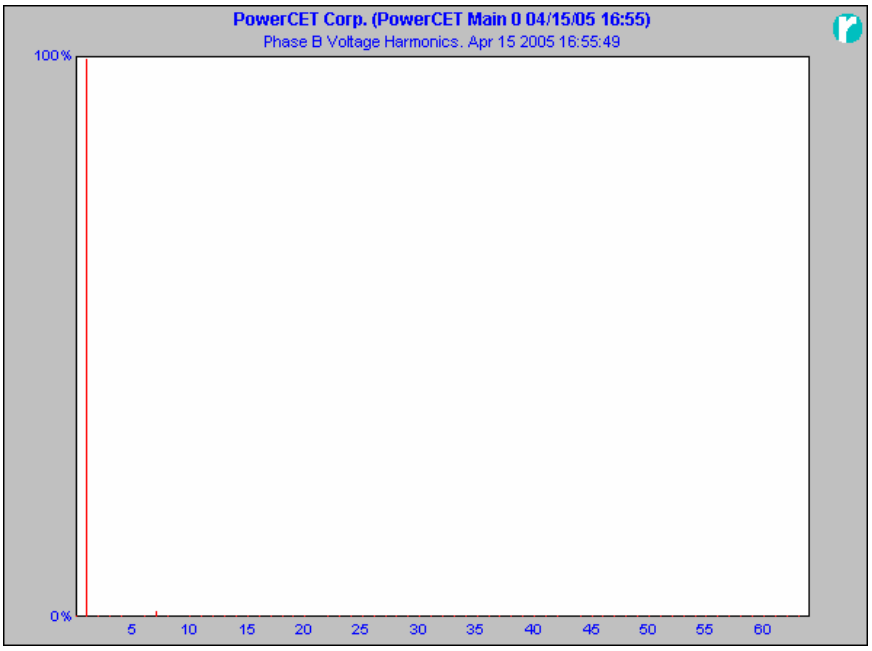
Sample Report

Voltage harmonics for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A Voltage Harmonics.

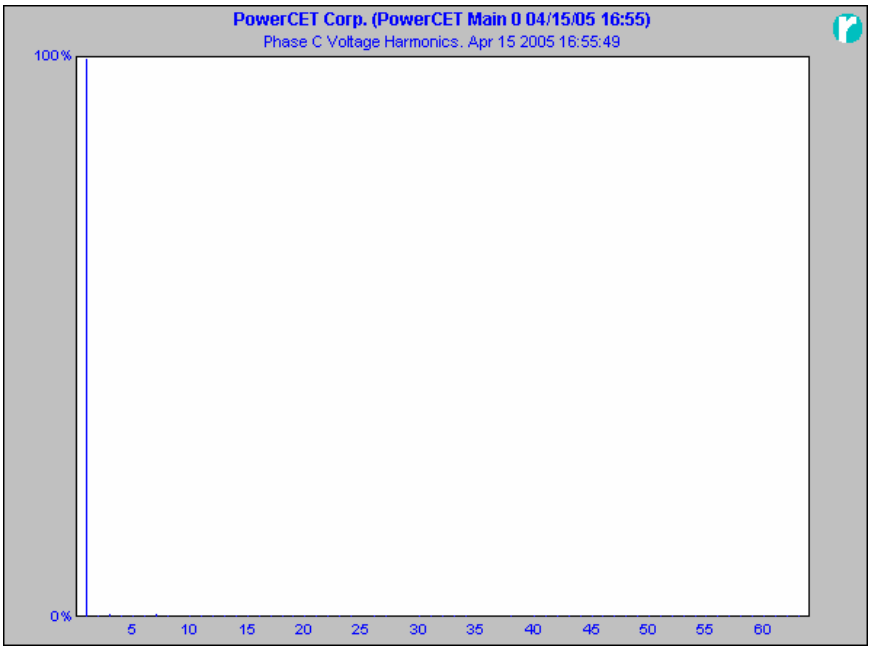


Phase B Voltage Harmonics.

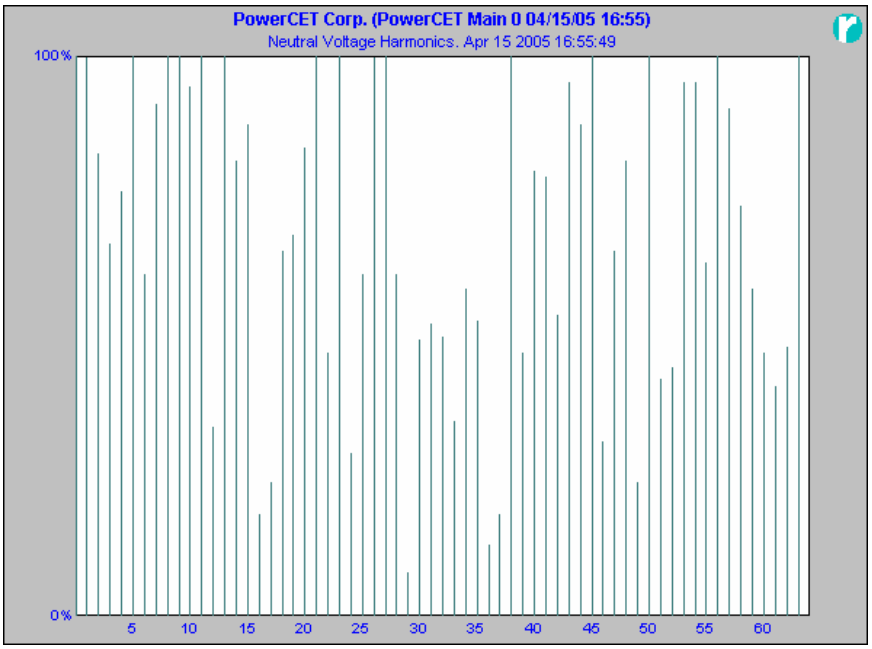


Sample Report

Phase C Voltage Harmonics.



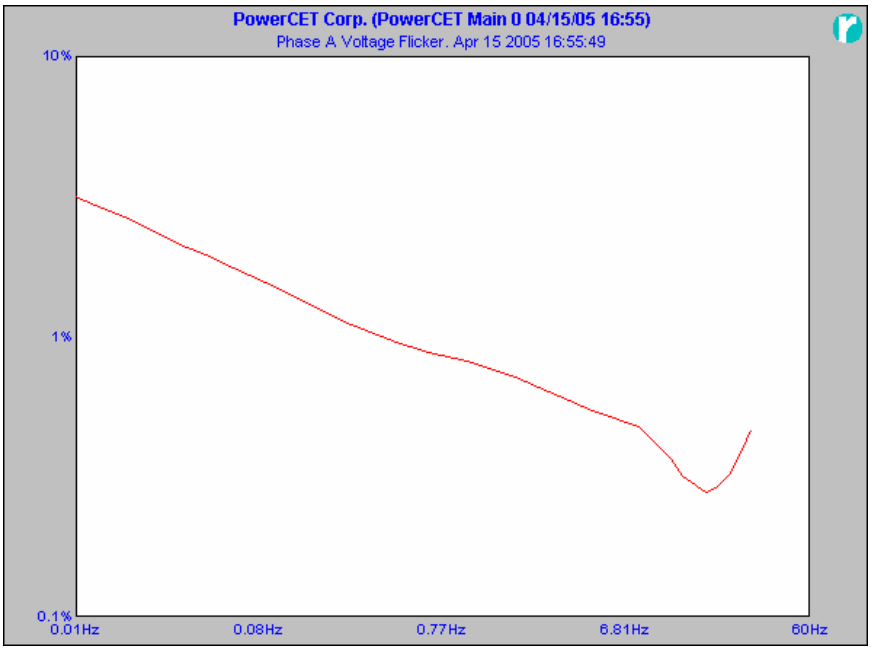
Neutral Voltage Harmonics.



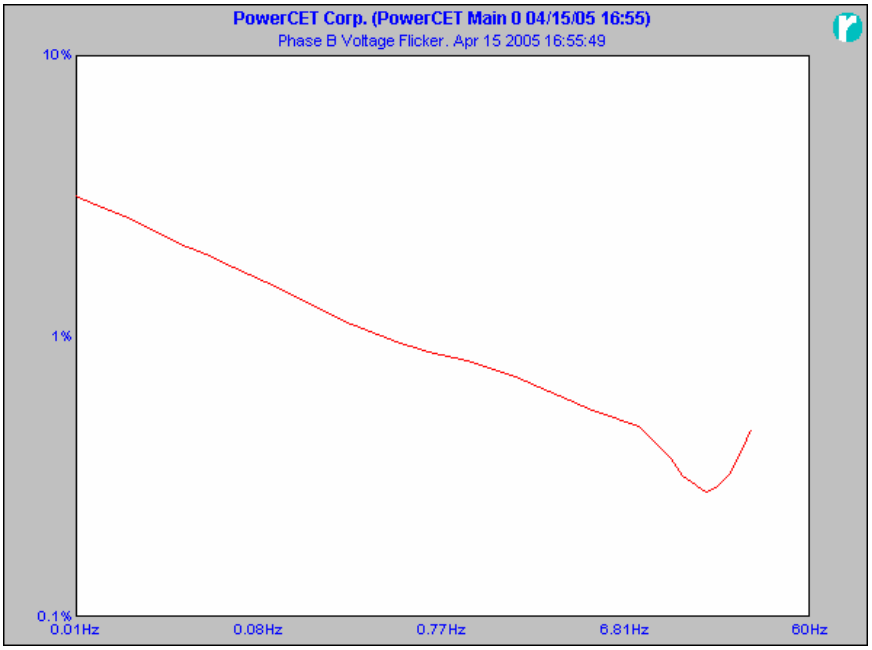
Sample Report

Voltage Flicker for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A Voltage Flicker.

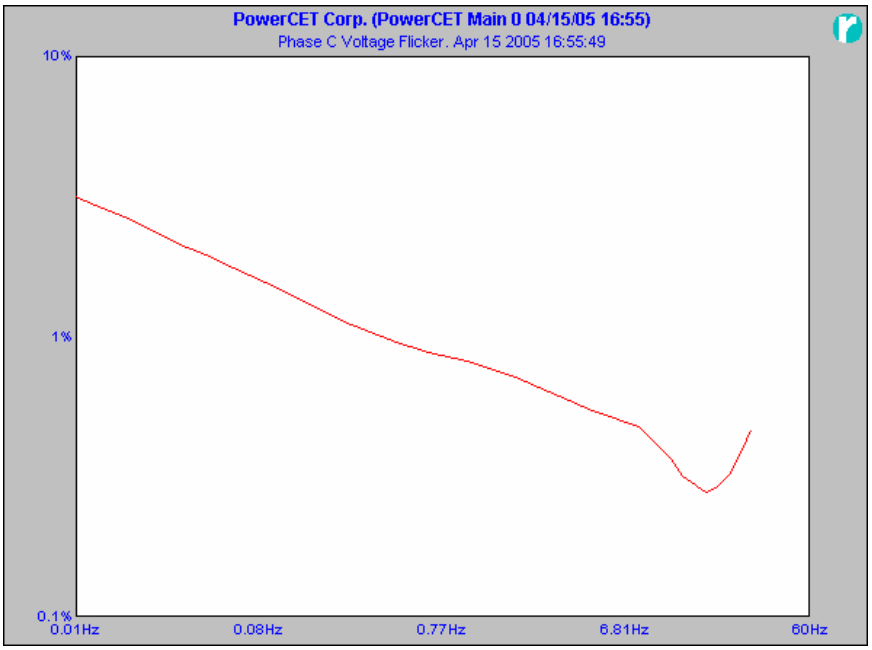


Phase B Voltage Flicker.



Sample Report

Phase C Voltage Flicker.



The first 16 harmonics for Phase A voltage are shown below:

Harmonic	Amplitude	Phase	Percent
0	274.6mV	180°	0.158%
1	173.3V	348.2°	100%
2	45.77mV	267.6°	0.026%
3	1.541V	268.9°	0.889%
4	48.25mV	17.24°	0.027%
5	1.231V	145.1°	0.710%
6	34.12mV	115.7°	0.019%
7	2.02V	171.0°	1.165%
8	45.77mV	179.4°	0.026%
9	740.3mV	81.17°	0.427%
10	43.16mV	314.5°	0.024%
11	199.0mV	32.03°	0.114%
12	34.12mV	333.0°	0.019%
13	222.5mV	285.5°	0.128%
14	21.58mV	134.6°	0.012%
15	119.6mV	219.4°	0.069%
16	0V	359.7°	0%
Odd Harmonics		**1.696%**	
Even Harmonics		**0.192%**	
Total Harmonics		**1.707%**	

The first 16 harmonics for Phase B voltage are shown below:

Harmonic	Amplitude	Phase	Percent
0	305.1mV	180°	0.173%
1	175.8V	109.1°	100%
2	34.12mV	331.0°	0.019%
3	1.319V	238.5°	0.750%
4	62.91mV	344.7°	0.035%
5	908.0mV	64.20°	0.516%
6	45.77mV	359.2°	0.026%
7	2.524V	288.7°	1.435%
8	64.74mV	224.4°	0.036%
9	796.2mV	77.29°	0.452%
10	43.16mV	314.5°	0.024%
11	159.4mV	252.8°	0.090%
12	43.16mV	44.60°	0.024%
13	207.9mV	53.60°	0.118%
14	21.58mV	44.65°	0.012%
15	98.11mV	231.0°	0.055%
16	15.25mV	359.7°	0.008%
Odd Harmonics		**1.769%**	
Even Harmonics		**0.113%**	
Total Harmonics		**1.772%**	

The first 16 harmonics for Phase C voltage are shown below:

Harmonic	Amplitude	Phase	Percent
0	0V	0°	0%
1	174.4V	228.9°	100%
2	43.16mV	312.6°	0.024%
3	1.448V	256.8°	0.830%
4	30.51mV	88.80°	0.017%
5	1.016V	276.8°	0.582%
6	15.25mV	89.20°	0.008%
7	1.749V	46.43°	1.002%
8	30.51mV	179.4°	0.017%
9	769.9mV	75.70°	0.441%
10	48.25mV	17.95°	0.027%
11	198.5mV	179.5°	0.113%
12	15.25mV	89.60°	0.008%
13	123.2mV	149.8°	0.070%
14	30.51mV	89.65°	0.017%
15	131.8mV	215.2°	0.075%
16	15.25mV	269.7°	0.008%
Odd Harmonics		1.503%	
Even Harmonics		0.118%	
Total Harmonics		1.508%	

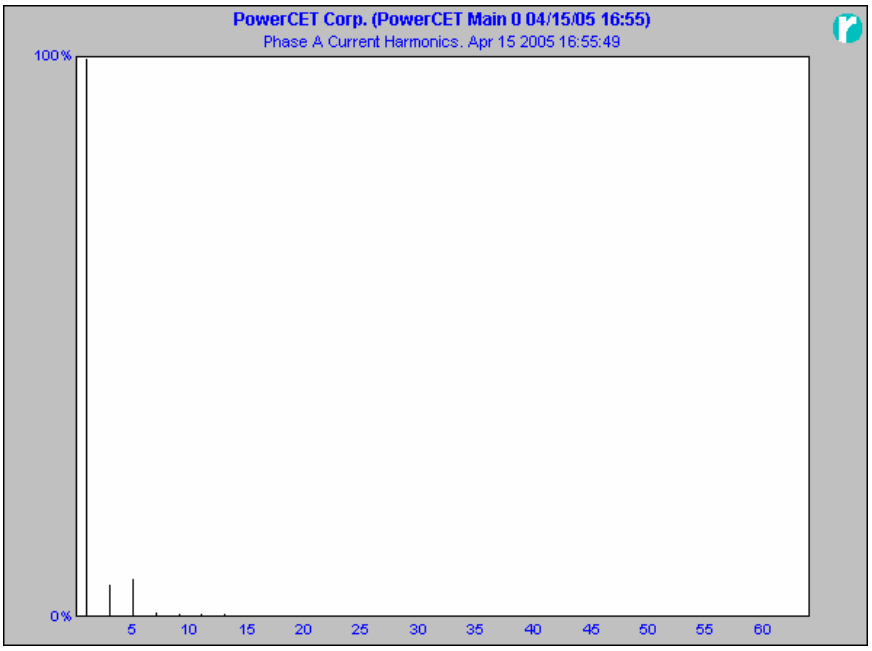
The first 16 harmonics for the neutral voltage are shown below:

Harmonic	Amplitude	Phase	Percent
0	1.547V	0°	4.762k%
1	32.48mV	268.6°	100%
2	26.97mV	132.6°	83.04%
3	21.74mV	73.15°	66.95%
4	24.79mV	156.1°	76.33%
5	42.65mV	9.35°	131.3%
6	19.91mV	252.5°	61.30%
7	29.85mV	115.8°	91.91%
8	34.38mV	356.2°	105.8%
9	55.70mV	217.5°	171.5%
10	30.81mV	157.7°	94.86%
11	37.03mV	325.0°	114.0%
12	11.12mV	210.5°	34.24%
13	39.32mV	103.6°	121.0%
14	26.56mV	290.6°	81.79%
15	28.61mV	142.8°	88.08%
16	6.031mV	71.26°	18.56%
Odd Harmonics		478.8%	
Even Harmonics		408.4%	
Total Harmonics		629.4%	

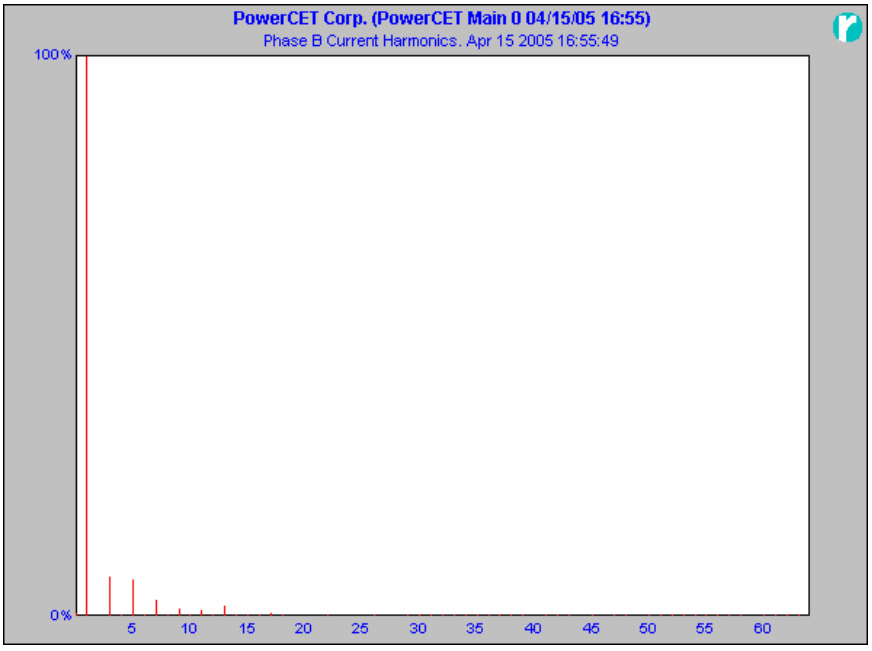
Sample Report

Current harmonics for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A Current Harmonics.

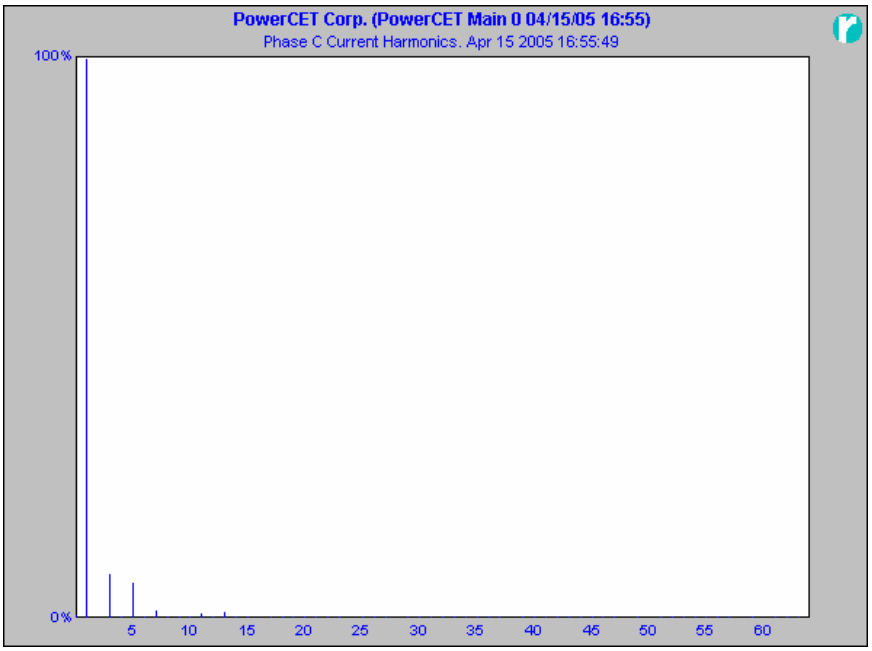


Phase B Current Harmonics.

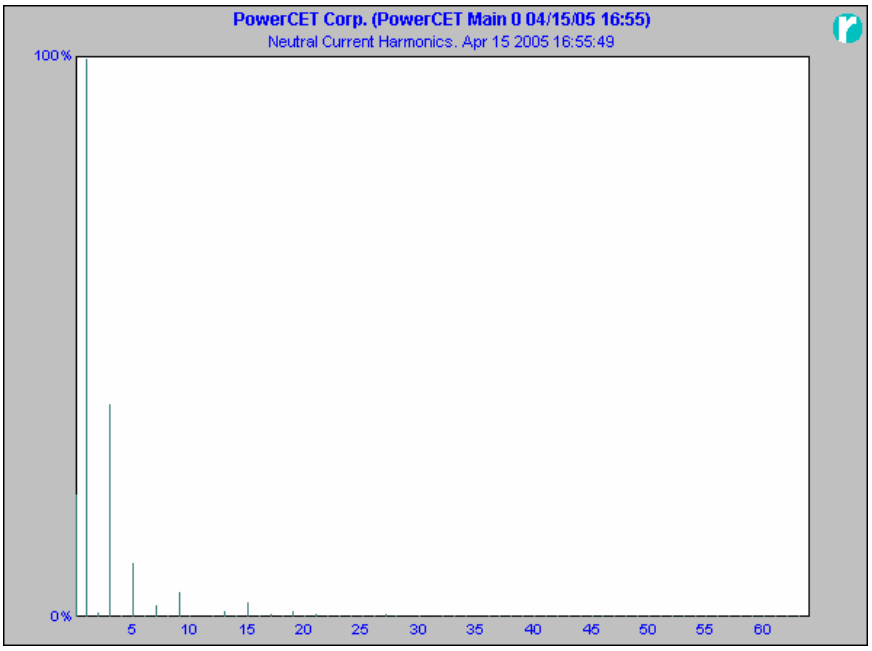


Sample Report

Phase C Current Harmonics

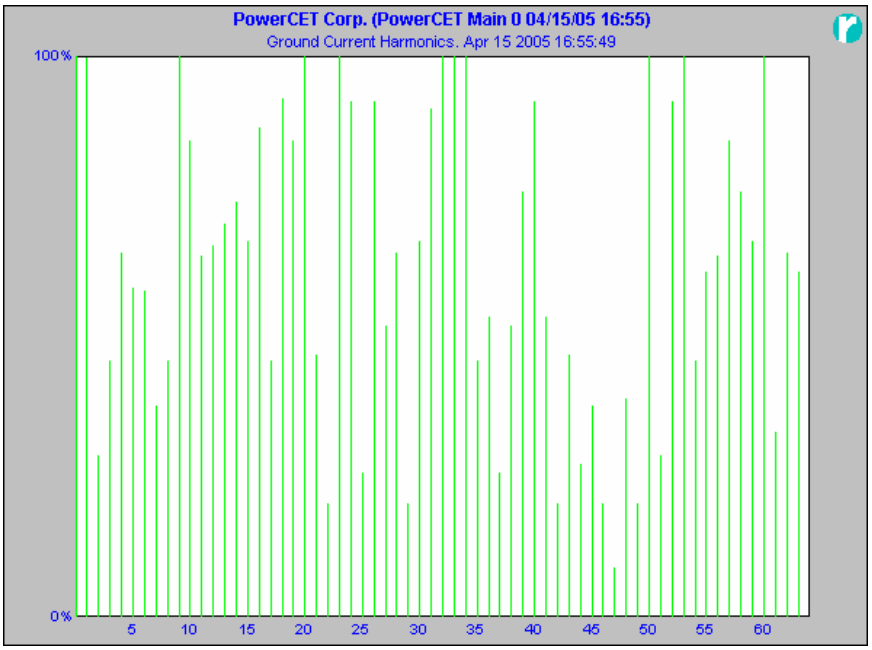


Neutral Current Harmonics.



Sample Report

Ground Current Harmonics



The first 16 harmonics for Phase A current are shown below:

Harmonic	Amplitude	Phase	Percent
0	4.577mA	0°	0.006%
1	69.77A	349.3°	100%
2	224.3mA	358.8°	0.321%
3	4.176A	31.59°	5.985%
4	77.95mA	139.7°	0.111%
5	5.007A	260.8°	7.176%
6	49.30mA	291.8°	0.070%
7	817.7mA	237.1°	1.172%
8	9.155mA	0°	0.013%
9	544.0mA	306.0°	0.779%
10	14.48mA	251.5°	0.020%
11	682.5mA	208.4°	0.978%
12	32.40mA	261.8°	0.046%
13	629.9mA	106.0°	0.902%
14	6.474mA	45°	0.009%
15	327.9mA	31.23°	0.47%
16	13.81mA	180°	0.019%
Odd Harmonics		**9.581%**	
Even Harmonics		**0.505%**	
Total Harmonics		**9.595%**	

The first 16 harmonics for Phase B current are shown below:

Harmonic	Amplitude	Phase	Percent
0	379.9mA	180°	0.946%
1	40.12A	108.9°	100%
2	119.1mA	272.2°	0.296%
3	2.934A	37.58°	7.313%
4	22.88mA	233.1°	0.057%
5	2.783A	142.7°	6.936%
6	39.38mA	54.46°	0.098%
7	1.322A	23.90°	3.294%
8	14.47mA	71.56°	0.036%
9	628.6mA	235.3°	1.566%
10	22.89mA	53.13°	0.057%
11	599.8mA	72.67°	1.494%
12	18.89mA	345.9°	0.047%
13	840.9mA	227.8°	2.095%
14	14.51mA	251.5°	0.036%
15	221.4mA	41.63°	0.551%
16	19.54mA	45°	0.048%
Odd Harmonics		**11.10%**	
Even Harmonics		**0.661%**	
Total Harmonics		**11.12%**	

The first 16 harmonics for Phase C current are shown below:

Harmonic	Amplitude	Phase	Percent
0	343.3mA	180°	0.898%
1	38.21A	212.5°	100%
2	190.5mA	73.96°	0.498%
3	3.149A	77.02°	8.241%
4	58.62mA	128.6°	0.153%
5	2.492A	20.03°	6.521%
6	45.77mA	126.8°	0.119%
7	693.6mA	109.8°	1.815%
8	18.87mA	104.0°	0.049%
9	242.2mA	262.9°	0.633%
10	21.11mA	139.3°	0.055%
11	402.4mA	348.1°	1.053%
12	33.83mA	118.3°	0.088%
13	574.2mA	330.0°	1.502%
14	18.36mA	90°	0.048%
15	287.3mA	36.86°	0.751%
16	0A	0°	0%
Odd Harmonics		**10.90%**	
Even Harmonics		**0.772%**	
Total Harmonics		**10.93%**	

The first 16 harmonics for the Neutral current are shown below:

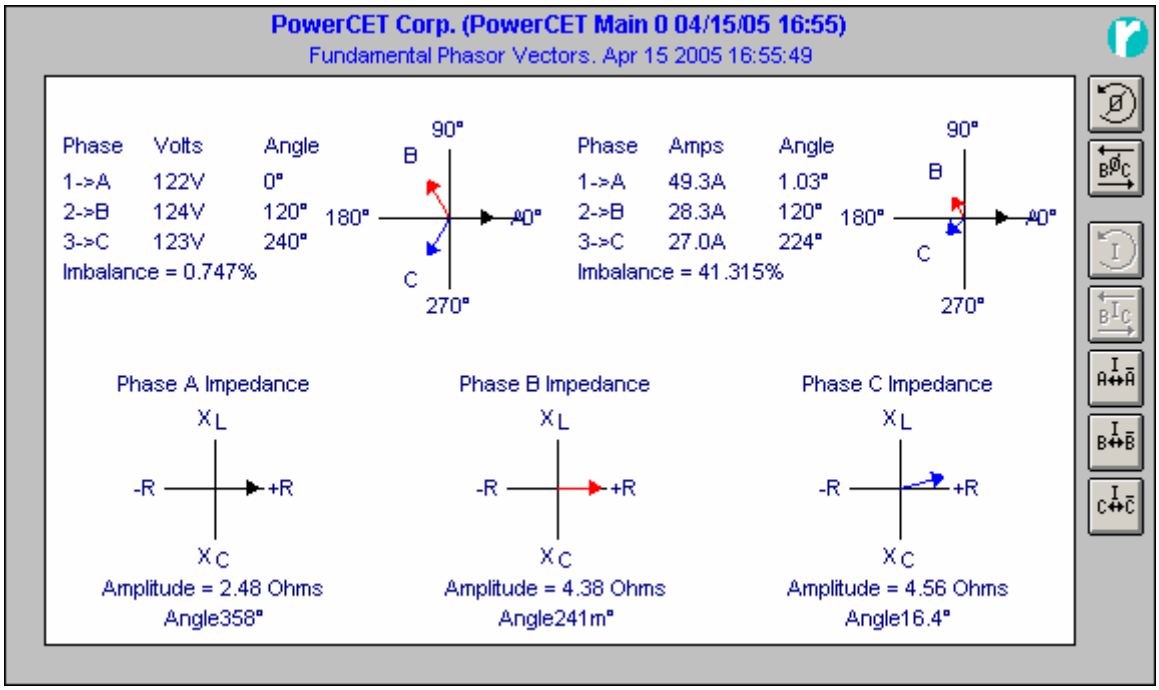
Harmonic	Amplitude	Phase	Percent
0	5.359A	180°	22.07%
1	24.27A	194.3°	100%
2	295.5mA	184.4°	1.217%
3	9.279A	225.9°	38.22%
4	141.3mA	324.0°	0.582%
5	2.404A	72.83°	9.906%
6	45.23mA	235.3°	0.186%
7	619.7mA	210.8°	2.553%
8	40.96mA	257.9°	0.168%
9	1.178A	86.51°	4.854%
10	29.17mA	281.3°	0.120%
11	81.93mA	294.7°	0.337%
12	19.19mA	116.5°	0.079%
13	323.3mA	49.67°	1.332%
14	16.68mA	329.0°	0.068%
15	749.0mA	213.2°	3.085%
16	5.722mA	0°	0.023%
Odd Harmonics		**40.08%**	
Even Harmonics		**1.448%**	
Total Harmonics		**40.11%**	

The first 16 harmonics for the Ground current are shown below:

Harmonic	Amplitude	Phase	Percent
0	49.04mA	180°	31.69k%
1	154.7uA	326.3°	100%
2	45.23uA	71.56°	29.23%
3	71.52uA	126.8°	46.22%
4	101.1uA	45°	65.37%
5	91.60uA	218.6°	59.19%
6	90.47uA	161.5°	58.47%
7	58.98uA	284.0°	38.11%
8	71.52uA	53.13°	46.22%
9	239.8uA	342.6°	154.9%
10	131.8uA	347.4°	85.23%
11	100.1uA	180°	64.71%
12	103.1uA	123.6°	66.66%
13	108.9uA	293.1°	70.40%
14	115.3uA	119.7°	74.53%
15	104.1uA	254.0°	67.30%
16	135.7uA	18.43°	87.70%
Odd Harmonics		**386.1%**	
Even Harmonics		**457.6%**	
Total Harmonics		**598.7%**	

Sample Report

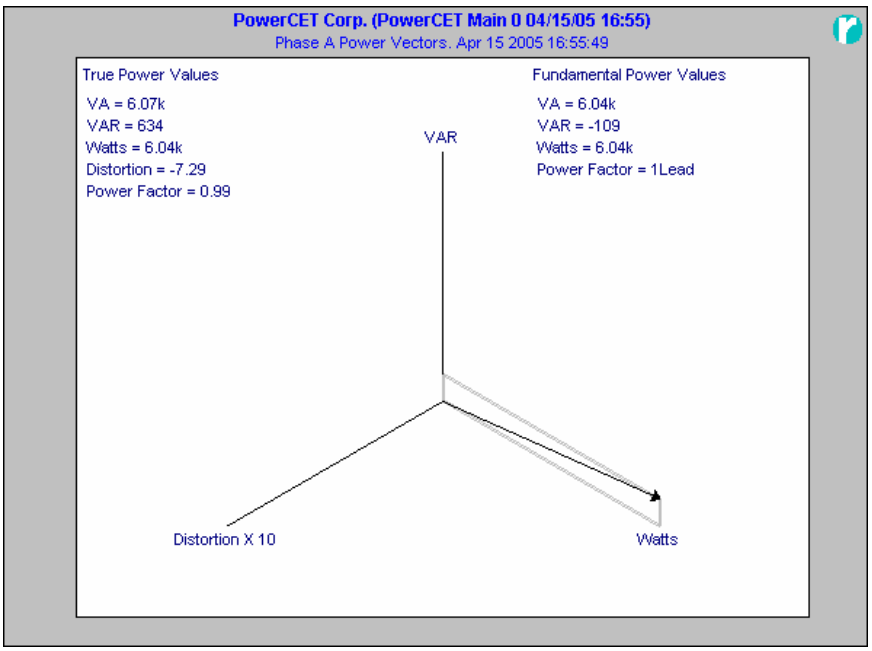
The Voltage, Current and Impedance Phasors for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55 are shown below:



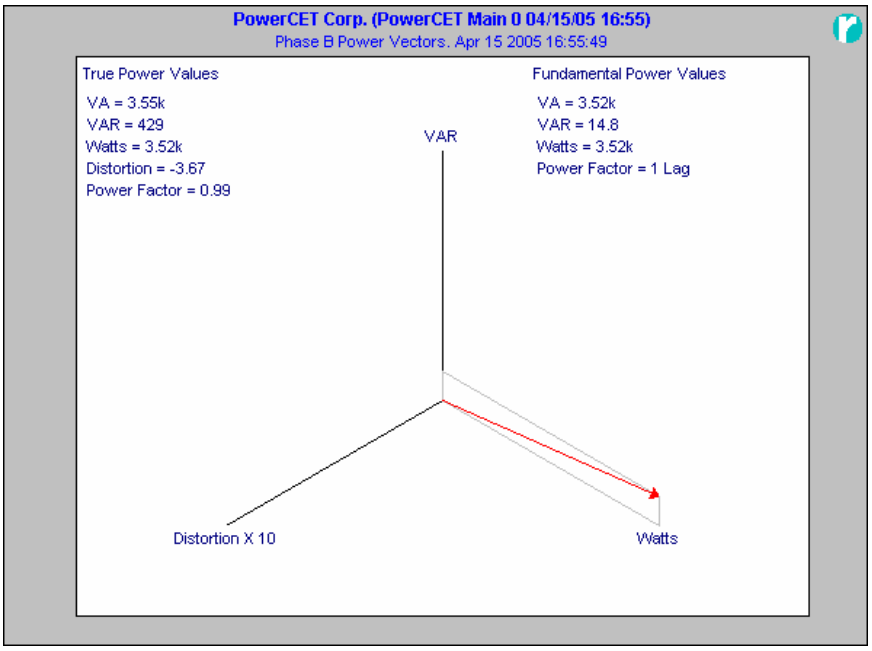
Sample Report

Power vectors for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

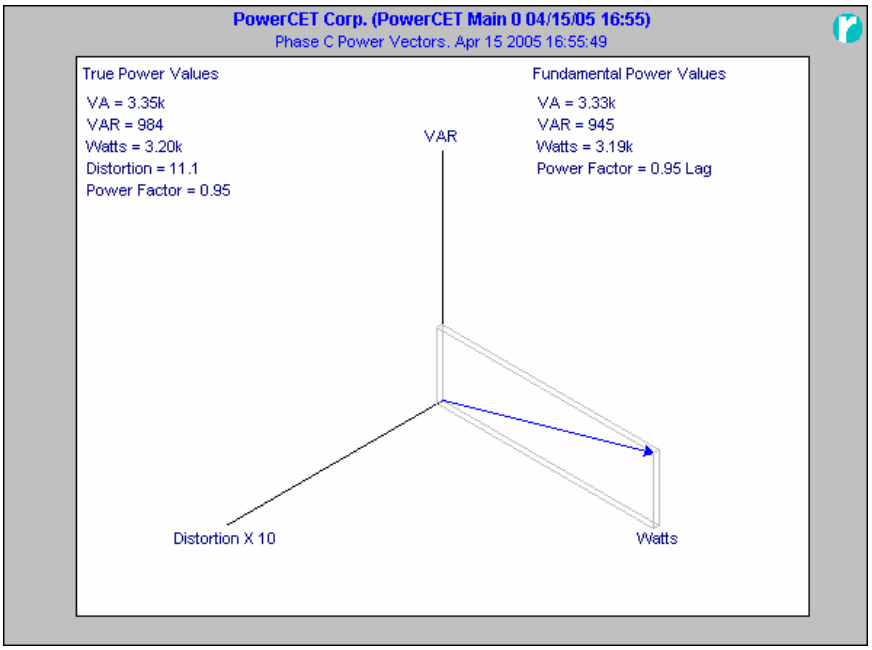
Phase A Power Vectors.



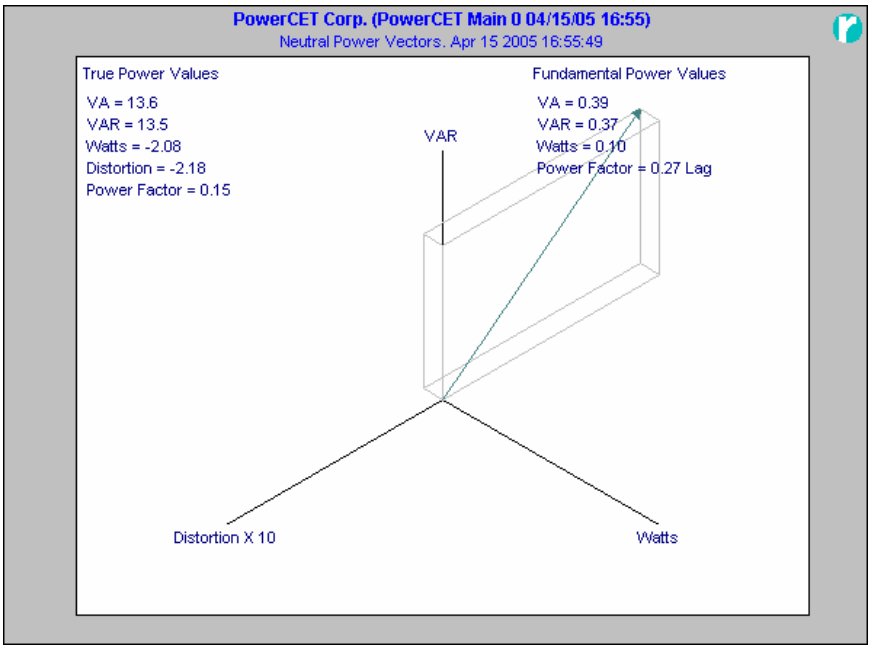
Phase B Power Vectors.



Phase C Power Vectors.



Neutral Power Vectors.



Voltage Events

The following summarizes the results of the Power Quality monitoring survey from 04/15/05 16:55:41 through 04/22/05 16:55:41. It is intended to present an overview of the power quality at PowerCET Corp.:PowerCET Main 0 04/15/05 16:55. The table below is a listing of the most significant events.

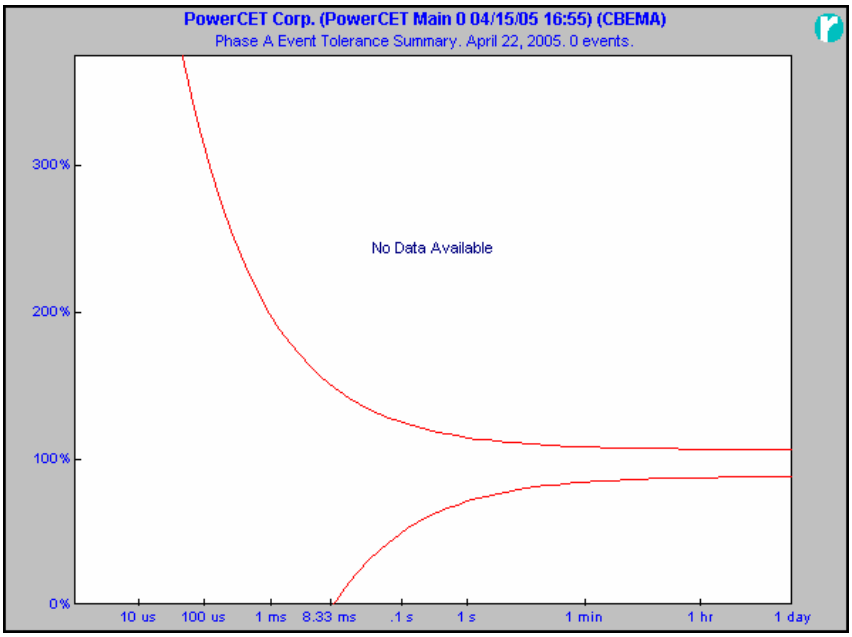
Event Description	No.	Amp.	Duration	Date and Time
Phase A Largest RMS. Event	N/A			
Phase A Largest Waveshape Event	N/A			
Phase A Longest Waveshape Event	N/A			
Phase A Largest Impulse Event	N/A			
Phase A Longest Impulse Event	N/A			
Phase B Largest RMS. Event	1	121.3V	3.836 day	Apr 10 2005 16:55:43
Phase B Largest Waveshape Event	11	109.6V	50 ms	Apr 19 2005 12:59:30
Phase B Longest Waveshape Event	11	109.6V	50 ms	Apr 19 2005 12:59:30
Phase B Largest Impulse Event	N/A			
Phase B Longest Impulse Event	N/A			
Phase C Largest RMS. Event	2	120.7V	3.836 day	Apr 10 2005 16:55:43
Phase C Largest Waveshape Event	12	106.3V	50 ms	Apr 19 2005 12:59:30
Phase C Longest Waveshape Event	12	106.3V	50 ms	Apr 19 2005 12:59:30
Phase C Largest Impulse Event	N/A			
Phase C Longest Impulse Event	N/A			
Neutral Largest RMS. Event	N/A			
Neutral Largest Waveshape Event	N/A			
Neutral Longest Waveshape Event	N/A			
Neutral Largest Impulse Event	N/A			
Neutral Longest Impulse Event	N/A			

Power Tolerance Envelope:

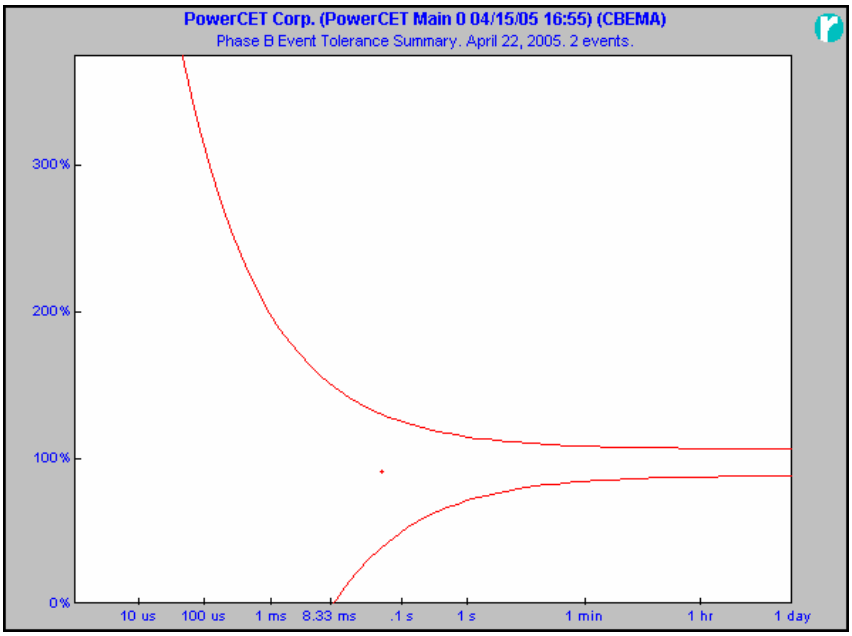
The power quality parameters are summarized in the Power Tolerance Envelope shown below. Each dot on these graphs represents an event. The area outside of these lines depict events which are often associated with equipment malfunction..

Sample Report

Phase A Event Tolerance Summary.

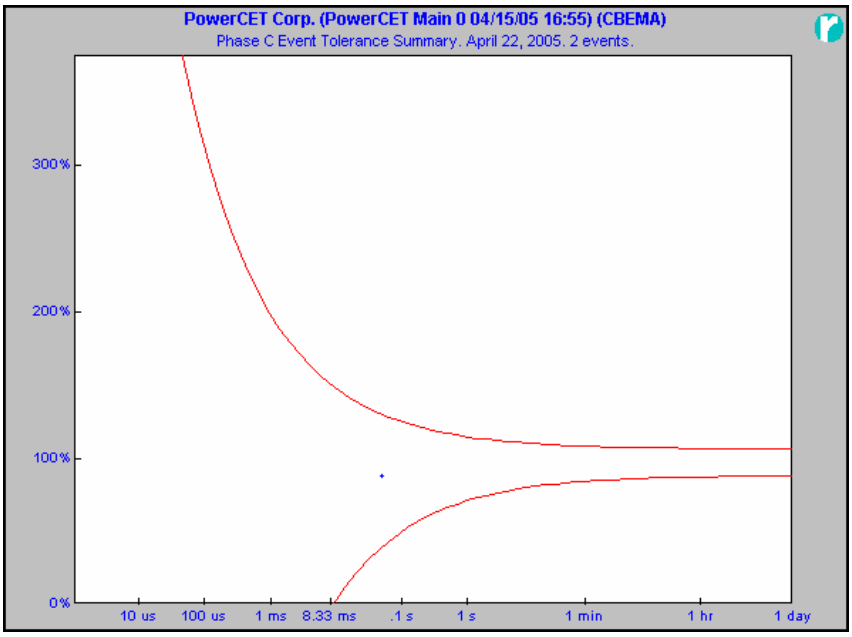


Phase B Event Tolerance Summary.

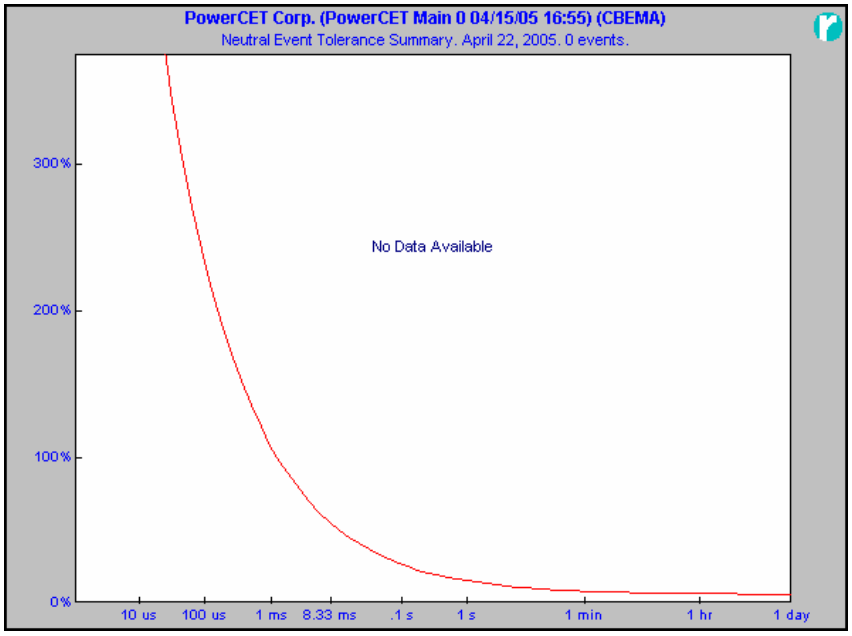


Sample Report

Phase C Event Tolerance Summary.



Neutral Event Tolerance Summary.

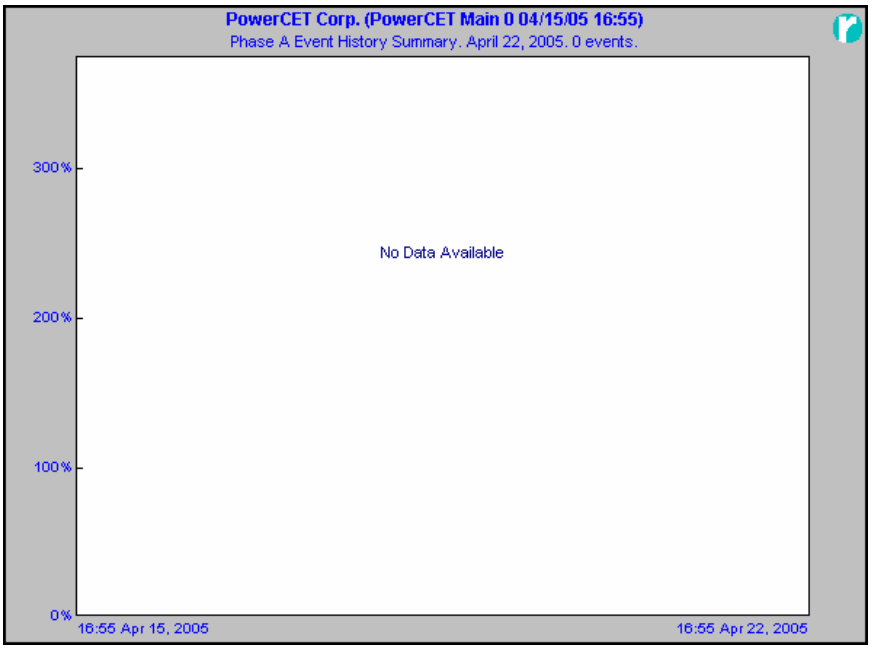


Sample Report

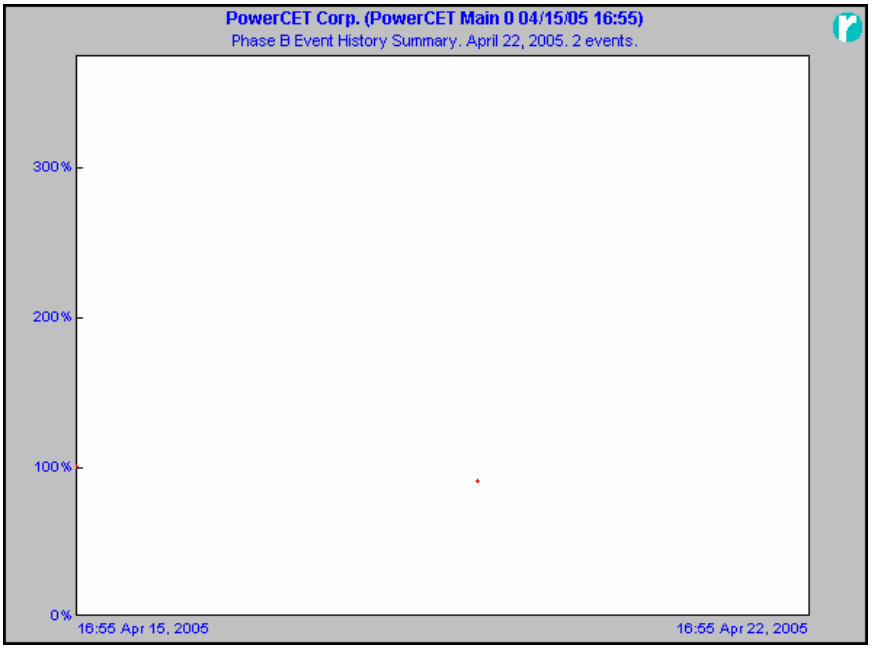
Event History Graphs:

A summary of events that occurred during the monitoring interval is shown in the event history graphs below. These events are graphed by amplitude versus time of occurrence.

Phase A Event History Summary.

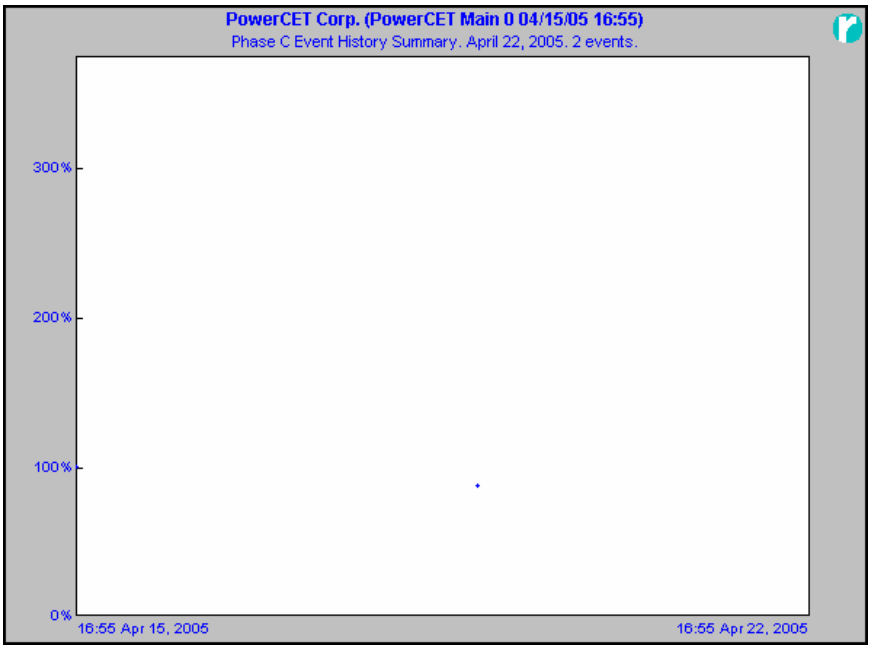


Phase B Event History Summary.



Sample Report

Phase C Event History Summary.



Neutral Event History Summary.

Sample Report

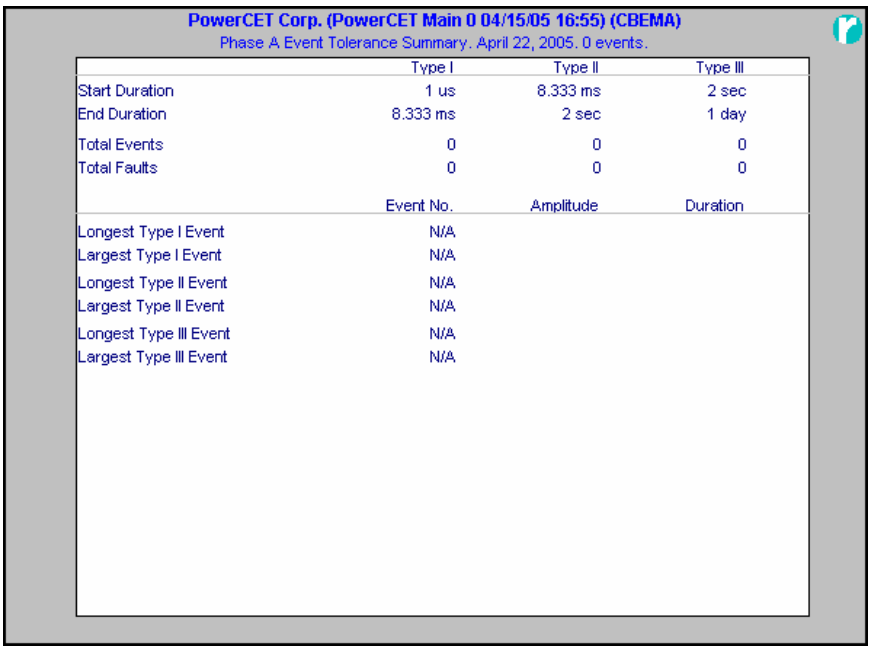
Event Domain Analyzer

This section contains the Event Tolerance Summaries, the Event Characterization, and the Solutions Table.

Event Tolerance Summaries:

The tables below show the Event Tolerance Summary, listing the events in the categories of Type I (Impulses), Type II (Waveshape Events), and Type III (RMS Events), for each phase. An asterisk by the event number indicates a Fault.

Phase A Event Tolerance Summary.



PowerCET Corp. (PowerCET Main 0 04/15/05 16:55) (CBEMA)

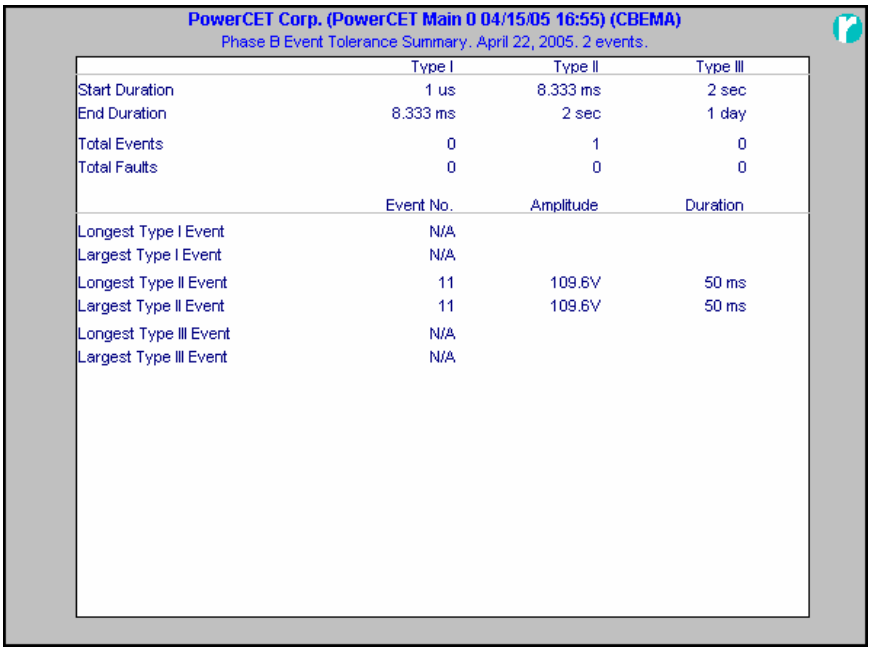
Phase A Event Tolerance Summary. April 22, 2005. 0 events.

	Type I	Type II	Type III
Start Duration	1 us	8.333 ms	2 sec
End Duration	8.333 ms	2 sec	1 day
Total Events	0	0	0
Total Faults	0	0	0

	Event No.	Amplitude	Duration
Longest Type I Event	N/A		
Largest Type I Event	N/A		
Longest Type II Event	N/A		
Largest Type II Event	N/A		
Longest Type III Event	N/A		
Largest Type III Event	N/A		

Sample Report

Phase B Event Tolerance Summary.

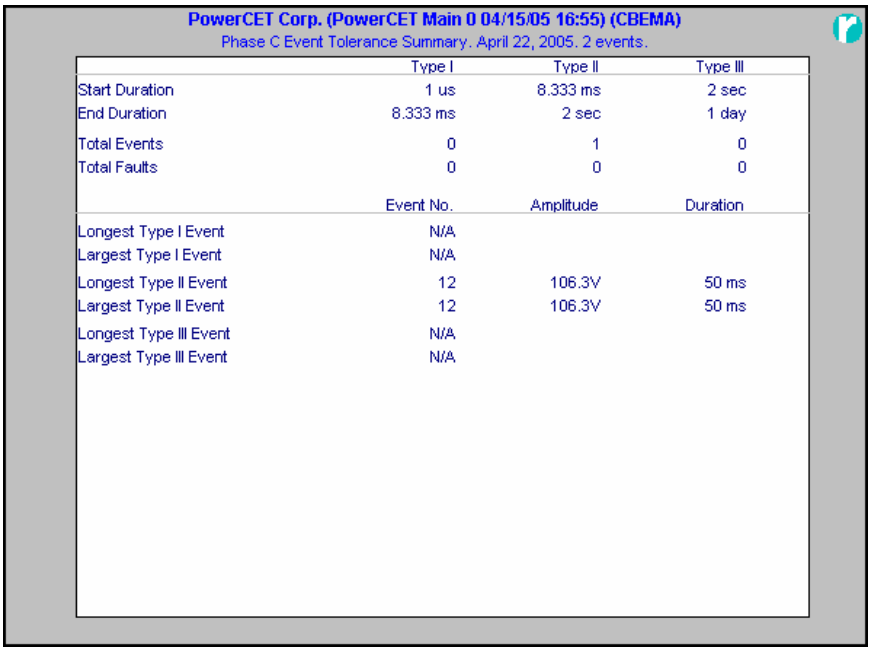


PowerCET Corp. (PowerCET Main 0 04/15/05 16:55) (CBEMA)

Phase B Event Tolerance Summary. April 22, 2005. 2 events.

	Type I	Type II	Type III
Start Duration	1 us	8.333 ms	2 sec
End Duration	8.333 ms	2 sec	1 day
Total Events	0	1	0
Total Faults	0	0	0
	Event No.	Amplitude	Duration
Longest Type I Event	N/A		
Largest Type I Event	N/A		
Longest Type II Event	11	109.6V	50 ms
Largest Type II Event	11	109.6V	50 ms
Longest Type III Event	N/A		
Largest Type III Event	N/A		

Phase C Event Tolerance Summary.

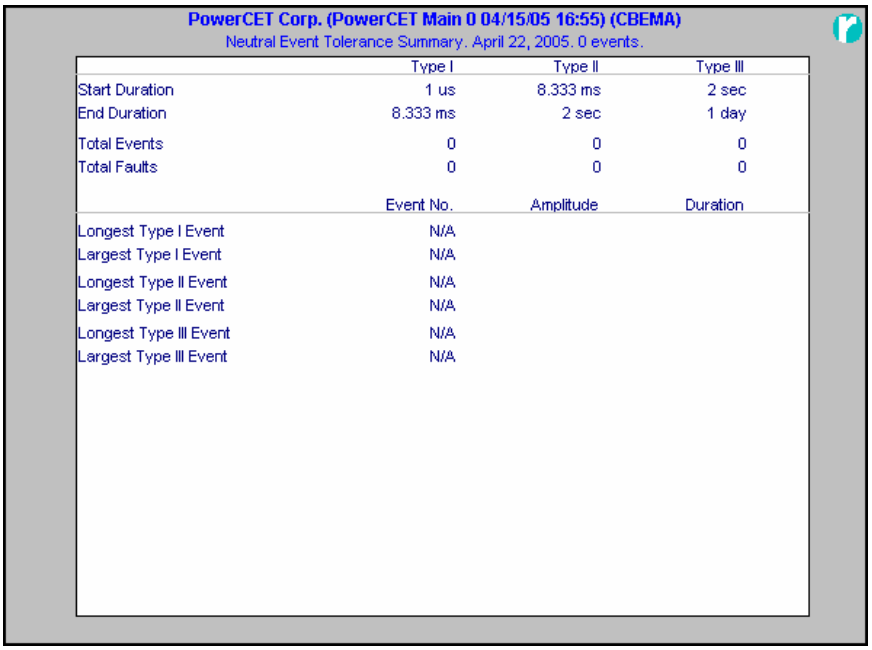


PowerCET Corp. (PowerCET Main 0 04/15/05 16:55) (CBEMA)

Phase C Event Tolerance Summary. April 22, 2005. 2 events.

	Type I	Type II	Type III
Start Duration	1 us	8.333 ms	2 sec
End Duration	8.333 ms	2 sec	1 day
Total Events	0	1	0
Total Faults	0	0	0
	Event No.	Amplitude	Duration
Longest Type I Event	N/A		
Largest Type I Event	N/A		
Longest Type II Event	12	106.3V	50 ms
Largest Type II Event	12	106.3V	50 ms
Longest Type III Event	N/A		
Largest Type III Event	N/A		

Neutral Event Tolerance Summary.



PowerCET Corp. (PowerCET Main 0 04/15/05 16:55) (CBEMA)

Neutral Event Tolerance Summary. April 22, 2005. 0 events.

	Type I	Type II	Type III
Start Duration	1 us	8.333 ms	2 sec
End Duration	8.333 ms	2 sec	1 day
Total Events	0	0	0
Total Faults	0	0	0

	Event No.	Amplitude	Duration
Longest Type I Event	N/A		
Largest Type I Event	N/A		
Longest Type II Event	N/A		
Largest Type II Event	N/A		
Longest Type III Event	N/A		
Largest Type III Event	N/A		

Event Characterization:

If Impulses, Waveshape Events, and/or RMS Events were chosen to be in this report, they are shown in this section. They are summarized over all of the phases together. The largest of the events in each category are also shown.

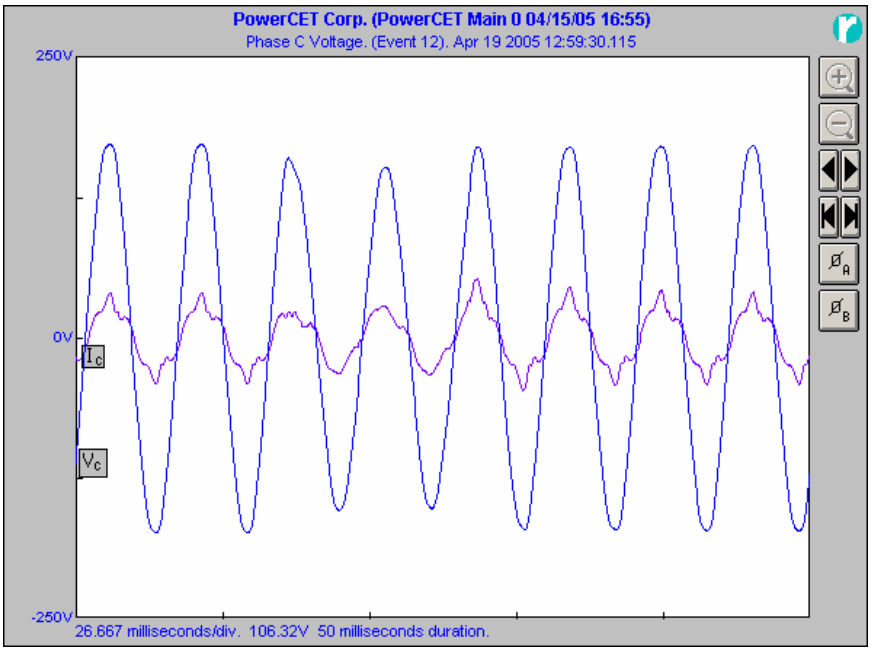
Impulses:

Impulses are shown on the left side of the Power Tolerance Envelope. They are relatively high frequency voltage excursions of short duration. When of significant magnitude and duration, these disturbances can cause malfunction of sensitive electronic equipment and damage both components and insulation. **No impulses occurred during the monitoring period.**

Waveshape Faults:

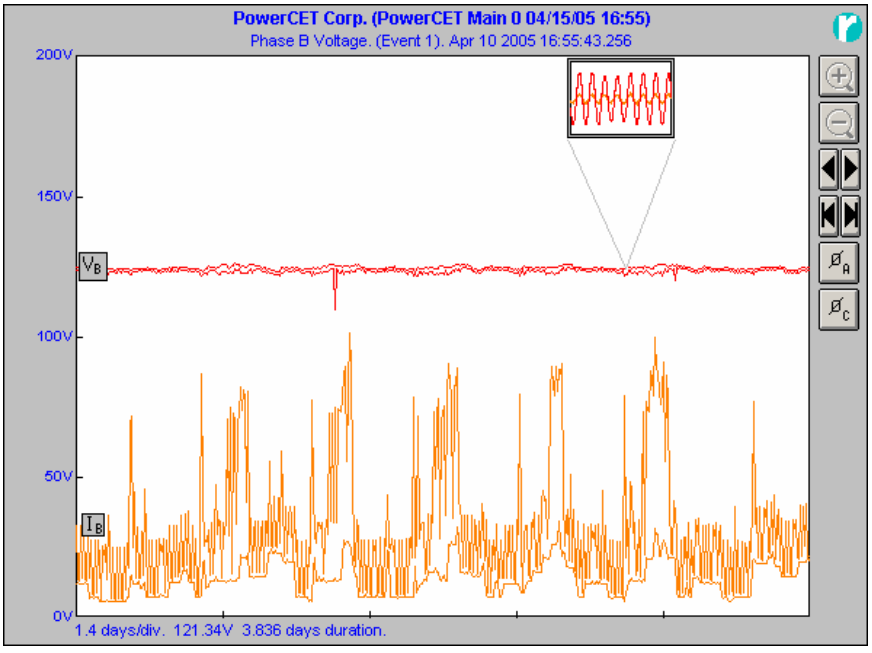
Waveshape faults are longer in duration than impulses and are shown in the middle of the Power Tolerance Envelope. They are often sub-cycle distortions of the AC sinusoid. However these distortions can last for a fraction of the single cycle period or they can continue for hundreds of milliseconds, hours or even days. All equipment which is not supplied by an Uninterruptible Power Supply, or whose power supply doesn't inherently have sufficient "ride through" to withstand the disturbance will be disrupted. Frequently these disturbances are associated with impulses. 2 **Waveshape faults occurred during the monitoring period.** Event 12, a typical Waveshape fault is shown below.

Sample Report



Voltage Surges and Sags:

The utility strives to keep RMS. levels within a +5%, -10% range of the nominal voltage. Surges are those RMS. levels which go above the +5% range. Sags are those RMS. levels which go below the -10% range. The duration is generally from a few cycles to a few seconds. 2 **RMS. events occurred during the monitoring period**. Event 1**,** a typical RMS. event is shown below.



Solutions Table:

The following table provides a general overview of the types of mitigation devices available for specific power quality phenomena. Often times the need for choosing the right mitigation device depends upon existing system parameters. This information in correlation with monitoring data allows for the implementation of the most economical and feasible electrical solutions.

Disturbance Type	*P1159 Category*	*Specific Phenomena*	*Solution*
Type I – Transients	Impulsive	Lightning, Electro-static Discharge	Filters Isolation Transformers Low-impedance Power Conditioners (LIPCs) On-Line UPS Surge Protective Devices (SPDs) Line Reactor Constant Voltage Transformers (high frequency)
	Oscillatory	Line/Load switching, power electronic device operation Capacitor switching Ferroresonance Transformer energization	
Type II – (0.5 cycles to 2 s)	Instantaneous and Momentary Short Duration Variations	System faults	Constant Voltage Transformers Energy Storage Technologies Magnetic Synthesizers Motor Generator Standby Power Supply Static Transfer Switch Static Voltage Regulator UPS System
Type III – (> 2 s)	Temporary Short Duration Variations (3s to 1 min)	System Protection, Maintenance	Energy Storage Technologies Motor Generator UPS System
	Sustained Interruption Undervoltage Overvoltage	Motor Starting, Load Variations, Load Dropping	Backup Generator Constant Voltage Transformers Energy Storage Technologies Voltage Regulators

Sample Report

Voltage, Current and Frequency Summaries

Voltage, Current and Frequency measurements for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55 from 04/15/05 16:55:41 through 04/22/05 16:55:41.

RMS. Voltages	Value	Date and Time
Phase A minimum	119.1V	Apr 20 2005 12:25:41
Phase A average	**122.8V**	
Phase A maximum	124.7V	Apr 15 2005 17:50:41
Phase B minimum	109.6V	Apr 19 2005 12:55:41
Phase B average	**124.0V**	
Phase B maximum	125.9V	Apr 18 2005 14:10:41
Phase C minimum	106.3V	Apr 19 2005 12:55:41
Phase C average	**123.1V**	
Phase C maximum	125.0V	Apr 21 2005 18:05:41
Neutral minimum	610.3mV	Apr 15 2005 17:10:41
Neutral average	**666.8mV**	
Neutral maximum	976.6mV	Apr 20 2005 22:30:41

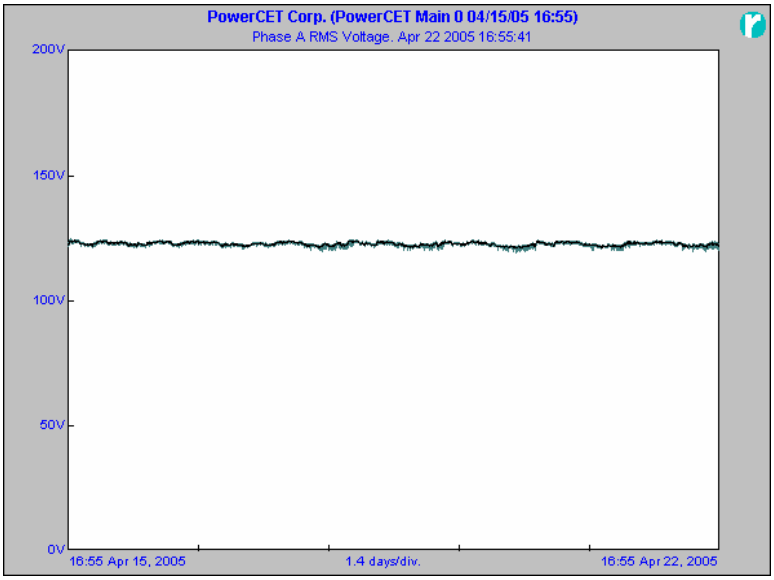
RMS. Currents	Value	Date and Time
Phase A minimum	14.17A	Apr 21 2005 06:00:41
Phase A average	**24.37A**	
Phase A maximum	125.0A	Apr 15 2005 17:20:41
Phase B minimum	5.859A	Apr 16 2005 16:25:41
Phase B average	**15.37A**	
Phase B maximum	101.2A	Apr 19 2005 16:30:41
Phase C minimum	4.632A	Apr 20 2005 22:50:41
Phase C average	**12.54A**	
Phase C maximum	111.3A	Apr 22 2005 14:10:41
Neutral minimum	4.944A	Apr 17 2005 13:10:41
Neutral average	**12.71A**	
Neutral maximum	77.27A	Apr 18 2005 08:10:41
Ground minimum	21.97mA	Apr 15 2005 21:05:41
Ground average	**24.01mA**	
Ground maximum	26.55mA	Apr 18 2005 04:05:41

Frequency	Value	Date and Time
Phase A minimum	59.89Hz	Apr 20 2005 07:40:41
Phase A average	**59.99Hz**	
Phase A maximum	60.05Hz	Apr 16 2005 06:05:41
Phase B minimum	59.89Hz	Apr 20 2005 07:40:41
Phase B average	**59.99Hz**	
Phase B maximum	60.05Hz	Apr 16 2005 06:05:41
Phase C minimum	59.89Hz	Apr 20 2005 07:40:41
Phase C average	**59.99Hz**	
Phase C maximum	60.05Hz	Apr 16 2005 06:05:41

Sample Report

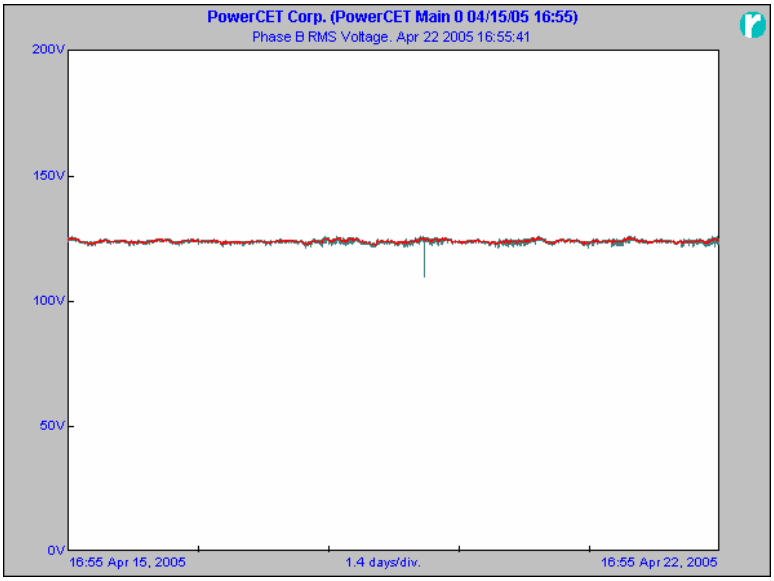
RMS. Voltage Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A Voltage Summary.



Min. 119.1V Apr 20 2005 12:25:41
Avg. 122.8V
Max. 124.7V Apr 15 2005 17:50:41

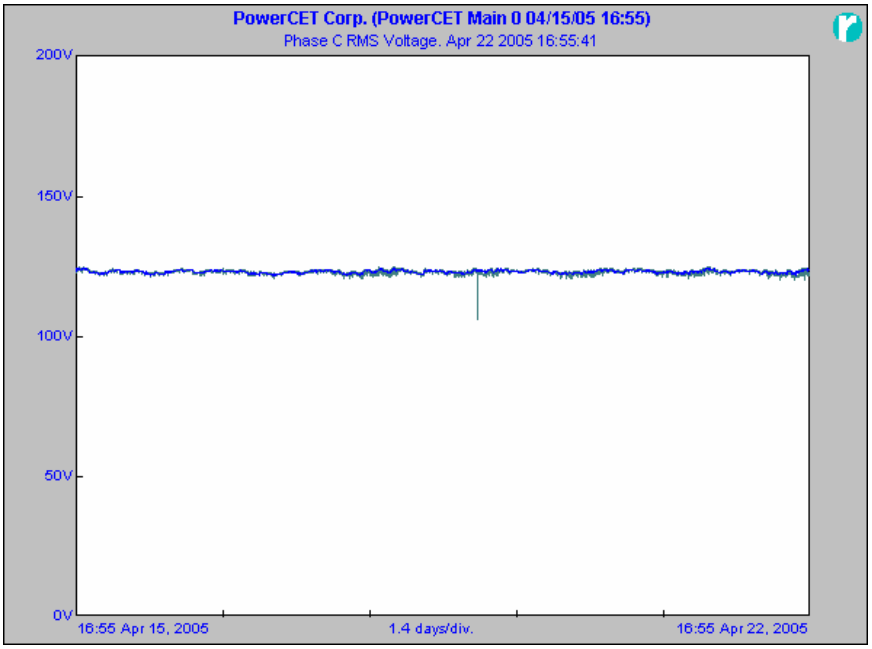
Phase B Voltage Summary.



Min. 109.6V Apr 19 2005 12:55:41
Avg. 124.0V
Max. 125.9V Apr 18 2005 14:10:41

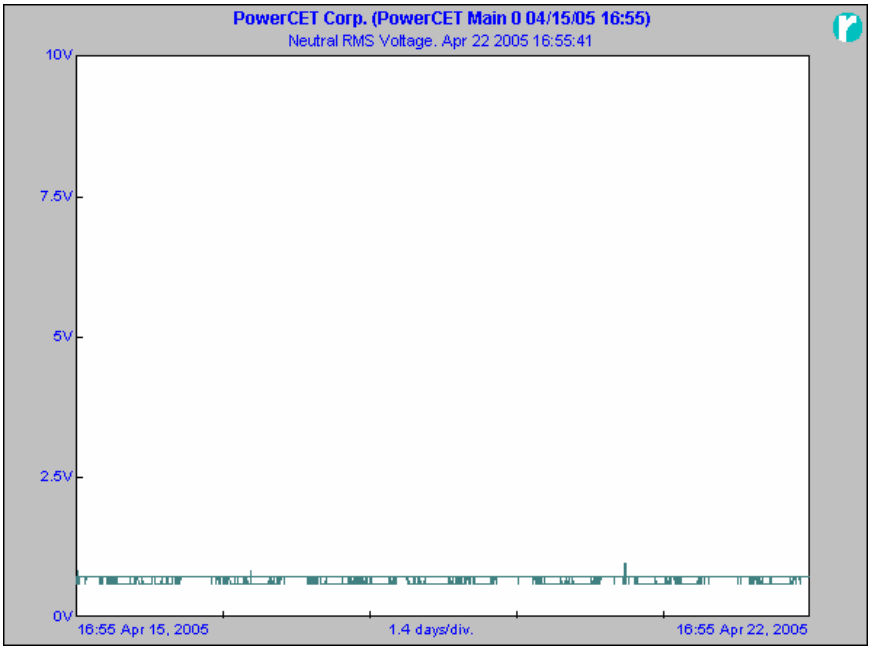
Sample Report

Phase C Voltage Summary.



Min.	106.3V	Apr 19 2005 12:55:41
Avg.	**123.1V**	
Max.	125.0V	Apr 21 2005 18:05:41

Neutral Voltage Summary.

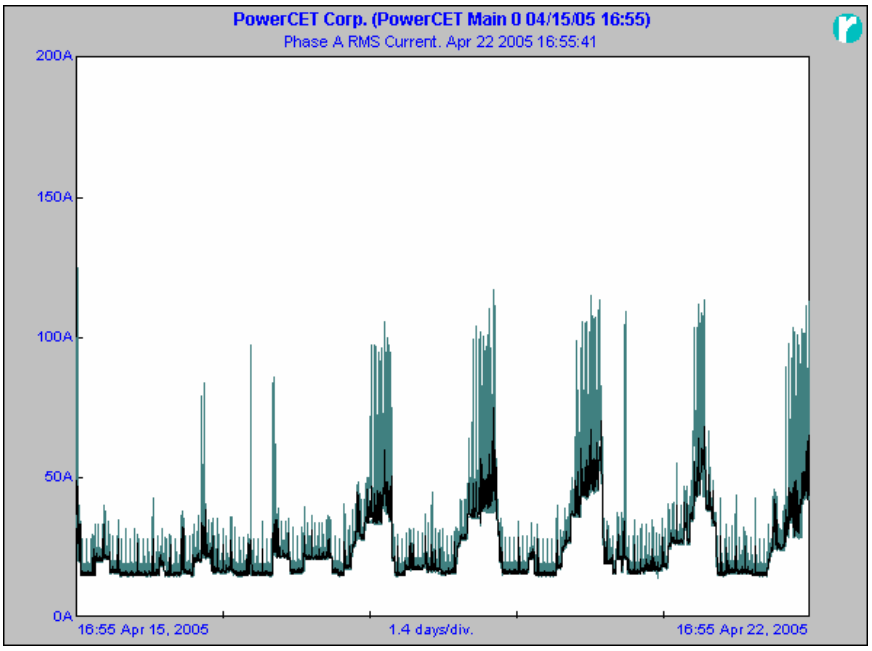


Min.	610.3mV	Apr 15 2005 17:10:41
Avg.	**666.8mV**	
Max.	976.6mV	Apr 20 2005 22:30:41

Sample Report

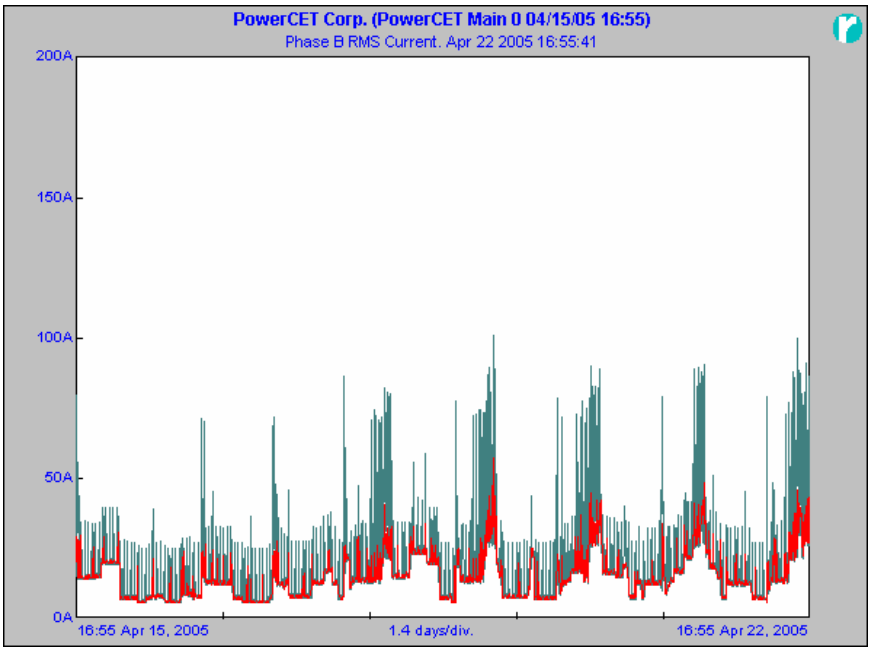
RMS. Current Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A Current Summary.



Min. 14.17A Apr 21 2005 06:00:41
Avg. 24.37A
Max. 125.0A Apr 15 2005 17:20:41

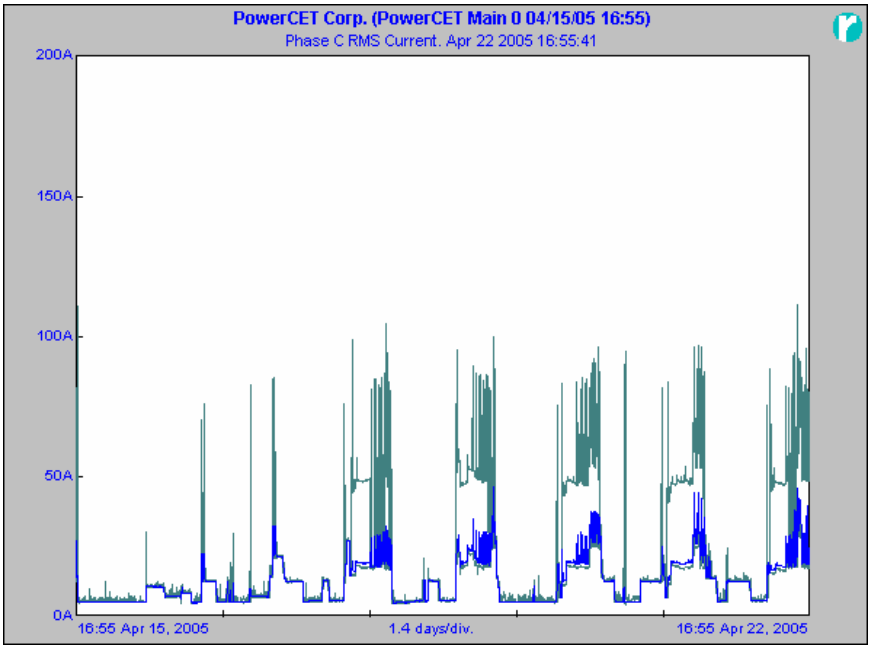
Phase B Current Summary.



Min. 5.859A Apr 16 2005 16:25:41
Avg. 15.37A
Max. 101.2A Apr 19 2005 16:30:41

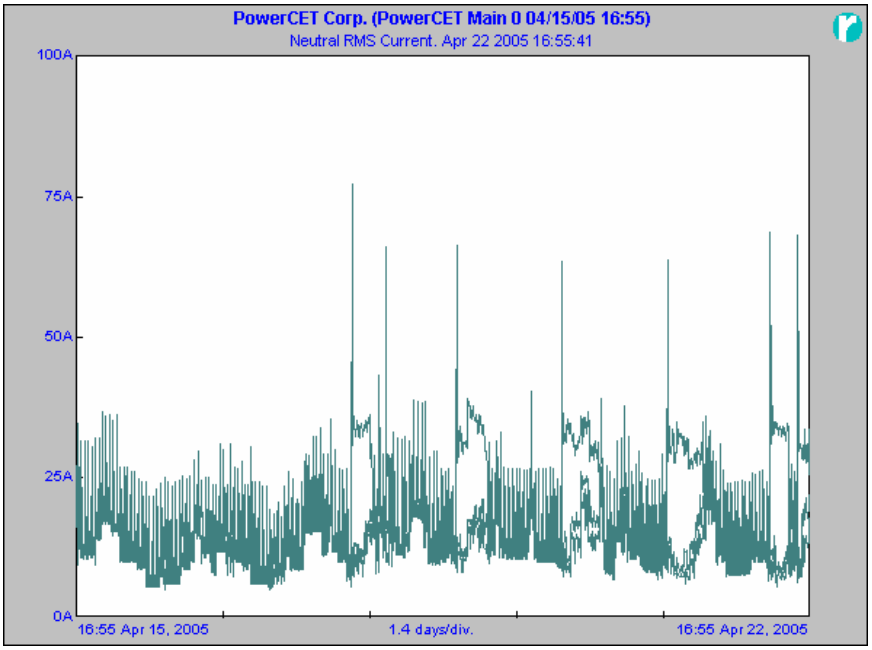
Sample Report

Phase C Current Summary.



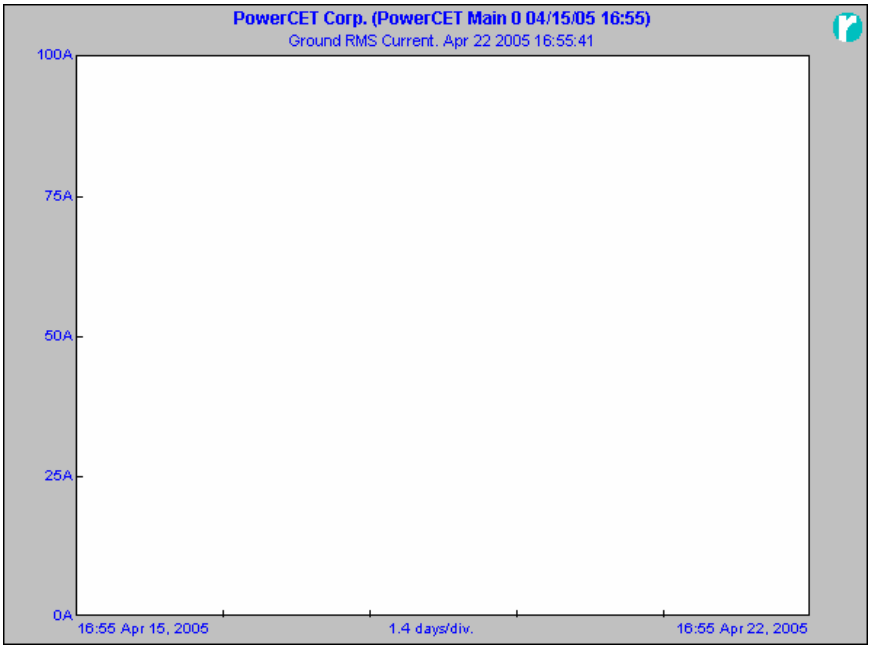
Min. 4.632A Apr 20 2005 22:50:41
Avg. 12.54A
Max. 111.3A Apr 22 2005 14:10:41

Neutral Current Summary.



Min. 4.944A Apr 17 2005 13:10:41
Avg. 12.71A
Max. 77.27A Apr 18 2005 08:10:41

Ground Current Summary.

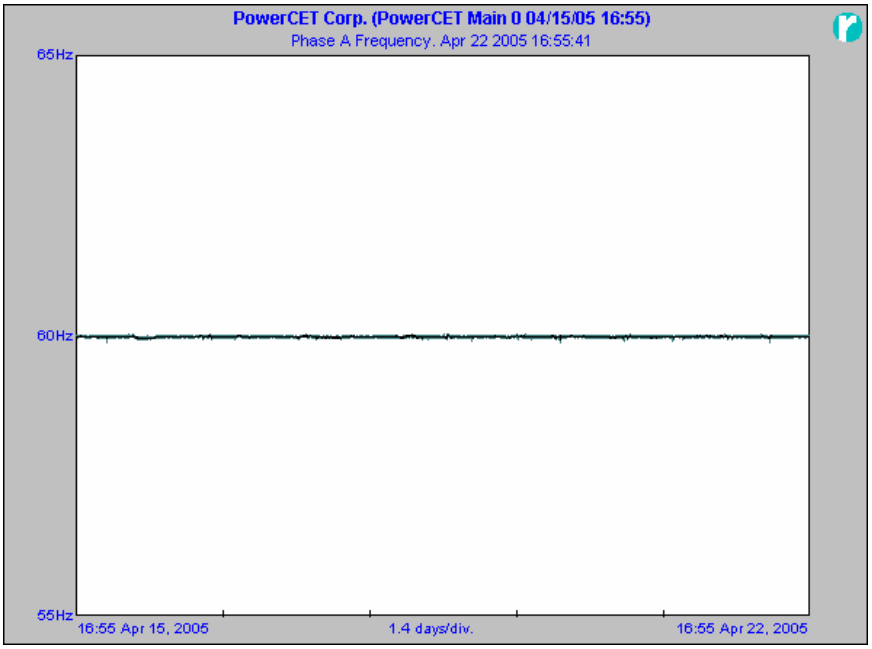


Min.	21.97mA	Apr 15 2005 21:05:41
Avg.	**24.01mA**	
Max.	26.55mA	Apr 18 2005 04:05:41

Sample Report

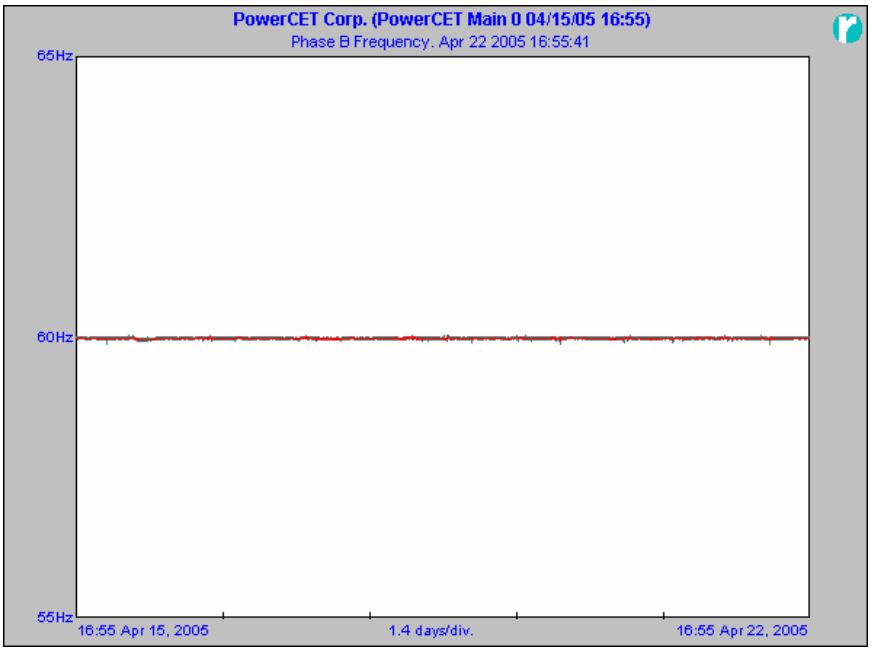
Frequency Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A Frequency Summary.



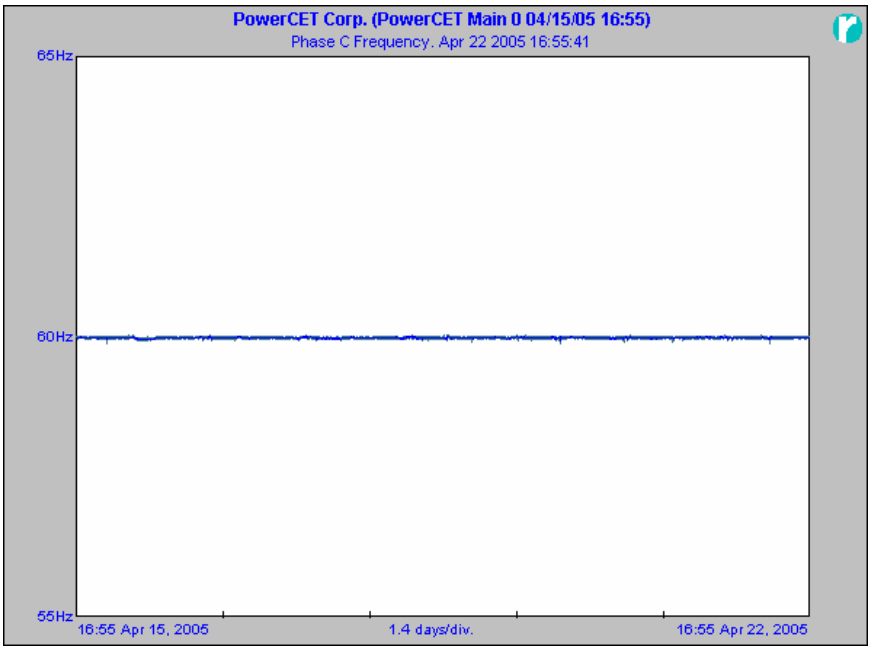
Min. 59.89Hz Apr 20 2005 07:40:41
Avg. 59.99Hz
Max. 60.05Hz Apr 16 2005 06:05:41

Phase B Frequency.



Min. 59.89Hz Apr 20 2005 07:40:41
Avg. 59.99Hz
Max. 60.05Hz Apr 16 2005 06:05:41

Phase C Frequency.



Min.	59.89Hz	Apr 20 2005 07:40:41
Avg.	**59.99Hz**	
Max.	60.05Hz	Apr 16 2005 06:05:41

Sample Report

Voltage and Current Distortion Summaries

Voltage and Current harmonic distortion measurements for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55 from 04/15/05 16:55:41 through 04/22/05 16:55:41.

Voltage Distortion	Value	Date and Time
Phase A minimum	1.16%	Apr 20 2005 03:05:41
Phase A average	**1.464%**	
Phase A maximum	2.03%	Apr 19 2005 12:05:41
Phase B minimum	1.3%	Apr 22 2005 02:05:41
Phase B average	**1.601%**	
Phase B maximum	1.96%	Apr 18 2005 16:40:41
Phase C minimum	1.14%	Apr 21 2005 02:45:41
Phase C average	**1.462%**	
Phase C maximum	1.89%	Apr 18 2005 17:20:41

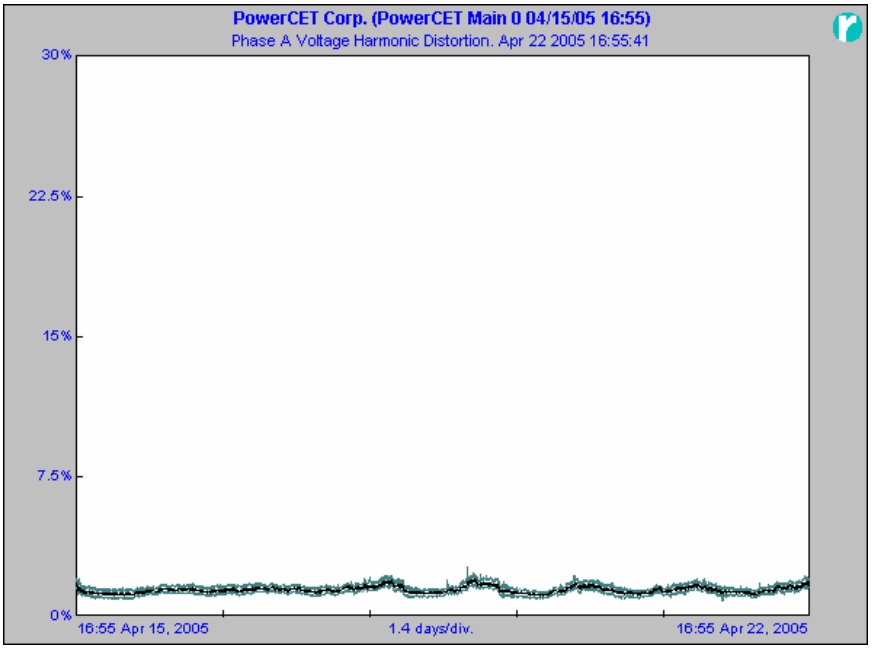
Current Distortion	Value	Date and Time
Phase A minimum	6.57%	Apr 19 2005 16:35:41
Phase A average	**14.76%**	
Phase A maximum	21.36%	Apr 17 2005 04:55:41
Phase B minimum	6.1%	Apr 22 2005 14:05:41
Phase B average	**21.47%**	
Phase B maximum	35.65%	Apr 16 2005 12:05:41
Phase C minimum	7.97%	Apr 22 2005 14:05:41
Phase C average	**30.28%**	
Phase C maximum	45.12%	Apr 18 2005 17:30:41

Voltage Flicker	Value	Date and Time
Phase A minimum	0.122	Apr 16 2005 04:25:41
Phase A average	**0.164**	
Phase A maximum	0.295	Apr 22 2005 14:15:41
Phase B minimum	0.123	Apr 17 2005 04:35:41
Phase B average	**0.165**	
Phase B maximum	1.342	Apr 19 2005 12:55:41
Phase C minimum	0.116	Apr 22 2005 01:55:41
Phase C average	**0.166**	
Phase C maximum	1.586	Apr 19 2005 12:55:41

Sample Report

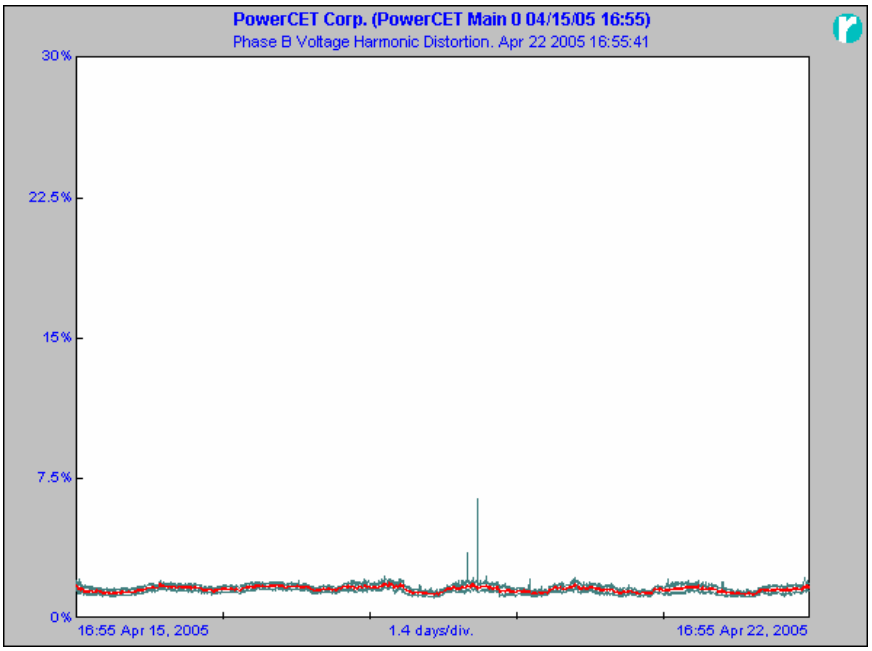
Voltage T.H.D. Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55 .

Phase A Voltage Distortion.



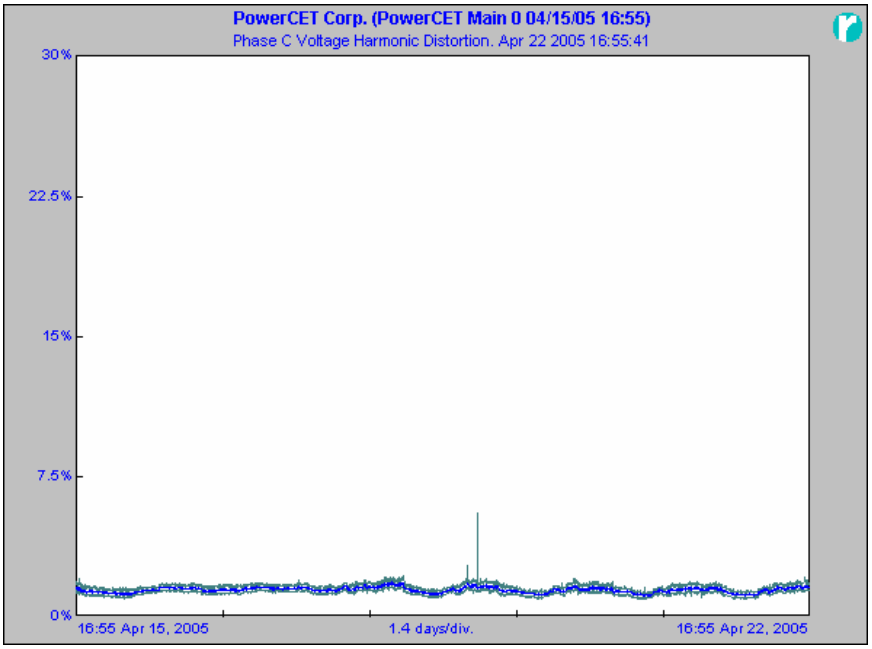
Min. 1.16% Apr 20 2005 03:05:41
Avg. 1.464%
Max. 2.03% Apr 19 2005 12:05:41

Phase B Voltage Distortion.



Min. 1.3% Apr 22 2005 02:05:41
Avg. 1.601%
Max. 1.96% Apr 18 2005 16:40:41

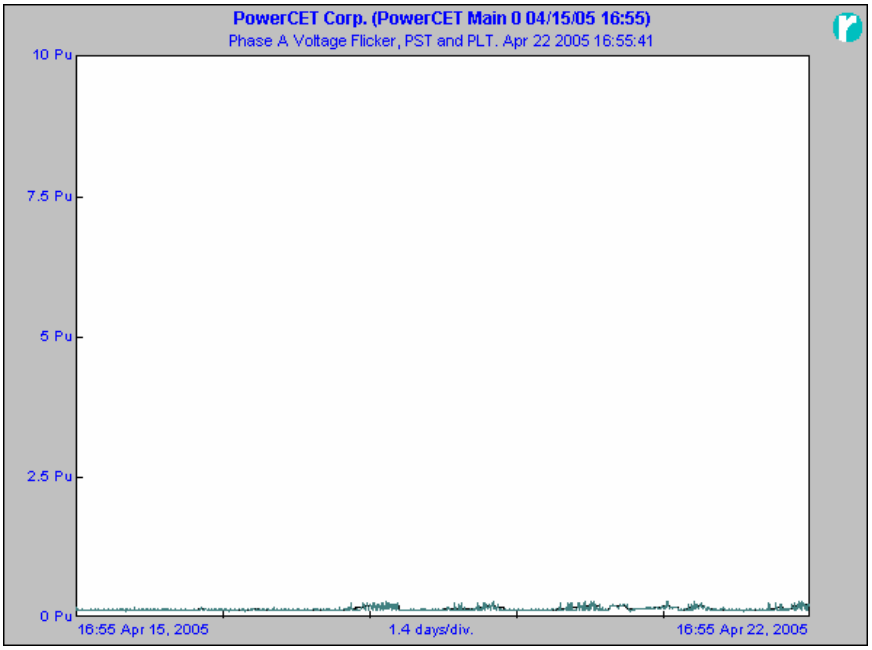
Phase C Voltage Distortion.



Min. 1.14% Apr 21 2005 02:45:41
Avg. 1.462%
Max. 1.89% Apr 18 2005 17:20:41

Voltage Flicker Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

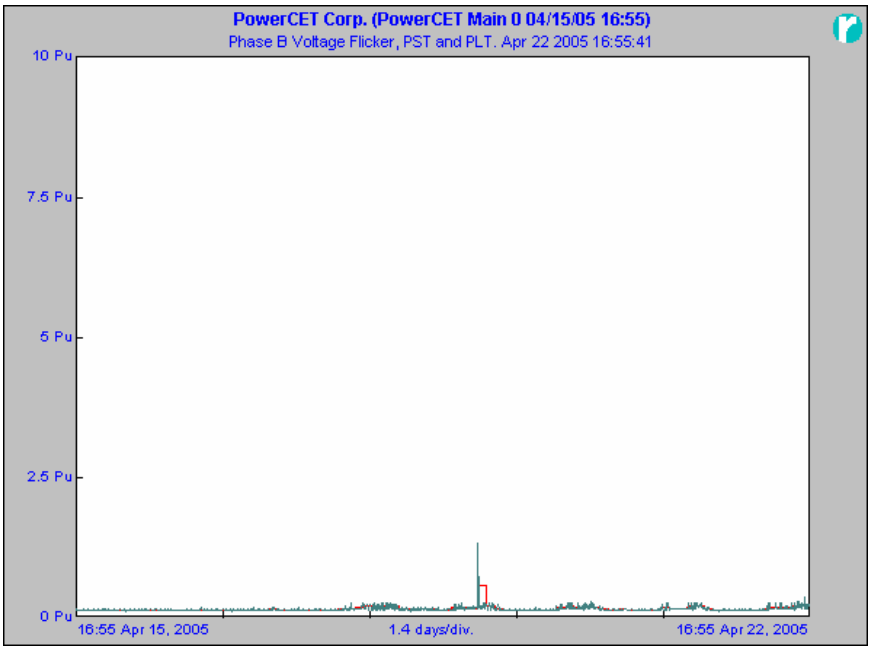
Phase A Voltage Flicker.



Min. 0.122 Apr 16 2005 04:25:41
Avg. 0.164
Max. 0.295 Apr 22 2005 14:15:41

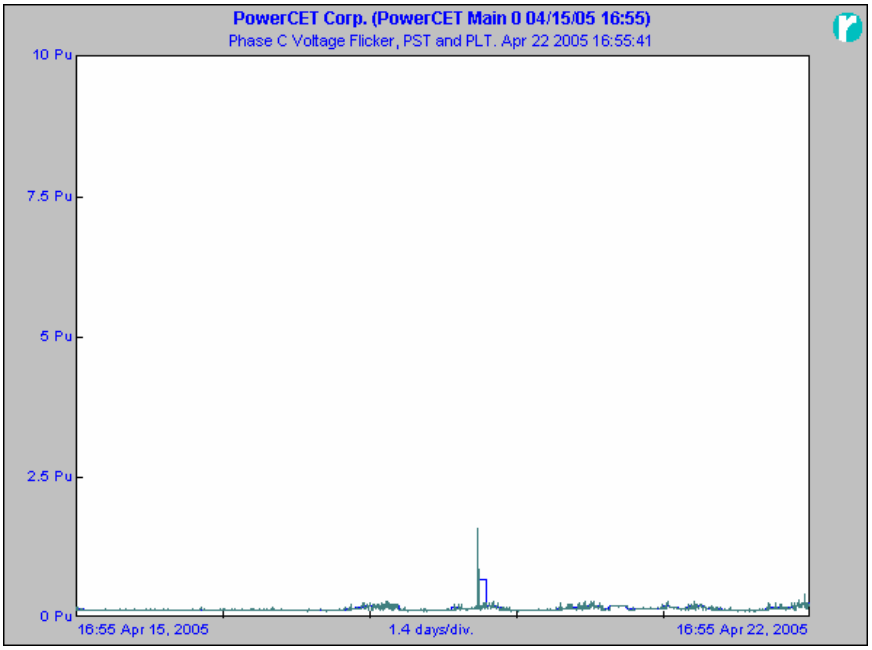
Sample Report

Phase B Voltage Flicker.



Min.	0.123	Apr 17 2005 04:35:41
Avg.	**0.165**	
Max.	1.342	Apr 19 2005 12:55:41

Phase C Voltage Flicker.

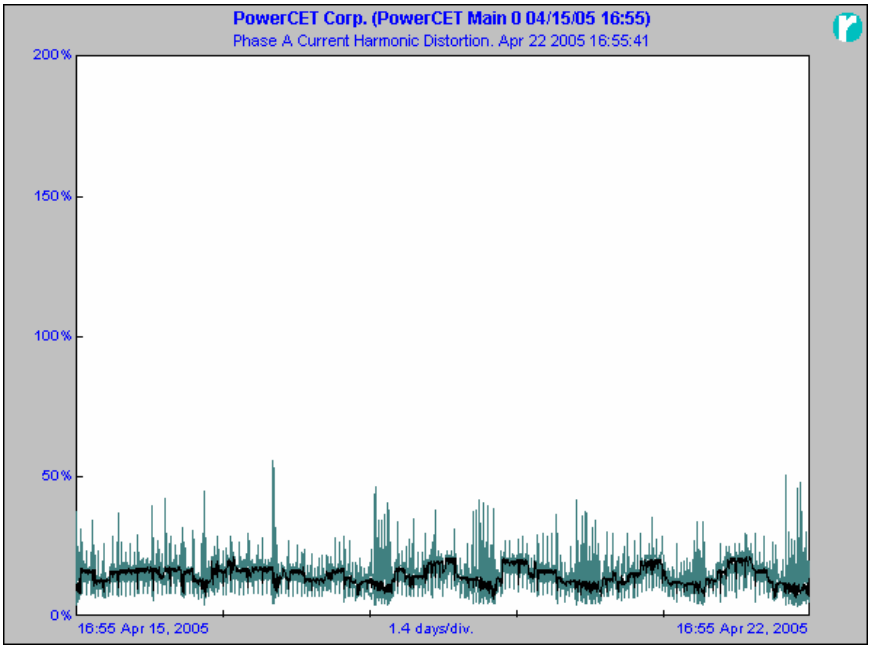


Min.	0.116	Apr 22 2005 01:55:41
Avg.	**0.166**	
Max.	1.586	Apr 19 2005 12:55:41

Sample Report

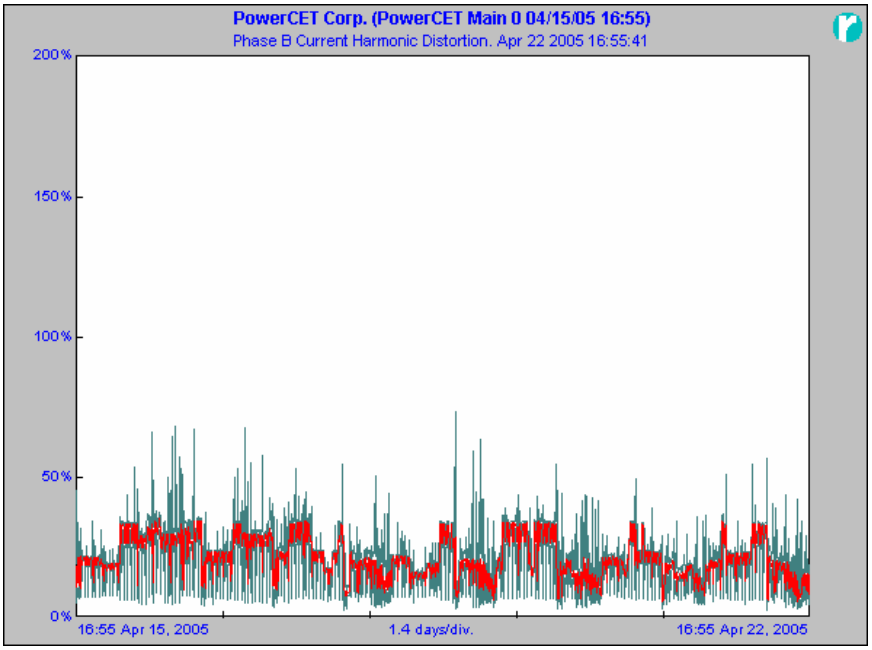
Current T.H.D. Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A Current Distortion.



Min.	6.57%	Apr 19 2005 16:35:41
Avg.	**14.76%**	
Max.	21.36%	Apr 17 2005 04:55:41

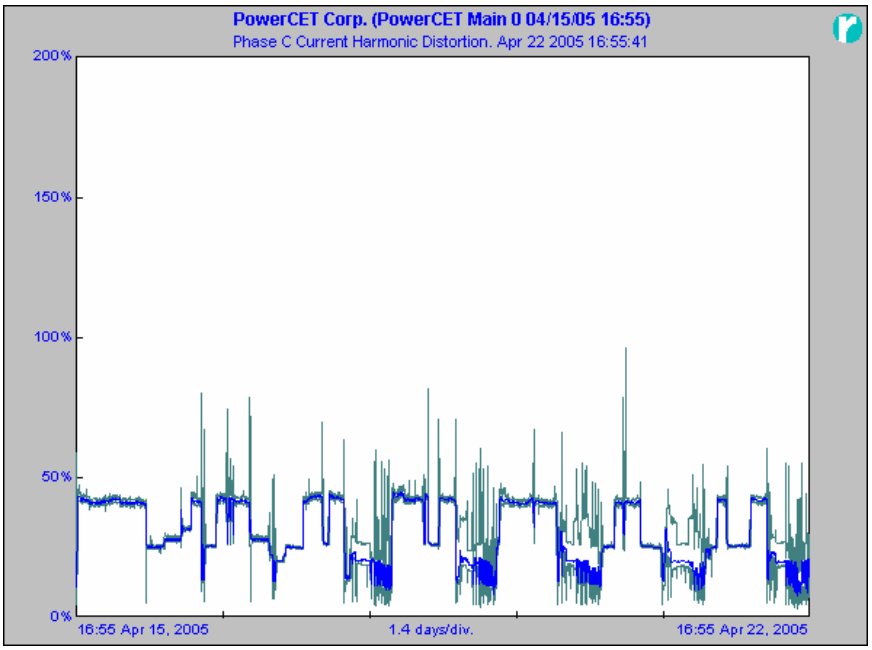
Phase B Current Distortion.



Min.	6.1%	Apr 22 2005 14:05:41
Avg.	**21.47%**	
Max.	35.65%	Apr 16 2005 12:05:41

Sample Report

Phase C Current Distortion.

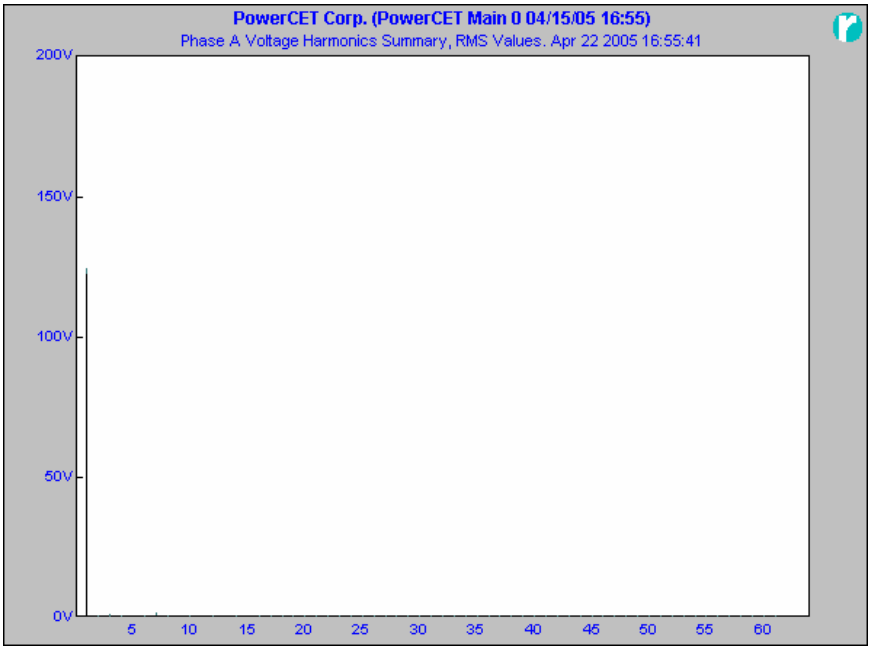


Min.	7.97%	Apr 22 2005 14:05:41
Avg.	**30.28%**	
Max.	45.12%	Apr 18 2005 17:30:41

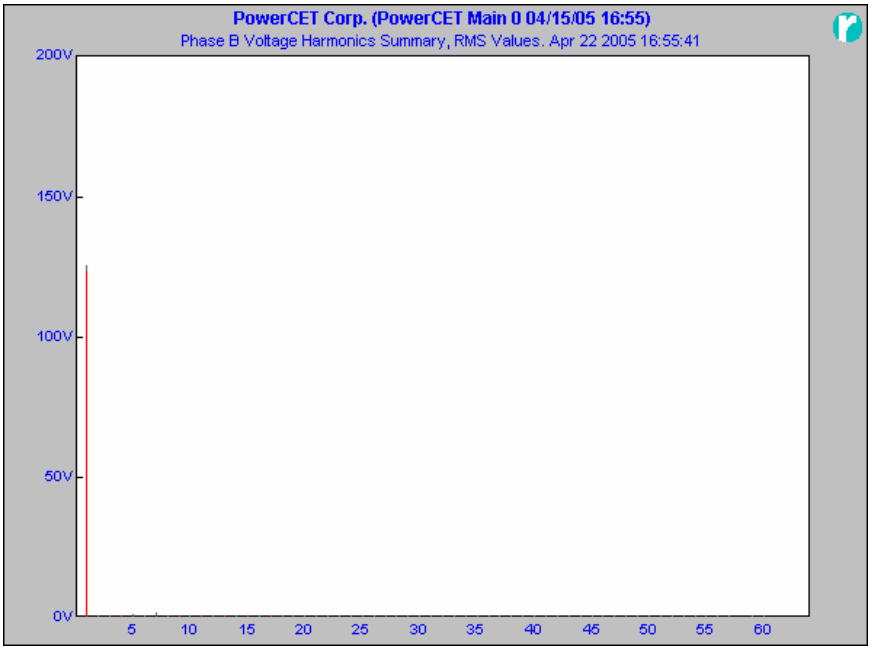
Sample Report

Voltage harmonic Summary for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A Voltage Harmonic Summary (RMS Values).

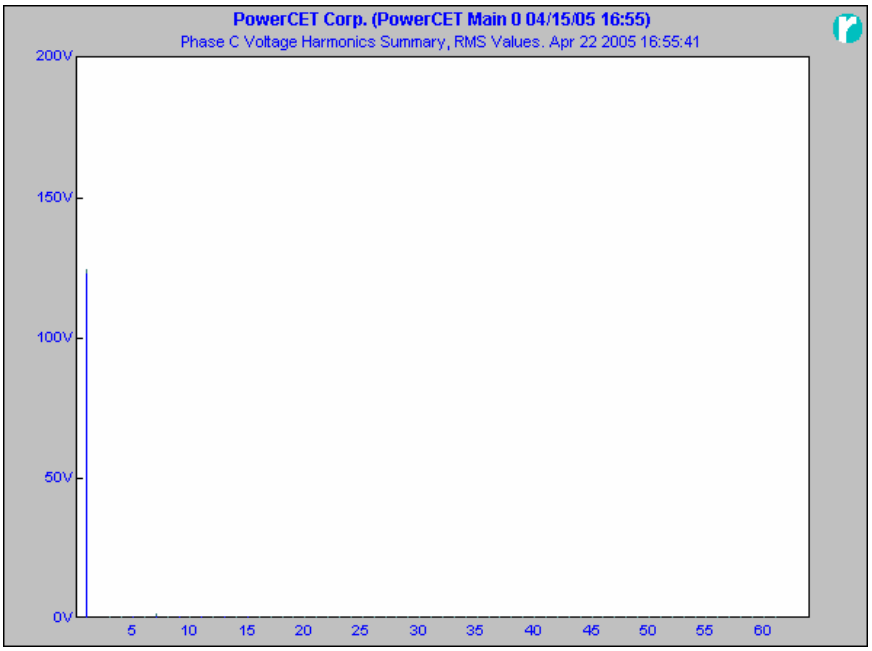


Phase B Voltage Harmonic Summary (RMS Values).

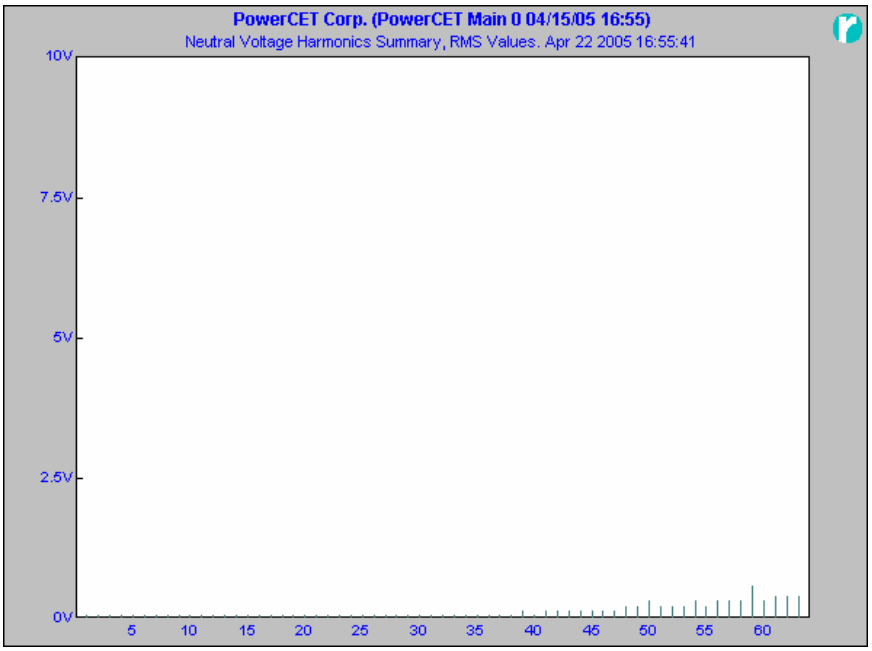


Sample Report

Phase C Voltage Harmonic Summary (RMS Values).



Neutral Voltage Harmonics (RMS Values).



The first 16 harmonics for the Phase A voltage are shown below (RMS Values):

Harmonic	Max Amplitude	Avg Amplitude
1	124.735	122.836
2	0.518	0.000
3	1.640	0.863
4	0.259	0.000
5	1.554	0.518
6	0.259	0.000
7	2.244	1.381
8	0.173	0.000
9	0.691	0.432
10	0.086	0.000
11	0.432	0.086
12	0.086	0.000
13	0.259	0.086
14	0.086	0.000
15	0.173	0.086
16	0.086	0.000

The first 16 harmonics for the Phase B voltage are shown below (RMS Values):

Harmonic	Max Amplitude	Avg Amplitude
1	125.944	124.045
2	0.518	0.000
3	1.554	0.950
4	0.259	0.086
5	1.726	0.604
6	0.345	0.000
7	2.417	1.467
8	0.173	0.000
9	0.863	0.518
10	0.259	0.000
11	0.432	0.173
12	0.086	0.000
13	0.259	0.173
14	0.086	0.000
15	0.173	0.086
16	0.086	0.000

The first 16 harmonics for the Phase C voltage are shown below (RMS Values):

Harmonic	**Max Amplitude**	**Avg Amplitude**
1	124.908	123.268
2	0.691	0.000
3	1.554	0.950
4	0.345	0.000
5	1.381	0.518
6	0.259	0.000
7	2.244	1.295
8	0.173	0.000
9	0.777	0.518
10	0.173	0.000
11	0.432	0.086
12	0.086	0.000
13	0.259	0.086
14	0.086	0.000
15	0.173	0.086
16	0.086	0.000

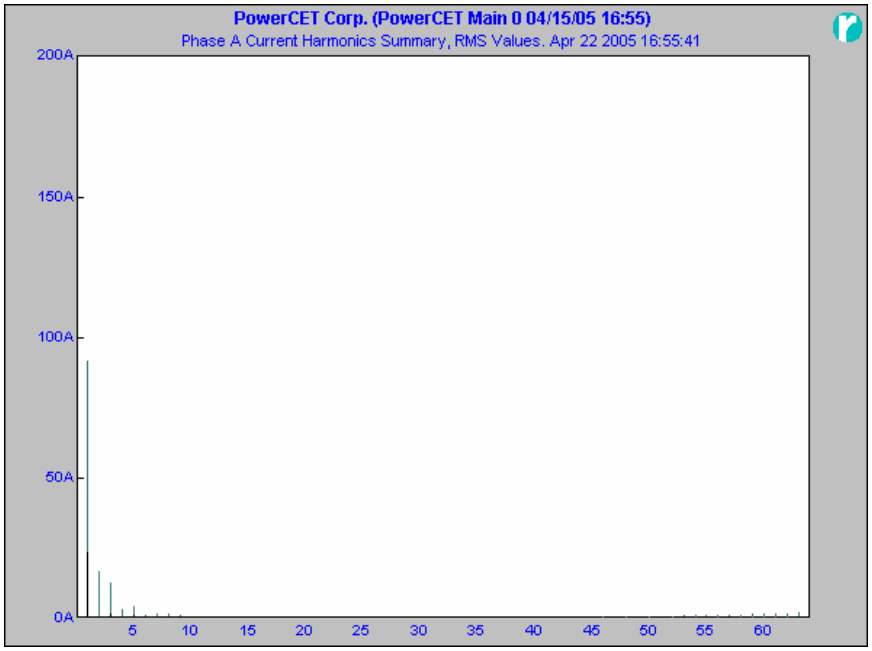
The first 16 harmonics for the neutral voltage are shown below (RMS Values):

Harmonic	**Max Amplitude**	**Avg Amplitude**
1	0.086	0.000
2	0.086	0.000
3	0.086	0.000
4	0.086	0.000
5	0.086	0.000
6	0.086	0.000
7	0.086	0.000
8	0.086	0.000
9	0.086	0.000
10	0.086	0.000
11	0.086	0.000
12	0.086	0.000
13	0.086	0.000
14	0.086	0.000
15	0.086	0.000
16	0.086	0.000

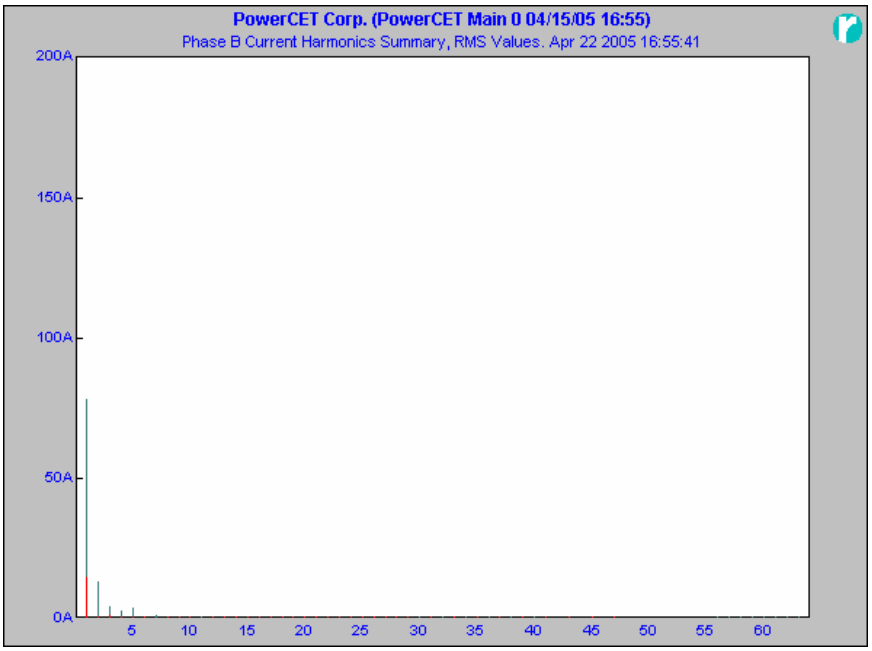
Sample Report

Current harmonic Summary for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

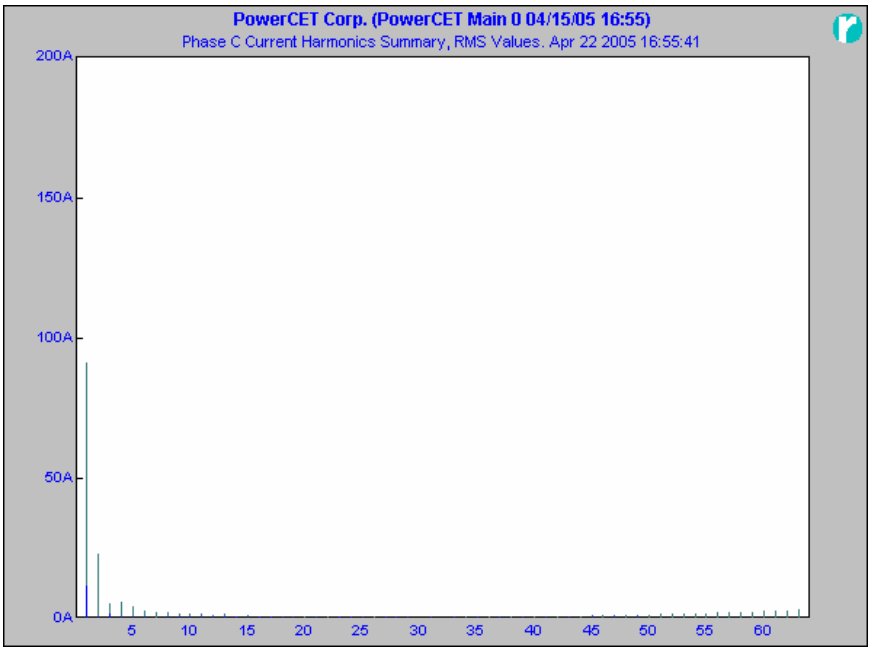
Phase A Current Harmonic Summary (RMS Values).



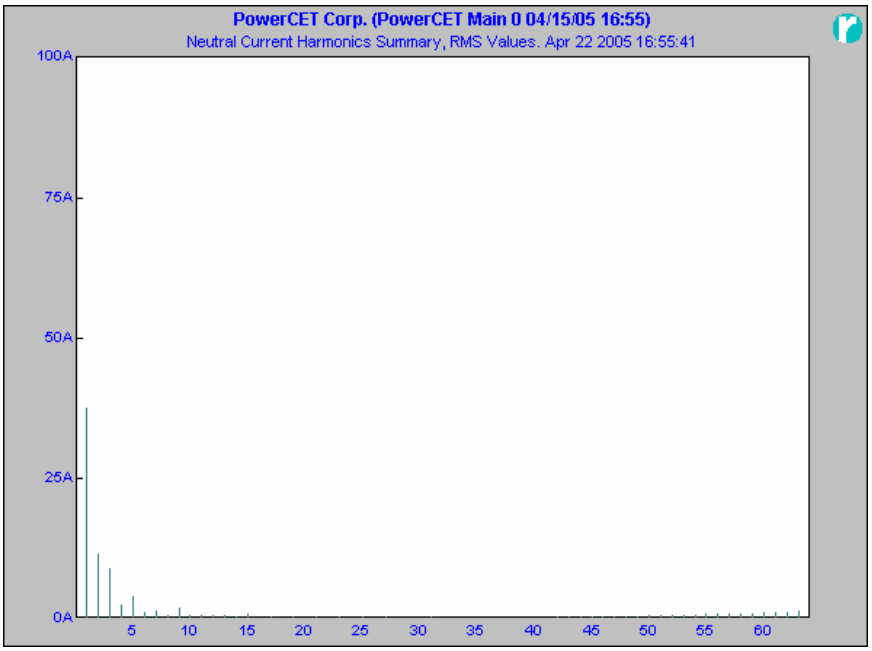
Phase B Current Harmonic Summary (RMS Values).



Phase C Current Harmonic Summary (RMS Values).



Neutral Current Harmonics (RMS Values).



The first 16 harmonics for the Phase A current are shown below (RMS Values):

Harmonic	**Max Amplitude**	**Avg**
Amplitude		
1	91.985	24.136
2	17.221	0.129
3	13.000	2.344
4	3.664	0.078
5	5.024	1.683
6	1.606	0.026
7	2.434	1.075
8	2.111	0.026
9	1.580	0.401
10	1.541	0.013
11	1.398	0.388
12	1.114	0.013
13	1.541	0.324
14	1.256	0.013
15	1.139	0.233
16	1.049	0.013

The first 16 harmonics for the Phase B current are shown below (RMS Values):

Harmonic	**Max Amplitude**	**Avg**
Amplitude		
1	78.687	15.098
2	13.894	0.091
3	4.726	2.033
4	3.133	0.026
5	4.648	1.075
6	1.515	0.013
7	1.683	0.751
8	1.243	0.013
9	1.334	0.479
10	1.088	0.013
11	1.269	0.557
12	0.842	0.013
13	1.139	0.466
14	0.712	0.013
15	0.764	0.155
16	0.596	0.013

The first 16 harmonics for the Phase C current are shown below (RMS Values):

Harmonic	Max Amplitude	Avg
Amplitude		
1	91.635	12.158
2	23.799	0.285
3	6.086	2.098
4	6.358	0.078
5	4.920	1.463
6	3.289	0.026
7	2.719	0.764
8	2.875	0.013
9	2.499	0.350
10	2.447	0.013
11	2.227	0.298
12	1.955	0.013
13	2.240	0.337
14	1.528	0.013
15	1.722	0.259
16	1.398	0.013

The first 16 harmonics for the neutral current are shown below (RMS Values):

Harmonic	Max Amplitude	Avg
Amplitude		
1	37.680	10.877
2	11.783	0.259
3	9.323	5.697
4	2.849	0.129
5	4.402	0.906
6	1.424	0.000
7	1.813	0.518
8	1.036	0.000
9	2.331	1.036
10	0.906	0.000
11	0.906	0.259
12	0.906	0.000
13	1.036	0.259
14	0.777	0.000
15	1.165	0.388
16	0.518	0.000

Sample Report

Power Summaries

Power measurements for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55 from 04/15/05 16:55:41 through 04/22/05 16:55:41.

Imbalance	Value	Date and Time
Minimum Voltage Imbalance	0%	Apr 20 2005 01:00:41
Average Voltage Imbalance	**0.562%**	
Maximum Voltage Imbalance	1.25%	Apr 20 2005 14:00:41
Minimum Current Imbalance	0.71%	Apr 22 2005 14:05:41
Average Current Imbalance	**48.58%**	
Maximum Current Imbalance	92.03%	Apr 16 2005 20:55:41

VA Power	Value	Date and Time
Phase A minimum	1.730kVA	Apr 21 2005 06:00:41
Phase A average	**2.992kVA**	
Phase A maximum	14.16kVA	Apr 19 2005 16:30:41
Phase B minimum	725.4VA	Apr 16 2005 14:00:41
Phase B average	**1.909kVA**	
Phase B maximum	12.46kVA	Apr 19 2005 16:30:41
Phase C minimum	576.1VA	Apr 20 2005 22:50:41
Phase C average	**1.546kVA**	
Phase C maximum	13.55kVA	Apr 22 2005 14:10:41
Total minimum	3.308kVA	Apr 16 2005 08:50:41
Total average	**6.448kVA**	
Total maximum	21.97kVA	Apr 19 2005 16:35:41

VARS Power	Value	Date and Time
Phase A minimum	-15.23kVAR	Apr 15 2005 17:20:41
Phase A average	**-609.6VAR**	
Phase A maximum	5.118kVAR	Apr 19 2005 16:50:41
Phase B minimum	-4.262kVAR	Apr 15 2005 17:20:41
Phase B average	**-497.8VAR**	
Phase B maximum	7.524kVAR	Apr 22 2005 07:05:41
Phase C minimum	-13.65kVAR	Apr 15 2005 17:20:41
Phase C average	**-79.04VAR**	
Phase C maximum	10.06kVAR	Apr 17 2005 09:00:41
Total minimum	-2.793kVAR	Apr 15 2005 17:15:41
Total average	**-1.186kVAR**	
Total maximum	2.644kVAR	Apr 22 2005 16:15:41

Sample Report

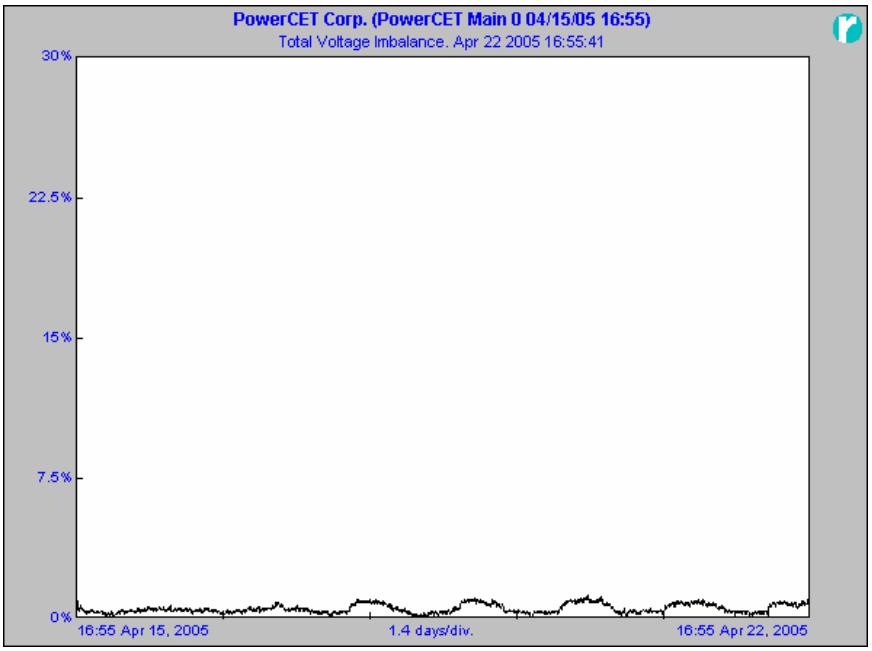
Watts Power	Value	Date and Time
Phase A minimum	1.633kW	Apr 21 2005 06:00:41
Phase A average	**2.890kW**	
Phase A maximum	13.29kW	Apr 19 2005 16:30:41
Phase B minimum	482.1W	Apr 16 2005 14:40:41
Phase B average	**1.804kW**	
Phase B maximum	11.98kW	Apr 19 2005 16:30:41
Phase C minimum	394.9W	Apr 20 2005 22:50:41
Phase C average	**1.466kW**	
Phase C maximum	13.38kW	Apr 22 2005 14:10:41
Total minimum	2.849kW	Apr 16 2005 08:50:41
Total average	**6.160kW**	
Total maximum	21.68kW	Apr 19 2005 16:35:41

Demand Power	Value	Date and Time
Phase A minimum	1.716kW	Apr 16 2005 10:00:41
Phase A average	**2.890kW**	
Phase A maximum	8.435kW	Apr 22 2005 16:50:41
Phase B minimum	508.0W	Apr 16 2005 15:30:41
Phase B average	**1.804kW**	
Phase B maximum	5.934kW	Apr 19 2005 16:35:41
Phase C minimum	566.9W	Apr 16 2005 20:25:41
Phase C average	**1.466kW**	
Phase C maximum	5.327kW	Apr 22 2005 14:10:41
Total minimum	2.914kW	Apr 16 2005 07:55:41
Total average	**6.161kW**	
Total maximum	18.89kW	Apr 19 2005 16:35:41

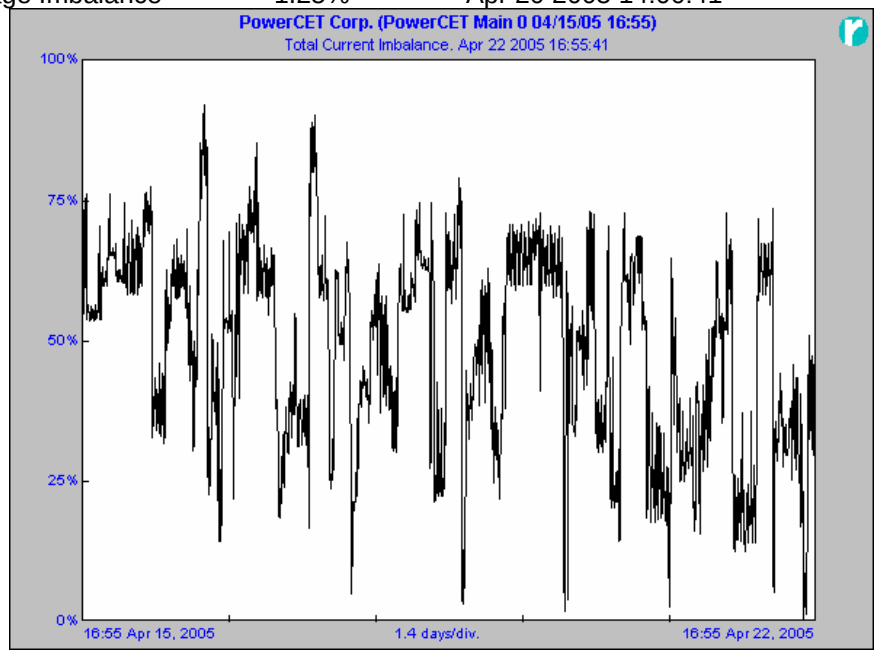
Power Factor	Value	Date and Time
Phase A minimum	0.173 Lead	Apr 15 2005 17:20:41
Phase A average	**0.957 Lead**	
Phase A maximum	0.786 Lag	Apr 16 2005 22:15:41
Phase B minimum	0.148 Lead	Apr 17 2005 09:00:41
Phase B average	**0.928 Lead**	
Phase B maximum	0.551 Lag	Apr 22 2005 07:05:41
Phase C minimum	0.050 Lead	Apr 20 2005 22:50:41
Phase C average	**0.954 Lead**	
Phase C maximum	0.521 Lag	Apr 17 2005 12:00:41
Total minimum	0.991	Apr 22 2005 14:45:41
Total average	**0.944**	
Total maximum	0.858	Apr 16 2005 16:20:41

Sample Report

Voltage and Current Imbalance Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.



Minimum Voltage Imbalance	0%	Apr 20 2005 01:00:41
Average Voltage Imbalance	**0.562%**	
Maximum Voltage Imbalance	1.25%	Apr 20 2005 14:00:41

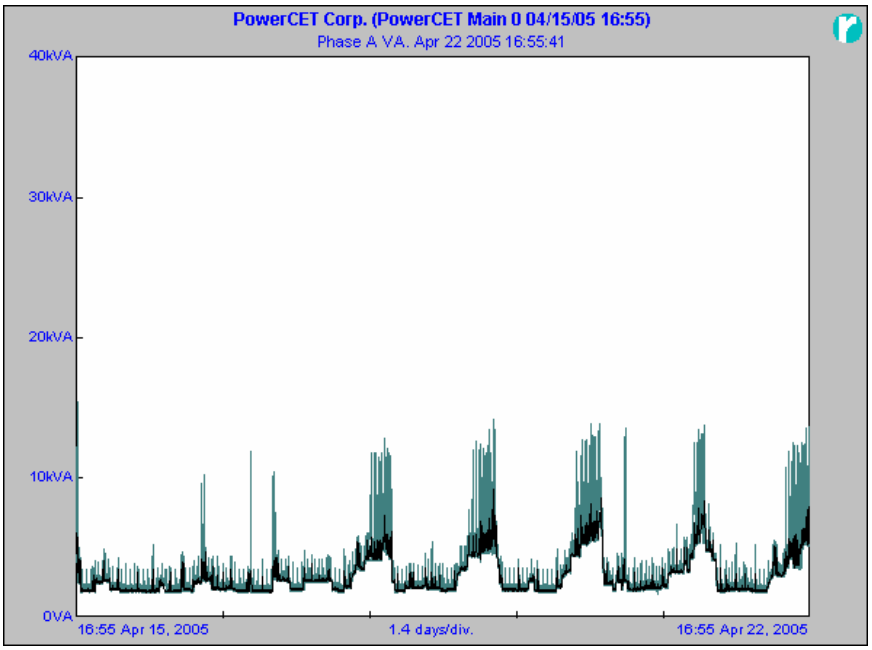


Minimum Current Imbalance	0.71%	Apr 22 2005 14:05:41
Average Current Imbalance	**48.58%**	
Maximum Current Imbalance	92.03%	Apr 16 2005 20:55:41

Sample Report

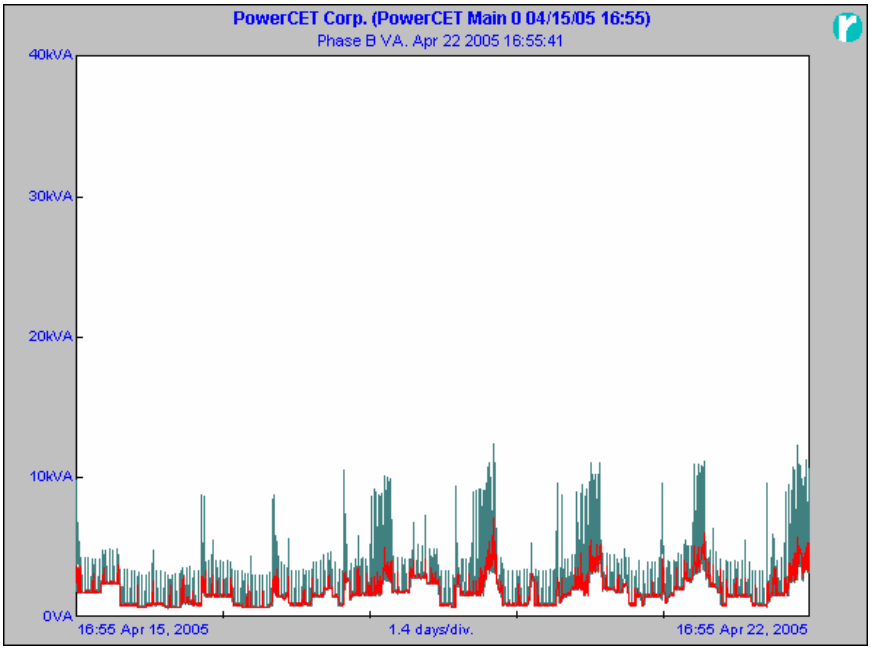
VA Power Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A VA Summary.



Min. 1.730kVA Apr 21 2005 06:00:41
Avg. 2.992kVA
Max. 14.16kVA Apr 19 2005 16:30:41

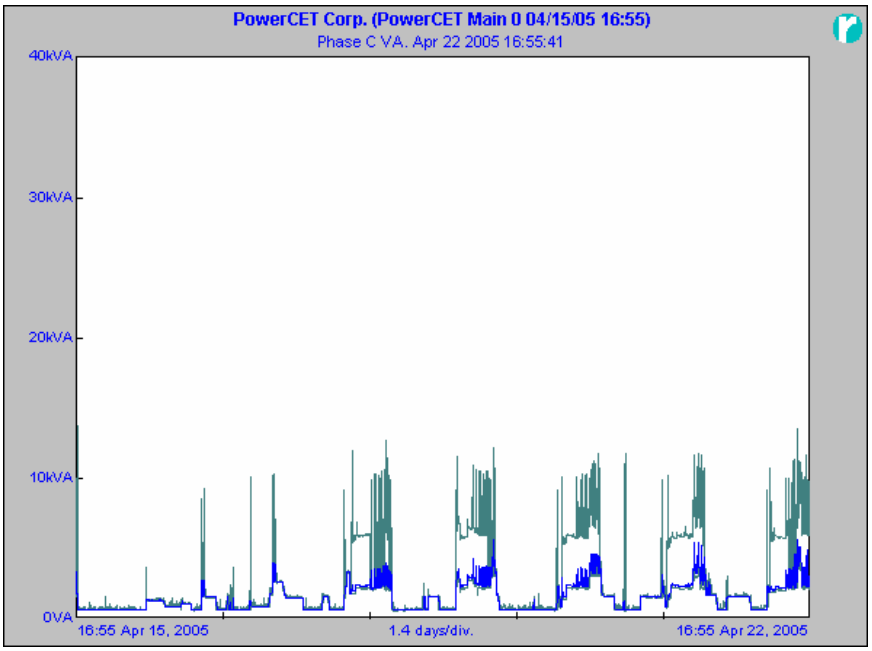
Phase B VA Summary.



Min. 725.4VA Apr 16 2005 14:00:41
Avg. 1.909kVA
Max. 12.46kVA Apr 19 2005 16:30:41

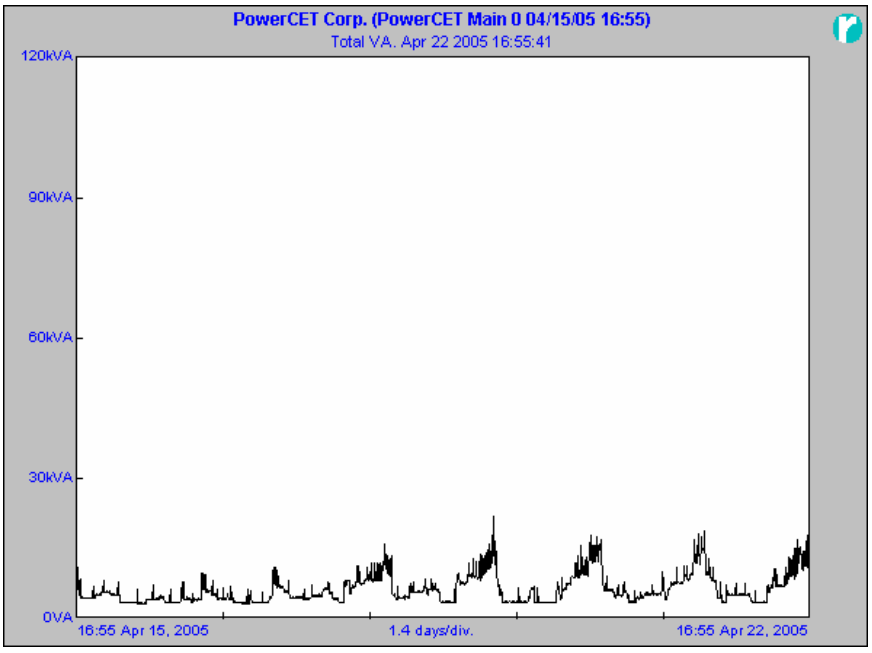
Sample Report

Phase C VA Summary.



Min. 576.1VA Apr 20 2005 22:50:41
Avg. 1.546kVA
Max. 13.55kVA Apr 22 2005 14:10:41

Total VA Summary.

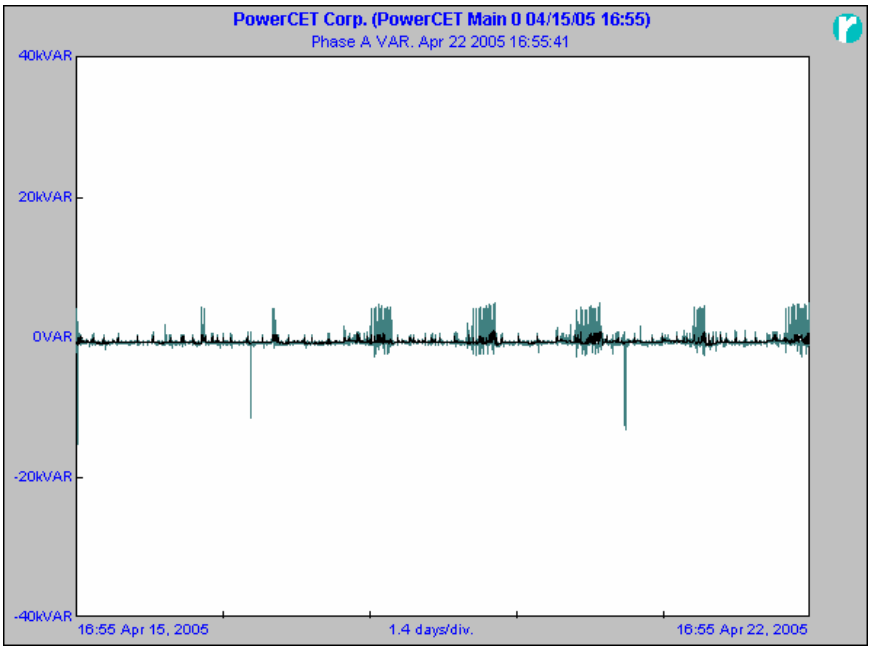


Min. 3.308kVA Apr 16 2005 08:50:41
Avg. 6.448kVA
Max. 21.97kVA Apr 19 2005 16:35:41

Sample Report

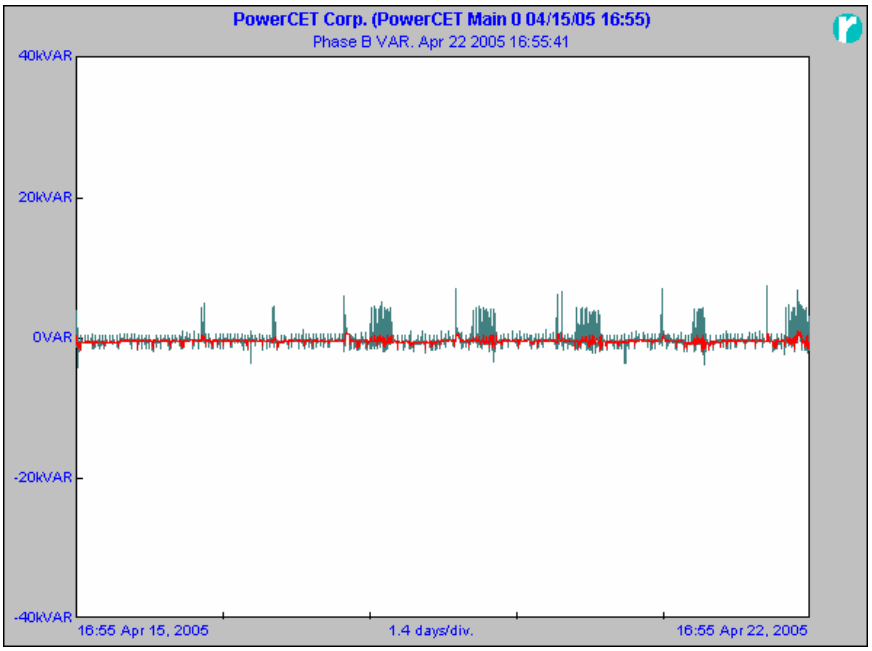
VARS Power Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A VARS Summary.



Min. -15.23kVARApr 15 2005 17:20:41
Avg. -609.6VAR
Max. 5.118kVAR Apr 19 2005 16:50:41

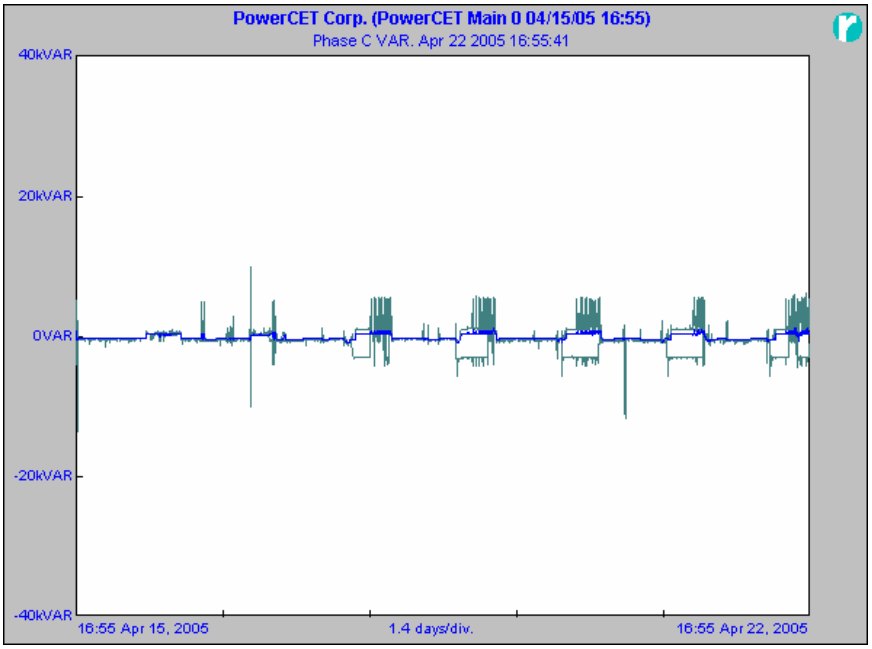
Phase B VARS. Summary.



Min. -4.262kVARApr 15 2005 17:20:41
Avg. -497.8VAR
Max. 7.524kVAR Apr 22 2005 07:05:41

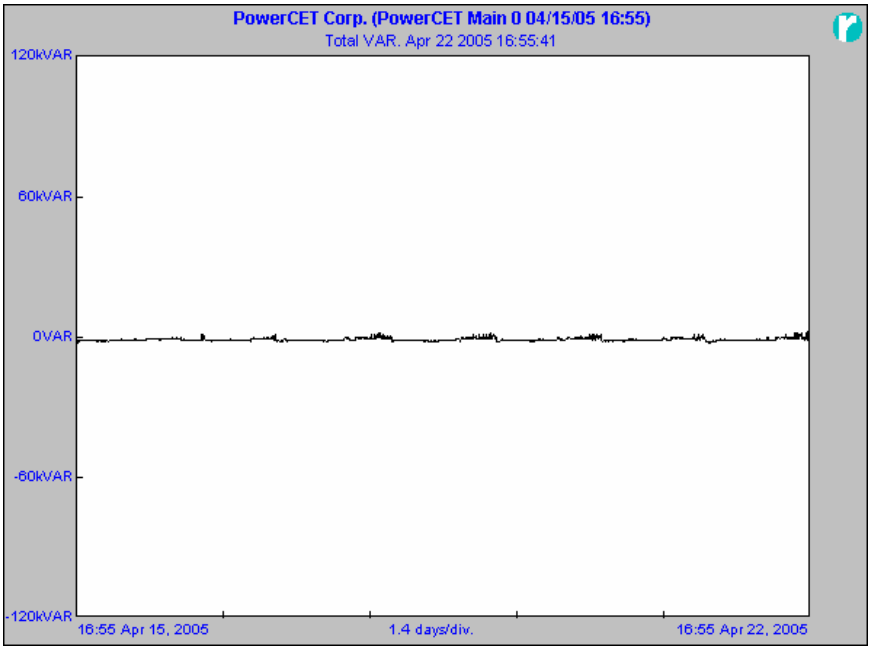
Sample Report

Phase C VARS. Summary.



Min. -13.65kVARApr 15 2005 17:20:41
Avg. -79.04VAR
Max. 10.06kVAR Apr 17 2005 09:00:41

Total VARS Summary.

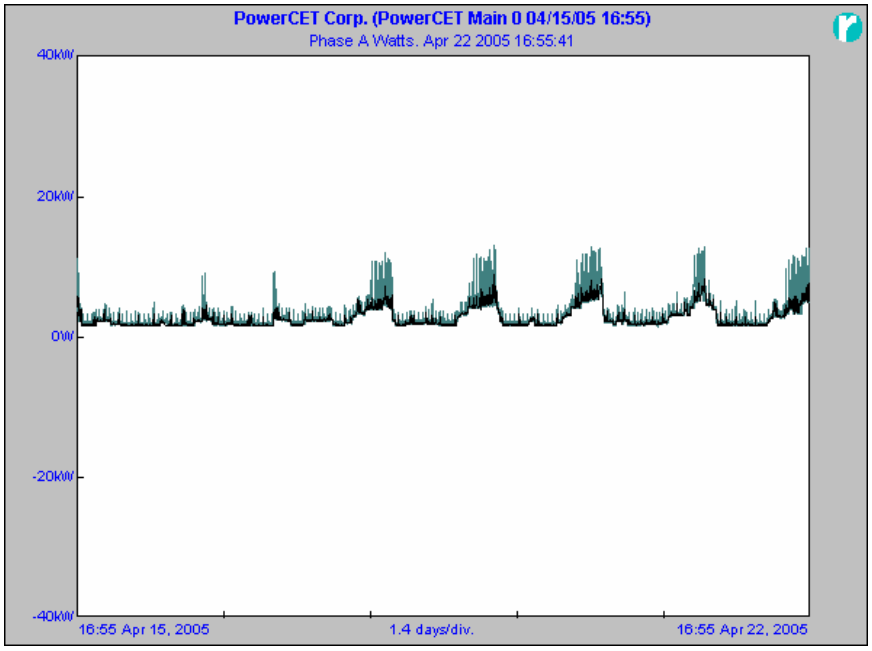


Min. -2.793kVARApr 15 2005 17:15:41
Avg. -1.186kVAR
Max. 2.644kVAR Apr 22 2005 16:15:41

Sample Report

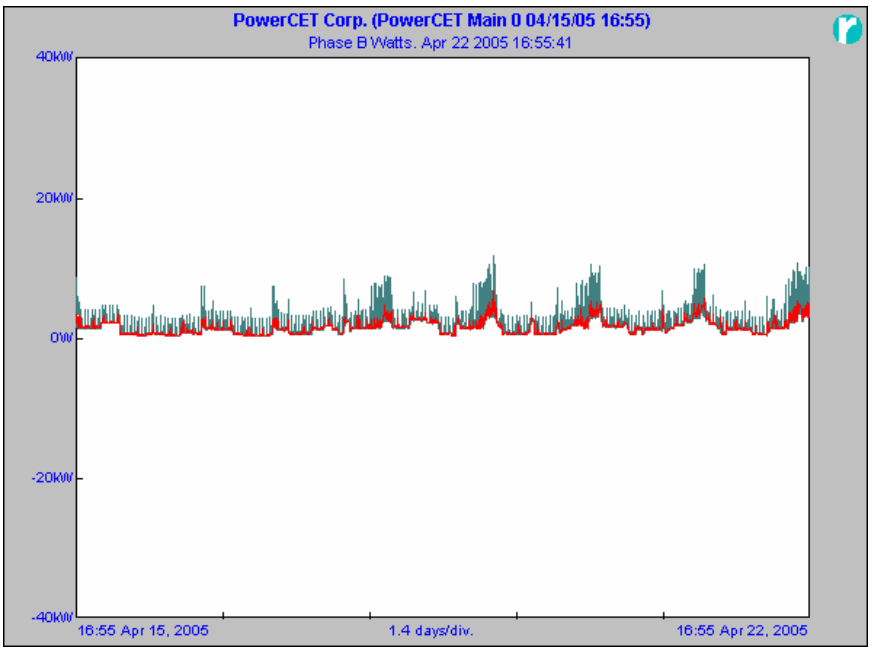
WATTS Power Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A Watts Summary.



Min. 1.633kW Apr 21 2005 06:00:41
Avg. 2.890kW
Max. 13.29kW Apr 19 2005 16:30:41

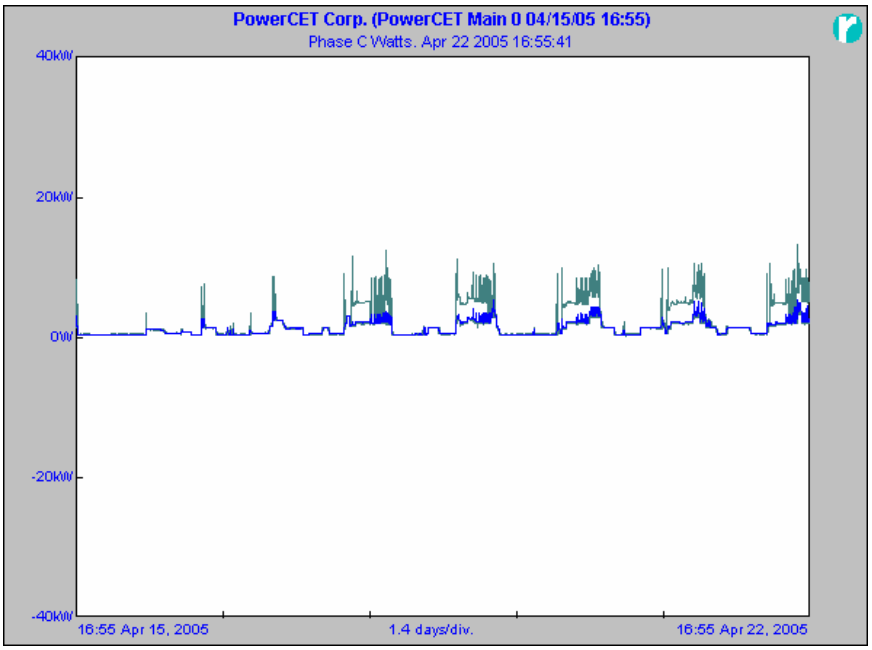
Phase B Watts. Summary.



Min. 482.1W Apr 16 2005 14:40:41
Avg. 1.804kW
Max. 11.98kW Apr 19 2005 16:30:41

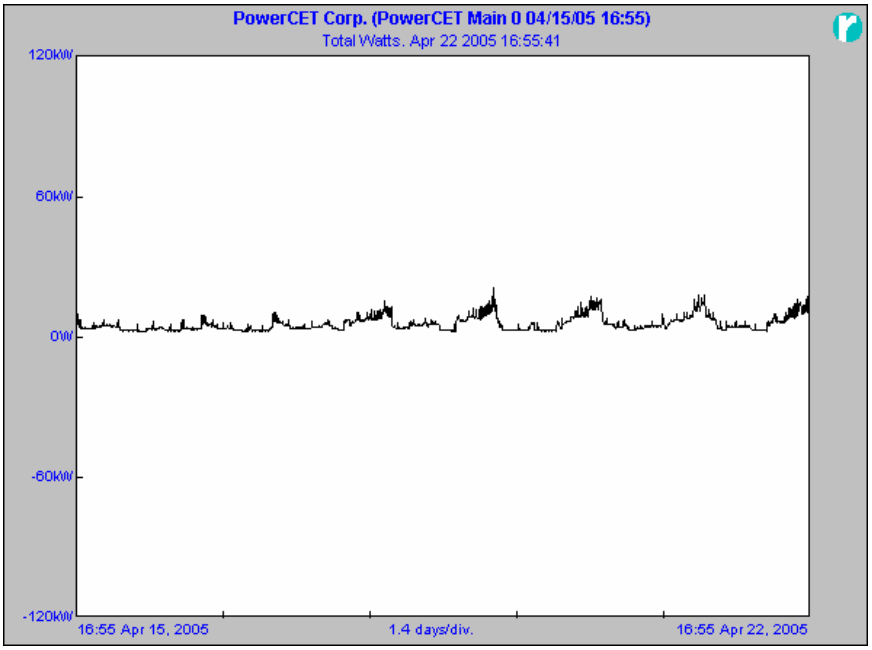
Sample Report

Phase C Watts. Summary.



Min. 394.9W Apr 20 2005 22:50:41
Avg. 1.466kW
Max. 13.38kW Apr 22 2005 14:10:41

Total Watts Summary.

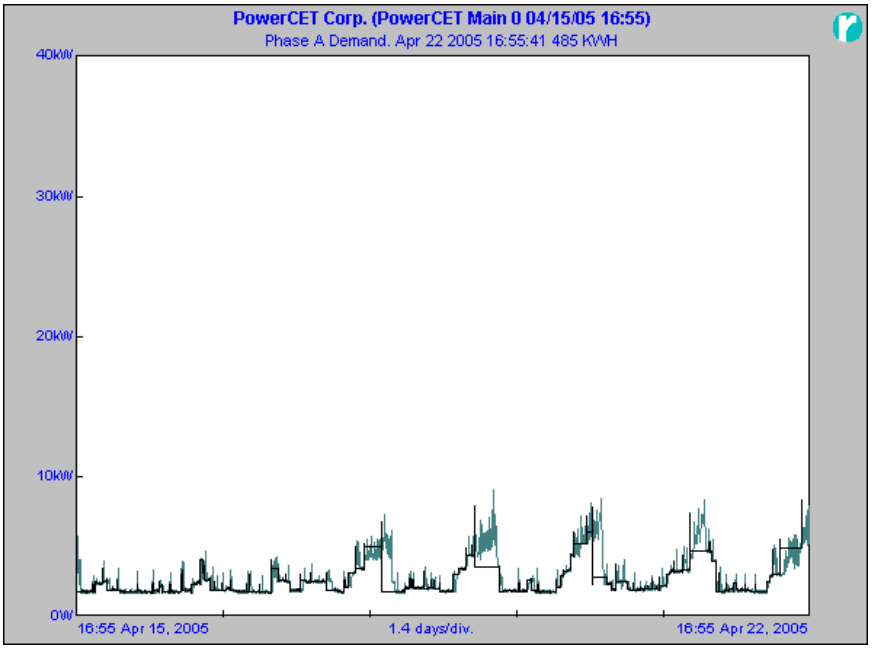


Min. 2.849kW Apr 16 2005 08:50:41
Avg. 6.160kW
Max. 21.68kW Apr 19 2005 16:35:41

Sample Report

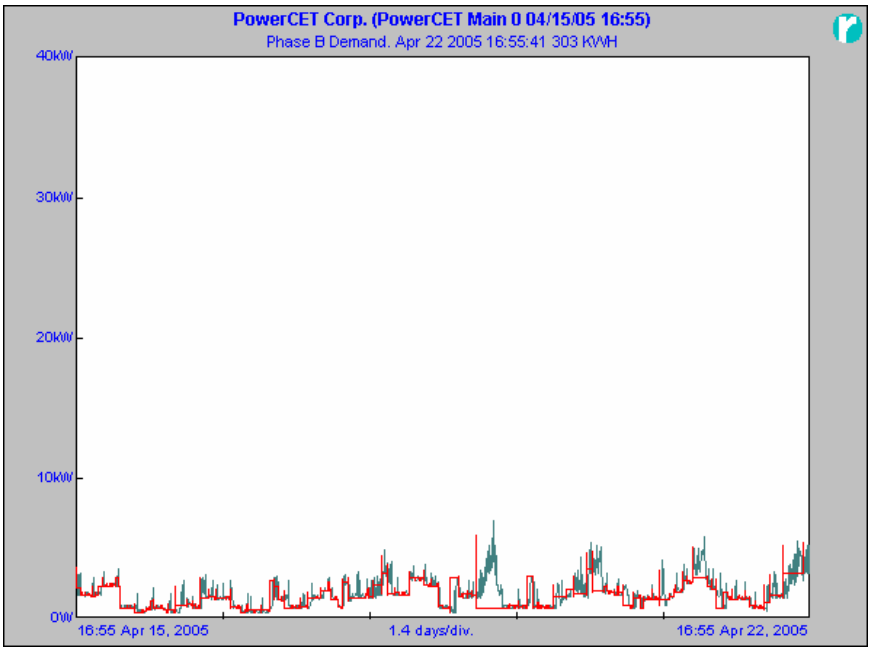
Demand Power Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A Demand Summary.



Min. 1.716kW Apr 16 2005 10:00:41
Avg. 2.890kW
Max. 8.435kW Apr 22 2005 16:50:41

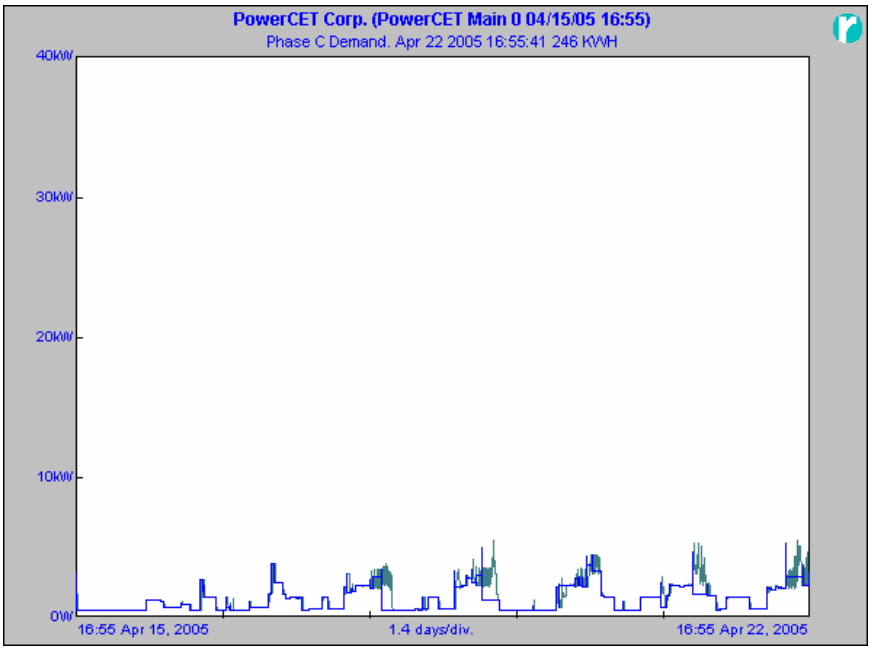
Phase B Demand Summary.



Min. 508.0W Apr 16 2005 15:30:41
Avg. 1.804kW
Max. 5.934kW Apr 19 2005 16:35:41

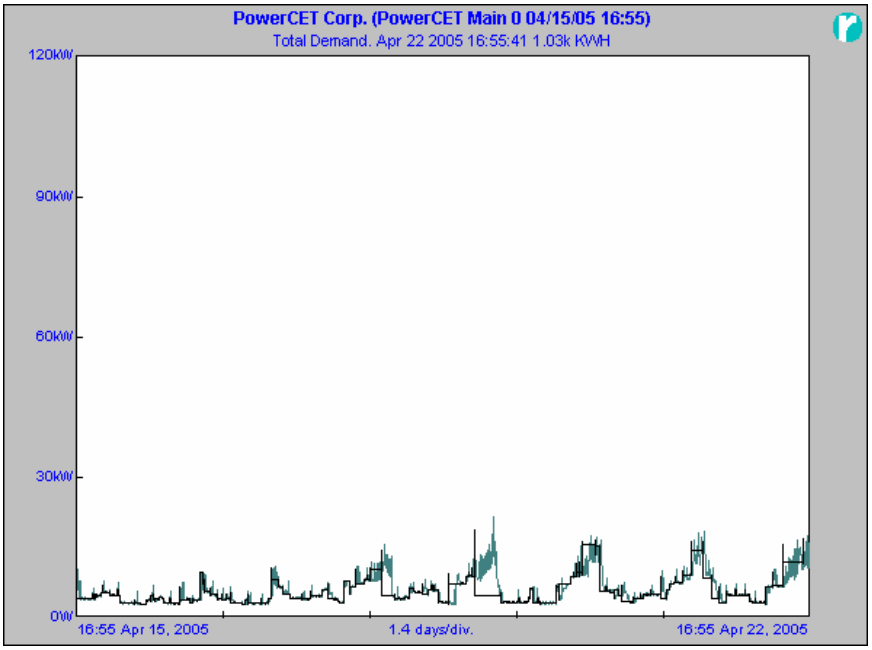
Sample Report

Phase C Demand. Summary.



Min. 566.9W Apr 16 2005 20:25:41
Avg. 1.466kW
Max. 5.327kW Apr 22 2005 14:10:41

Total Demand Summary.

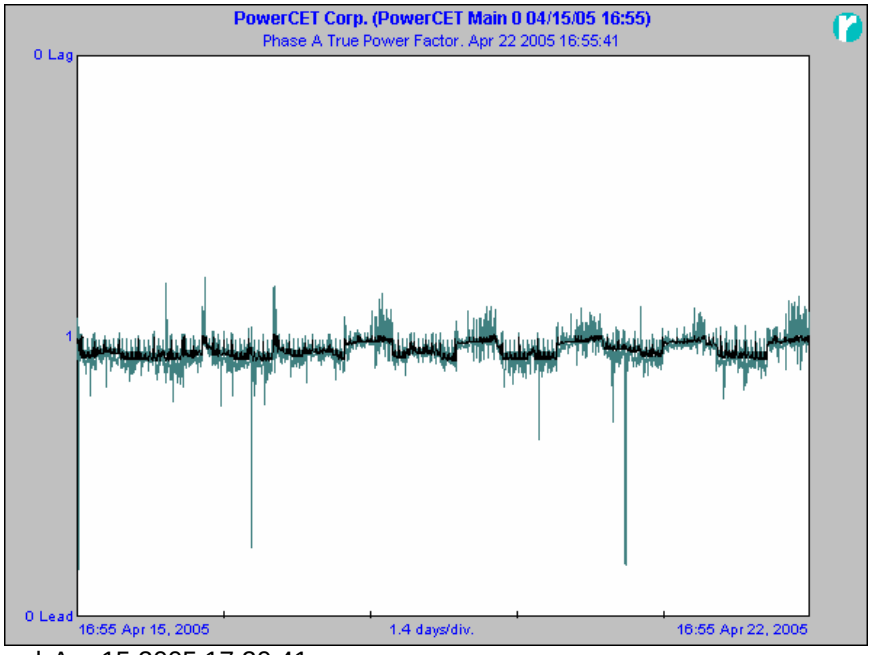


Min. 2.914kW Apr 16 2005 07:55:41
Avg. 6.161kW
Max. 18.89kW Apr 19 2005 16:35:41

Sample Report

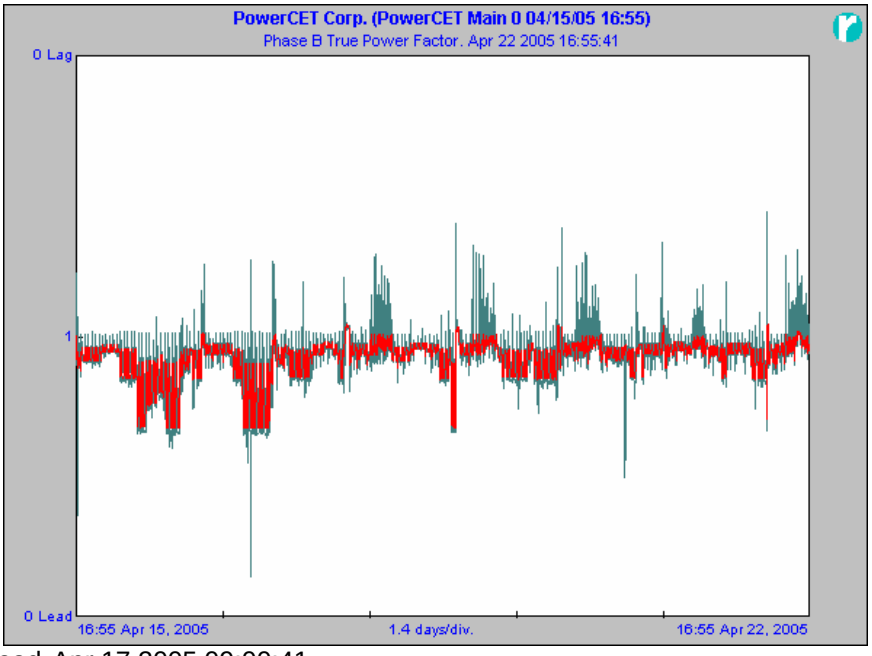
Power Factor Summaries for PowerCET Corp.:PowerCET Main 0 04/15/05 16:55.

Phase A Power Factor Summary.



Min. 0.173 Lead Apr 15 2005 17:20:41
Avg. 0.957 Lead
Max. 0.786 Lag Apr 16 2005 22:15:41

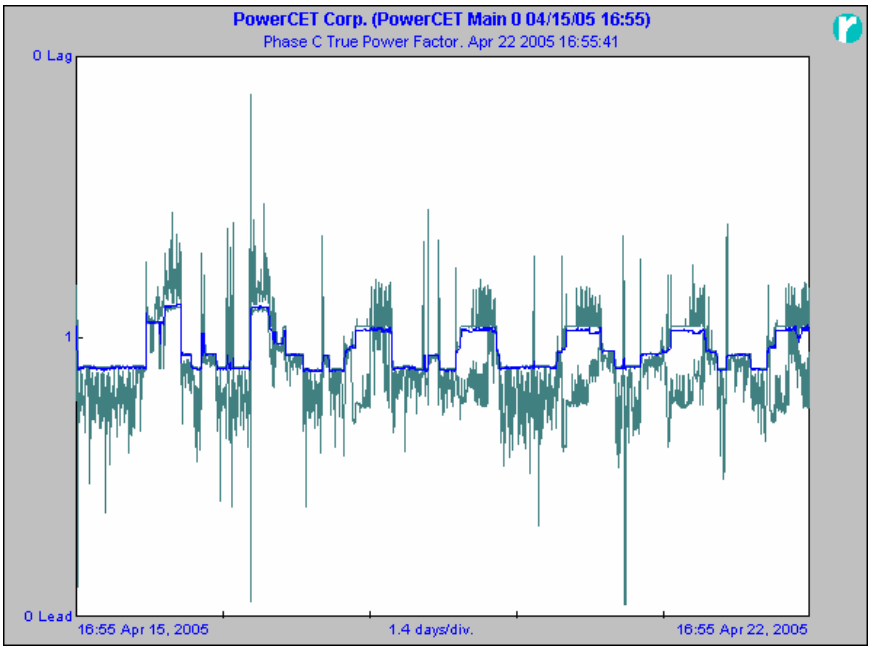
Phase B Power Factor. Summary.



Min. 0.148 Lead Apr 17 2005 09:00:41
Avg. 0.928 Lead
Max. 0.551 Lag Apr 22 2005 07:05:41

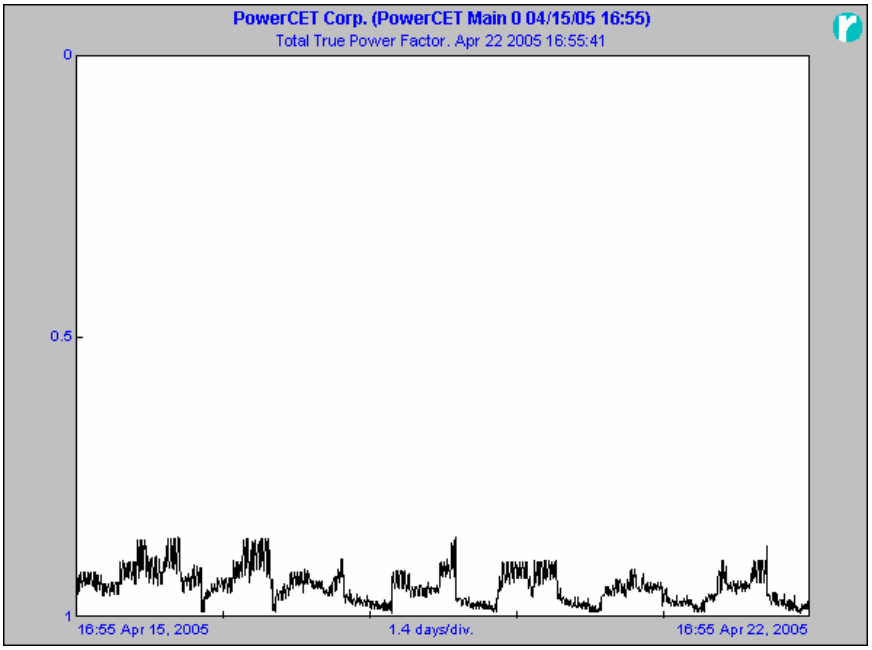
Sample Report

Phase C Power Factor. Summary.



Min. 0.050 Lead Apr 20 2005 22:50:41
Avg. 0.954 Lead
Max. 0.521 Lag Apr 17 2005 12:00:41

Total Power Factor Summary.



Min. 0.991 Apr 22 2005 14:45:41
Avg. 0.944
Max. 0.858 Apr 16 2005 16:20:41