

# Netquality report

## Analysis EN 50160

### Signatur

Company:	UPI
Location:	Bandung
Measuring point:	Power Quality
Device name:	00000C3A UMG 510
Database:	C:\Documents and Settings\Ase Subandi\.pas\pasdb
Analysis Timeframe:	March 26, 2010 12:30 PM - March 27, 2010 6:00 AM
Analysis date:	March 27, 2010
Creator:	E Ase Subandi
Analysis application:	PAS 1.5.0(2008-07-29) build: 5607
Comment:	Power Quality Analysis

### Overview

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#### *Main input*

Nominal voltage	220V
Nominal current	0A
Frequency	50Hz
Event limits	Sag: 90%; Swell: 110%; Interruption: 5%; Absolut voltage change: Off
Transient limits	Trns: 28%; Peak: 141%

#### *Auxillary input*

Nominal voltage	0V
Nominal current	0A
Event limits	Sag: Off; Swell: Off; Interruption: Off; Absolut voltage change: Off
Transient limits	Trns: Off; Peak: Off

#### Analysis EN 50160

Analysis	March 26, 2010 12:30 PM - March 27, 2010 6:00 AM
Timeframe:	
Device:	UMG510(Rel. "Oct 22 2008 08:36:43",001034)

# Flicker

In 85.7% of the time the flicker was above 1.0.

## Flicker

Name	Average	Minimum	Maximum
Long term flicker L1	1.30	0.87	1.62

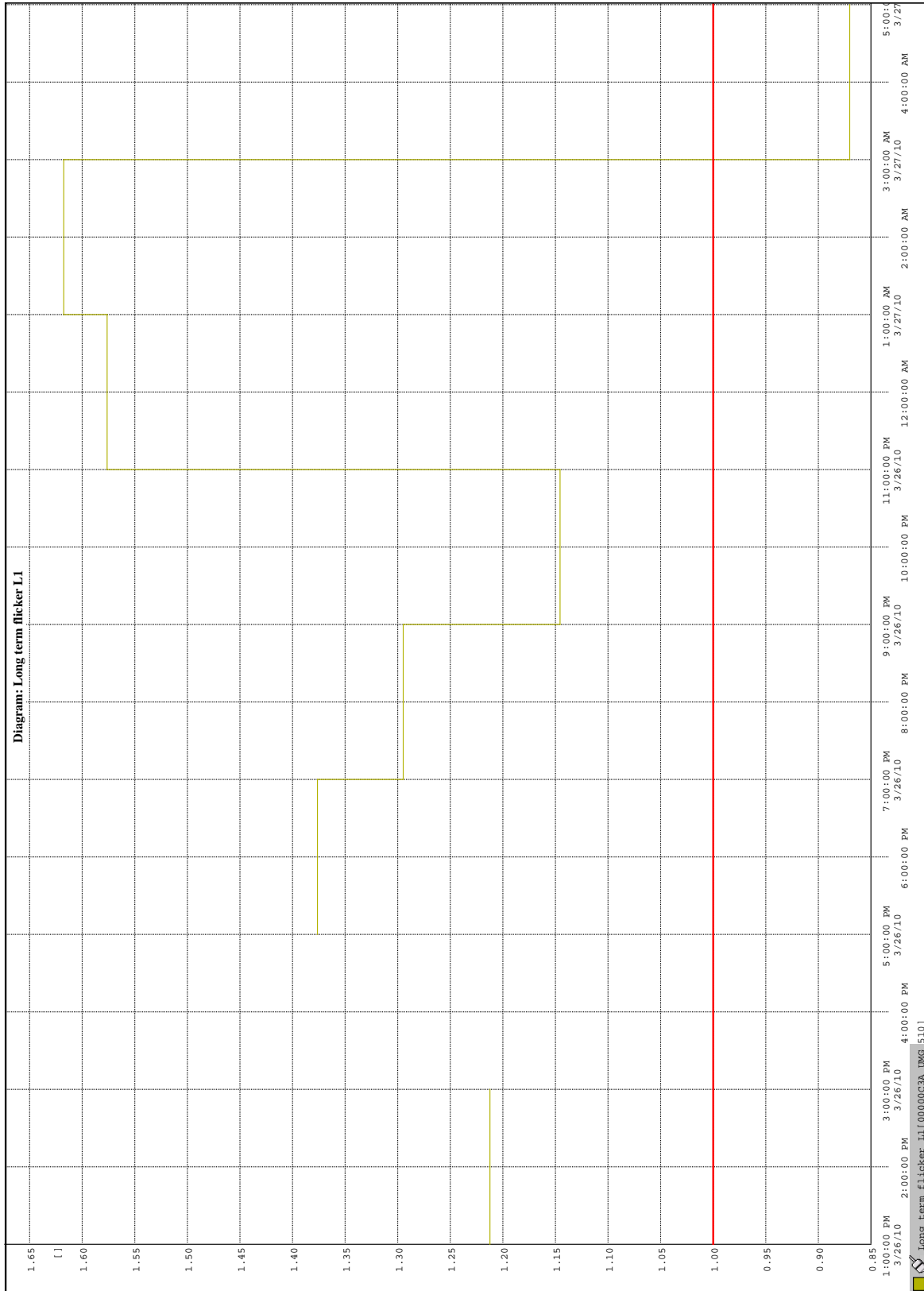
## Errors

No errors occurred

## Warnings

Missing time sequence from 3/26/10 3:10:00 PM to 3/26/10 3:20:00 PM

Diagram: Long term flicker L1



Analysis EN 50160

Analysis March 26, 2010 12:30 PM - March 27, 2010 6:00 AM

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# Supply frequency

In 100.0% of the time the frequency was between 49.5hz and 50.5hz.

## Supply frequency

Name	Average	Minimum	Maximum
Frequency	50.12Hz	49.69Hz	50.30Hz

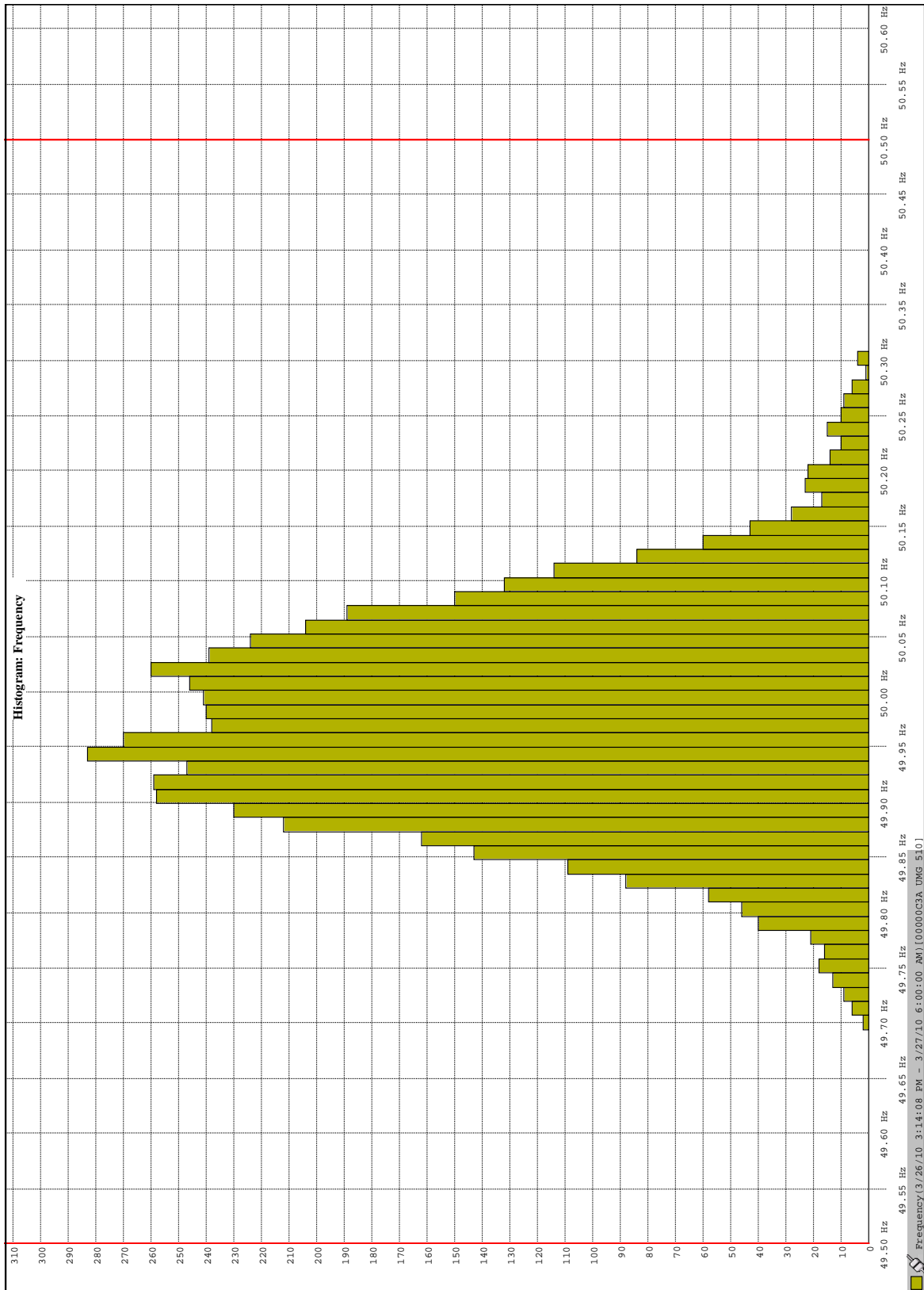
## Errors

No errors occurred

## Warnings

Missing time sequence from 3/26/10 12:30:00 PM to 3/26/10 3:14:08 PM

# Histogram: Frequency



## Analysis EN 50160

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# Harmonics

## 2. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.15%	0.12%	0.15%

## 3. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	4.41%	2.07%	4.59%

## 4. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.05%	0.04%	0.06%

## 5. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	3.22%	2.26%	3.28%

## 6. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.04%	0.03%	0.04%

## 7. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	1.00%	0.60%	1.02%

## 8. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.04%	0.03%	0.04%

## 9. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.99%	0.36%	1.01%

## 10. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.03%	0.02%	0.03%

### 11. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.60%	0.03%	0.69%

### 12. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.03%	0.02%	0.03%

### 13. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.60%	0.20%	0.63%

### 14. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.03%	0.02%	0.03%

### 15. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.40%	0.06%	0.41%

### 16. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.03%	0.02%	0.03%

### 17. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.40%	0.18%	0.44%

### 18. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.02%	0.02%	0.02%

### 19. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.27%	0.12%	0.30%

### 20. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.02%	0.02%	0.02%

## 21. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.32%	0.12%	0.33%

## 22. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.02%	0.02%	0.02%

## 23. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.35%	0.19%	0.37%

## 24. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.02%	0.01%	0.02%

## 25. Voltageharmonics

Name	Average	Minimum	Maximum
Voltageharmonics L1(rel)	0.30%	0.09%	0.32%

## Errors

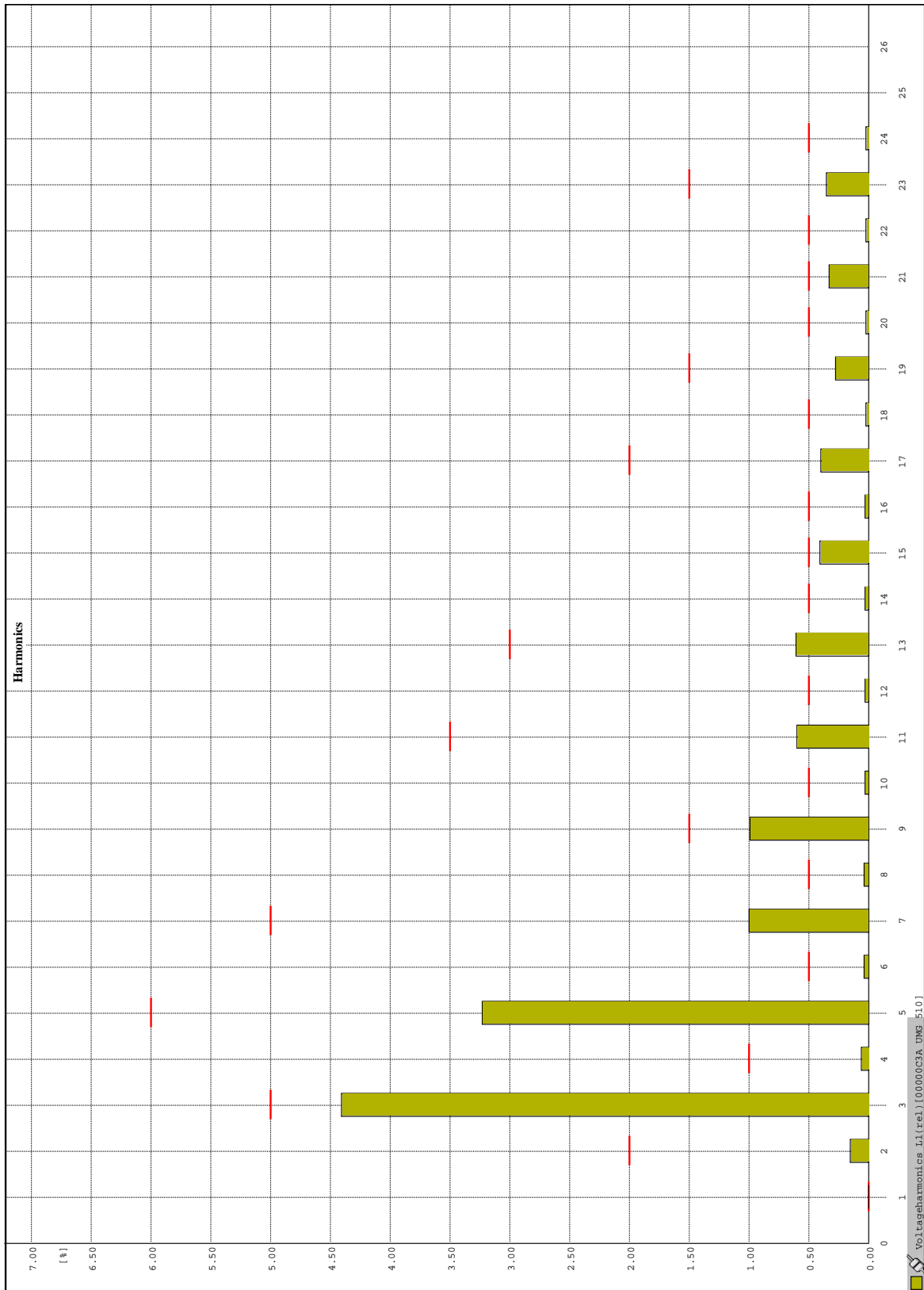
No errors occurred

## Warnings

No Warnings reported



# Harmonics



## Analysis EN 50160

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# THD

In 100.0% of the time the THD was between 0.0% and 8.0%.

## THD

Name	Average	Minimum	Maximum
Total harmonic distortion voltage L1	5.59%	3.60%	5.80%

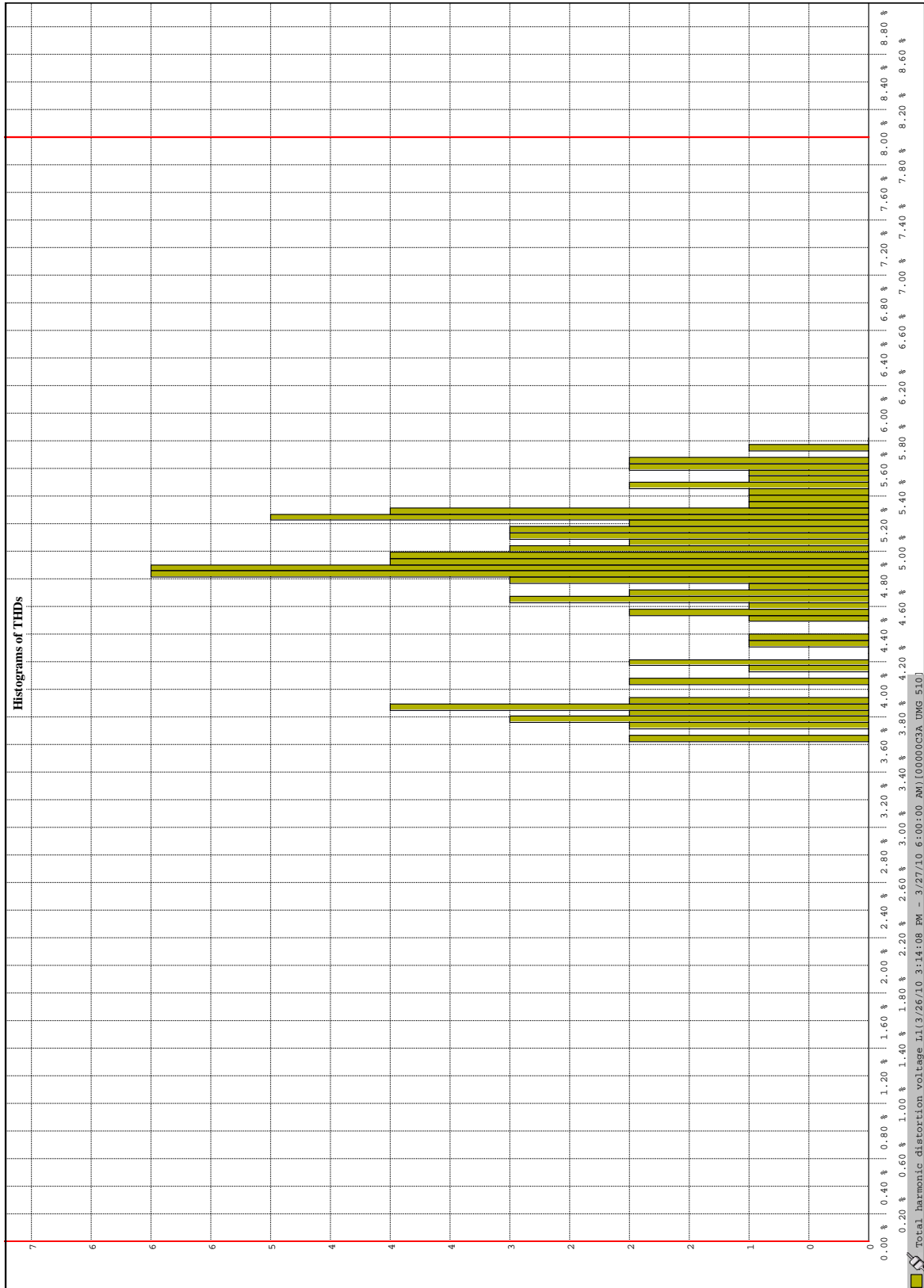
## Errors

No errors occurred

## Warnings

Missing time sequence from 3/26/10 12:30:00 PM to 3/26/10 3:14:08 PM

# Histograms of THDs



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# Symmetry

## Errors

Missing Value: Spannungsunsymmetrie with 600sec average for 1 week as Histogram.

## Warnings

Missing time sequence from 3/26/10 12:30:00 PM to 3/27/10 6:00:00 AM

# Supply voltage

In 100.0% of the time the voltage was between 198.0V and 242.0V.

## Supply voltage

Name	Average	Minimum	Maximum
Voltage L1	226.55V	207.65V	227.15V

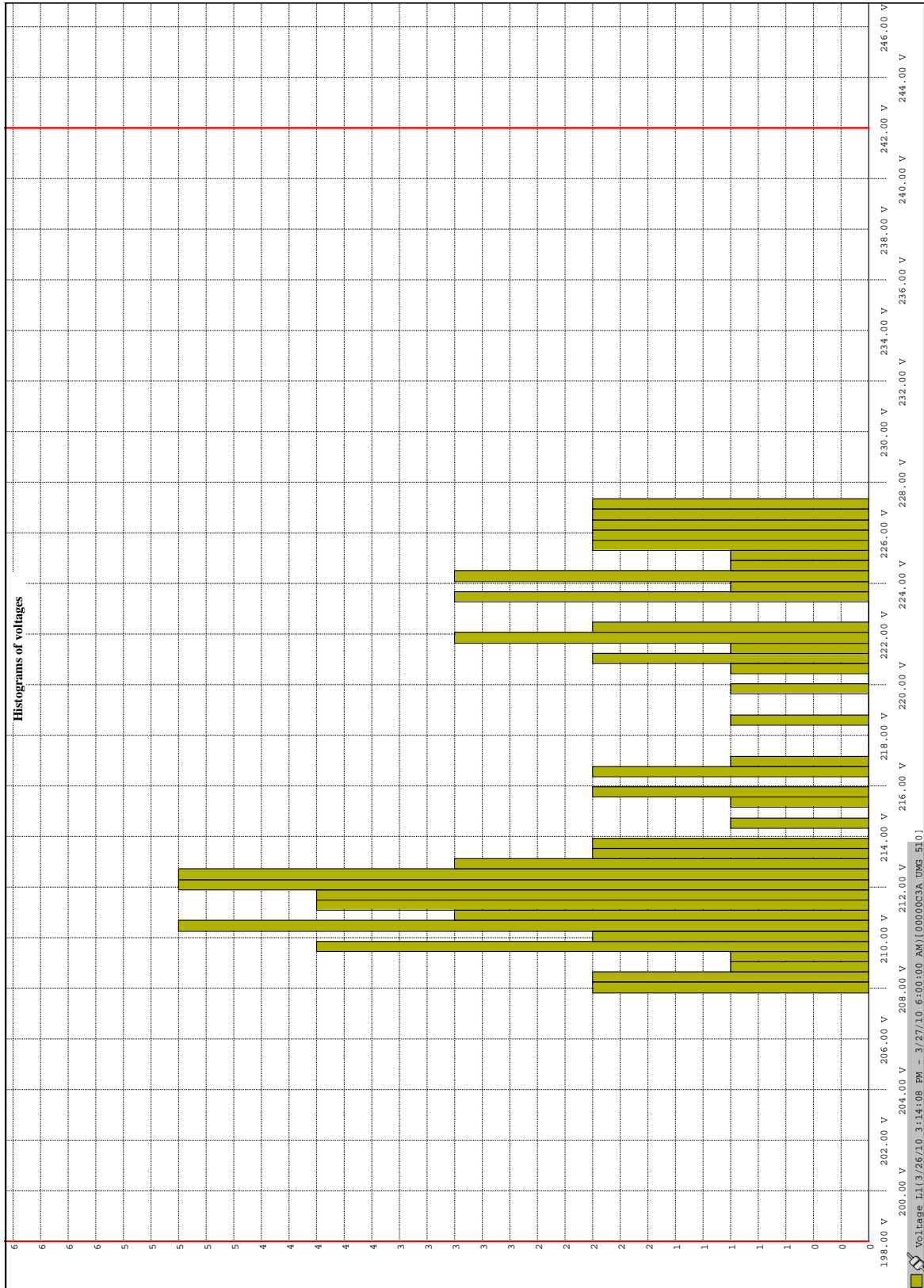
## Errors

No errors occurred

## Warnings

Missing time sequence from 3/26/10 12:30:00 PM to 3/26/10 3:14:08 PM

# Histograms of voltages



## Analysis EN 50160

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# Voltage drop

19 events have been found.

## Undervoltage

Time	Input	Average	Minimum	Duration
3/26/10 1:57:40 PM '775	L1	199.97V	196.51V	5'040 sec
3/26/10 1:59:44 PM '339	L1	199.58V	195.28V	1:55'551 min
3/26/10 2:02:01 PM '766	L1	200.29V	196.56V	6'708 sec
3/26/10 2:03:44 PM '706	L1	200.31V	196.40V	3'836 sec
3/26/10 2:04:25 PM '302	L1	200.21V	196.24V	3:13'556 min
3/26/10 2:07:40 PM '438	L1	200.71V	197.21V	6'532 sec
3/26/10 2:09:36 PM '186	L1	200.56V	196.72V	29'902 sec
3/26/10 2:11:34 PM '384	L1	198.61V	192.92V	7:35'277 min
3/26/10 2:22:25 PM '290	L1	200.07V	191.31V	1:41'813 min
3/26/10 2:25:26 PM '222	L1	200.73V	197.80V	1'190 sec
3/26/10 2:25:42 PM '799	L1	200.56V	197.69V	6'123 sec
3/26/10 2:39:08 PM '666	L1	200.82V	197.47V	1'371 sec
3/26/10 2:40:22 PM '030	L1	198.51V	197.10V	610 ms
3/26/10 2:40:27 PM '123	L1	200.71V	197.37V	1'171 sec
3/26/10 2:41:38 PM '968	L1	201.26V	197.37V	6'674 sec
3/26/10 2:42:51 PM '343	L1	200.27V	197.74V	540 ms
3/26/10 2:49:15 PM '707	L1	200.28V	197.69V	459 ms
3/26/10 2:54:22 PM '611	L1	201.37V	197.15V	8'089 sec
3/26/10 2:55:38 PM '371	L1	199.21V	21.16V	16:02'809 min

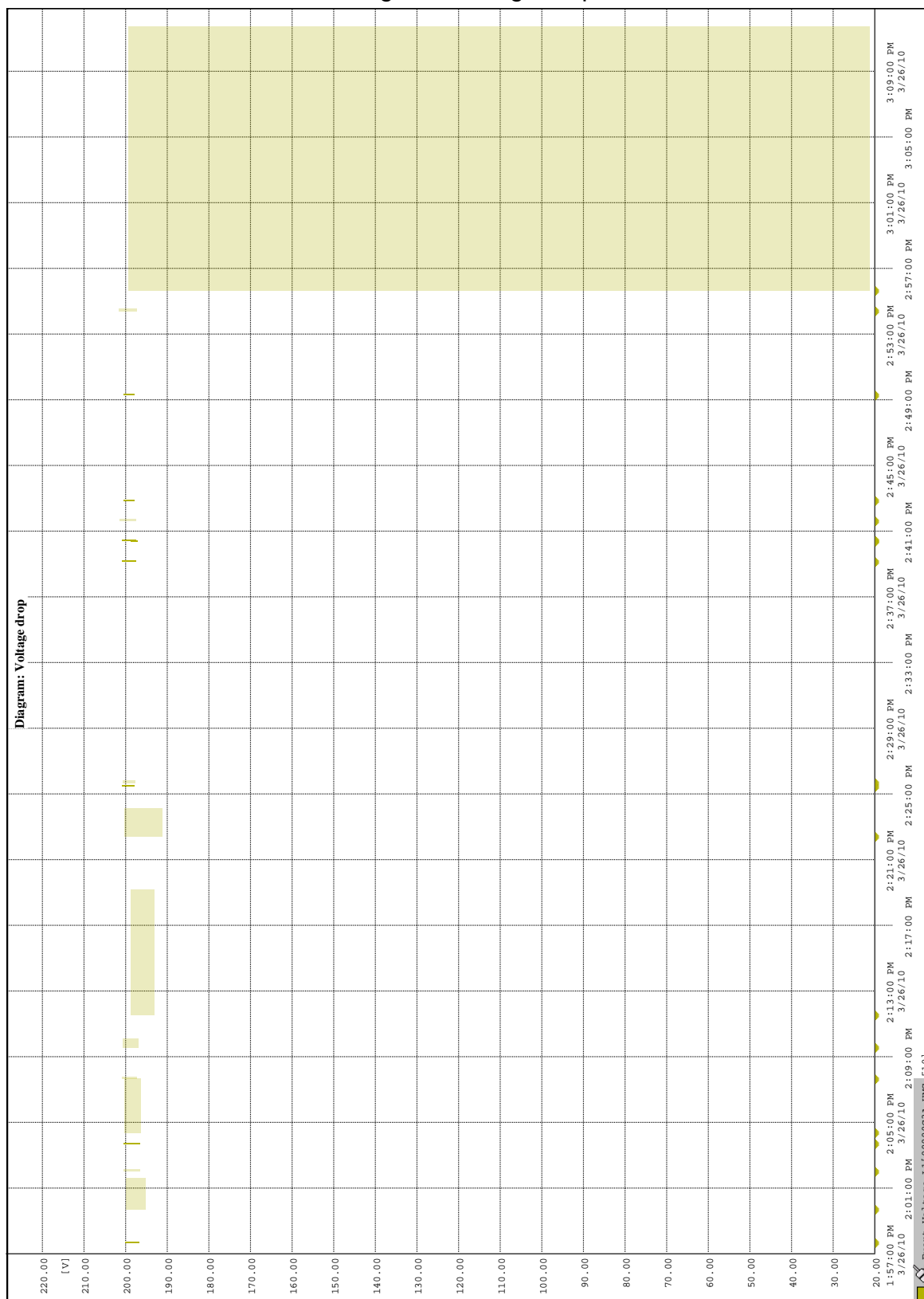
## Errors

No errors occurred

## Warnings

No Warnings reported

### Diagram: Voltage drop



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# Transients

1 transients have been found.

Time	Type
3/26/10 3:11:41 PM '157	Transient (trns L1) 3/26/10 3:11:41 PM '157

## Errors

No errors occurred

## Warnings

No Warnings reported

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# Transients

Transients
PM'148 3:11:41 PM'152 3:11:41 PM'156 3:11:41 PM'160 3:11:41 PM'164 3:11:41 PM'168 3:11:41 PM'172 3:11:41 PM'176 3:11:41 PM'180 3:11:41 PM'184
/10 3:11:41 PM'150 3/26/10 3:11:41 PM'154 3/26/10 3:11:41 PM'158 3/26/10 3:11:41 PM'162 3/26/10 3:11:41 PM'166 3/26/10 3:11:41 PM'170 3/26/10 3:11:41 PM'174 3/26/10 3:11:41 PM'178 3/26/10 3:11:41 PM'182 3/26/10
Transients[00000C3A.DWG 510]

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