

TEST REPORT

CISPR 15 / EN 55015 and IEC / EN 61547

Equipment for general lighting purposes and similar equipment
Limits and measurement of radio disturbance characteristic
Immunity requirements

Report reference No: E1668-05-12

Tested by: Dr. M. Scheidt

Approved by management: Dr. F. Stucki

Date of issue: 11 July 2012

Number of pages: 37 pages

Testing laboratory: QUINEL AG

Address: Grundstr. 2 CH-6343 Rotkreuz

Testing location: Rotkreuz Tel. 041-799 47 04



S Schweizerischer Prüfstellendienst
T Service Suisse d'essai
S Servizio di prova in Svizzera
Swiss testing service

STS 037

Applicant's Name: OEE Odermatt Electronic Engineering, Mr. Marco Odermatt

Address: Steinersmatt 28, CH-6370 Stans

Manufacturer: OEE Odermatt Electronic Engineering

Address: Steinersmatt 28, CH-6370 Stans

Test specification:

Standards: CISPR 15:2005+A1:2006+A2:2008,
EN 55015:2006+A1:2007+A2:2009
IEC 61547:2009, EN 61547:2009

Test procedure: Type testing for Swiss and EU legal requirements

Procedure deviation: None

Non-standard test method: None

Test-specification: The used test setup fulfils the specification described in the relevant standards

Test item description: Portable floor lamp with infrared detector

Trademark: OEE

Model and/or type reference: Luna

Ratings: 230V, 50Hz, 53W, class II

Date of receipt of the test item(s): July 2012

Summary of testing: Passed

Applied standards:

No	Title	Standard (up dated)	pages	Verdict
E1668-22-12	RF disturbances	CISPR 15:2005+A1:2006+A2:2008, EN 55015:2006+A1:2007+A2:2009	17	P
E1668-06-12	RF conducted disturbances	IEC 61000-4-6:2008 EN 61000-4-6:2009	2	P
E1668-03-12	Radiated electromagnetic field	IEC61000-4-3:2006+A1:2007+A2:2010 EN 61000-4-3:2006+A1:2008+A2:2010	4	P
E1668-08-12	Power frequency magnetic field	IEC 61000-4-8:2009 EN 61000-4-8:2010	2	P
E1668-04-12	Electrical fast transient burst	IEC 61000-4-4:2012 EN 61000-4-4:2004+A1:2010	2	P

E1668-02-12	Electrostatic discharge	IEC 61000-4-2:2008 EN 61000-4-2:2009	2	P
E1668-55-12	Surge	IEC 61000-4-5:2005 EN 61000-4-5:2006	2	P
E1668-11-12	Voltage dips - interruptions	IEC 61000-4-11:2004 EN 61000-4-11:2004	2	P
E1668-32-12	Harmonic current emissions	IEC 61000-3-2:2005+A1:2008+A2:2009 EN 61000-3-2:2006+A1:2009+A2:2009	2	P
-	Voltage fluctuations and flicker	IEC 61000-3-3:2008 EN 61000-3-3:2008	-	NT

Verdicts: P = passed, F = failed, NA = not applicable, NT = not tested

Acceptance criteria/operating conditions:

During and after the test the apparatus should show no damage or loss of information and should function according to specifications.

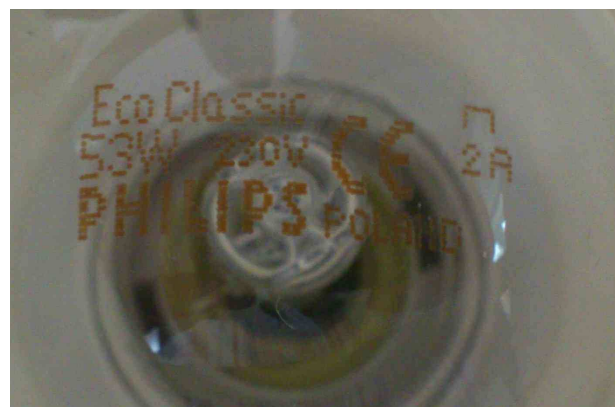
Type List:

This Test Report is valid for the following types: as above

Photograph of the tested item:



Photograph of the type label:



Notes:

Tests were made with a 53W halogen lamp.

Voltage fluctuations and flicker not tested because it is a low power device and a long switching cycle.

The test results presented in this test report relate only to the tested object(s).

This test report shall not be reproduced except in full.

EMC: RF-disturbances

QNL-E1668-22-12

Test requirements:

The apparatus shall be tested in its normal position for use and be supplied with nominal voltage. All parts which are normally earthed should also be earthed during testing.

- Frequency range: 0.009 MHz ... 30 MHz
- Measuring distance: 2 meters
- Temperature: 22°C
- Humidity: 50%

Acceptance criteria:

The measured disturbances should not reach the limits specified in EN55015, CISPR15.

Reference: EN55015, CISPR15

Test equipment:

Test equipment	Manufacturer / Type	QUINEL Inventory no.	Calibration	
			last	next
Receiver	Rohde & Schwarz ESVP	323280	Jan 12	Jan 14
Receiver	Rohde & Schwarz ESH3	500100	July 11	July 13
Mains-simulation	Electrometric ANS-25/2	500146	Sept 11	Sept 13
Artificial-mains-network	Rohde & Schwarz ESH 2-Z5	500045	May 11	May 13
Antenna	ETS Lindgren BICONILOG 3142	500096	Oct 09	Oct 14
EMC-anechoic room	EUROSHIELD	24655	Oct 09	Oct 14
Loop antenna	QUINEL	500036	April 08	April 16

Object: Portable floor lamp with infrared detector

Applicant: OEE

Manufacturer: OEE

Type: Luna

Object number: EMV Test sample

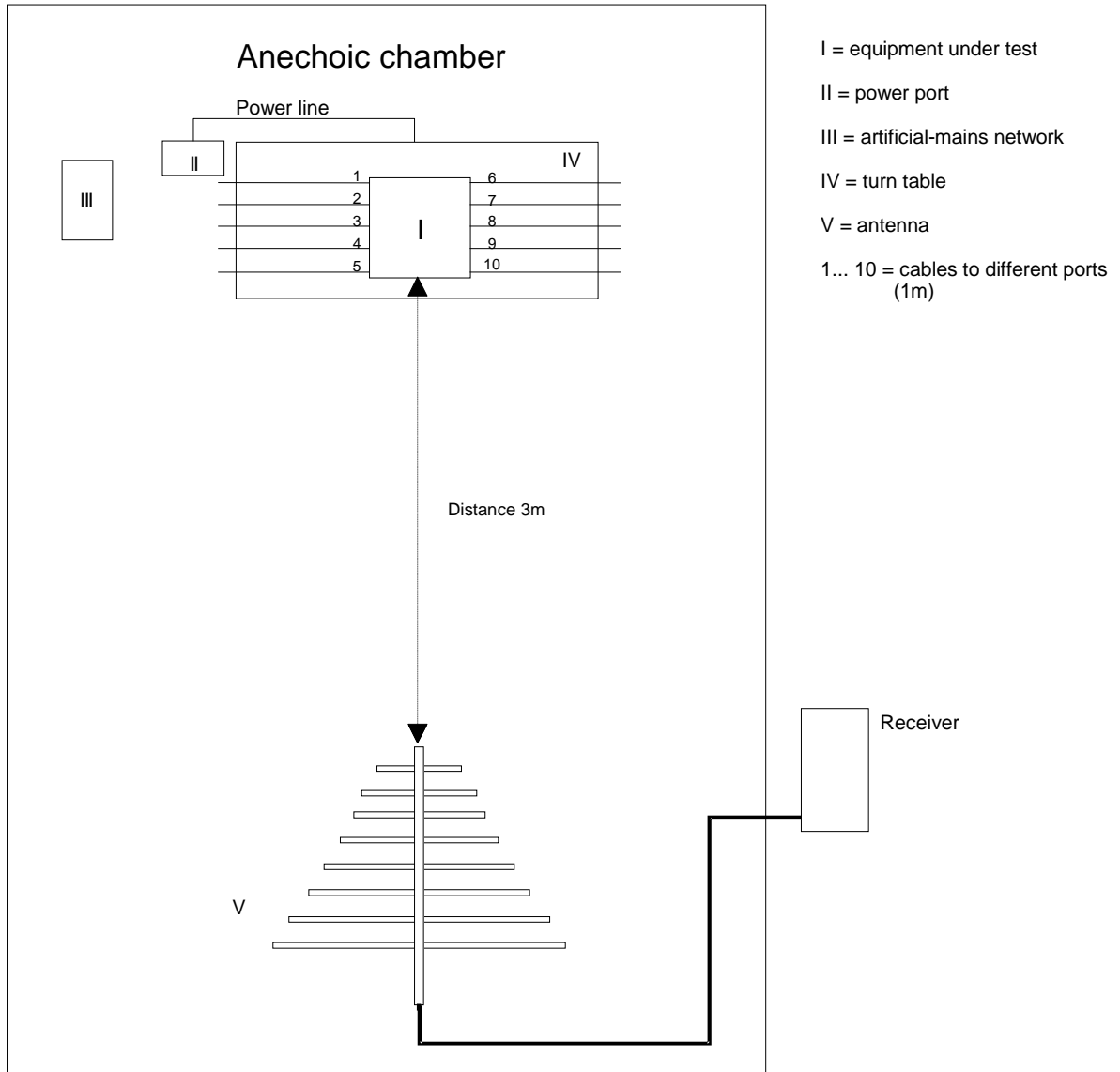
Result: **Test passed**

Remarks: -

Notes:

During test lamp was activated all the time.

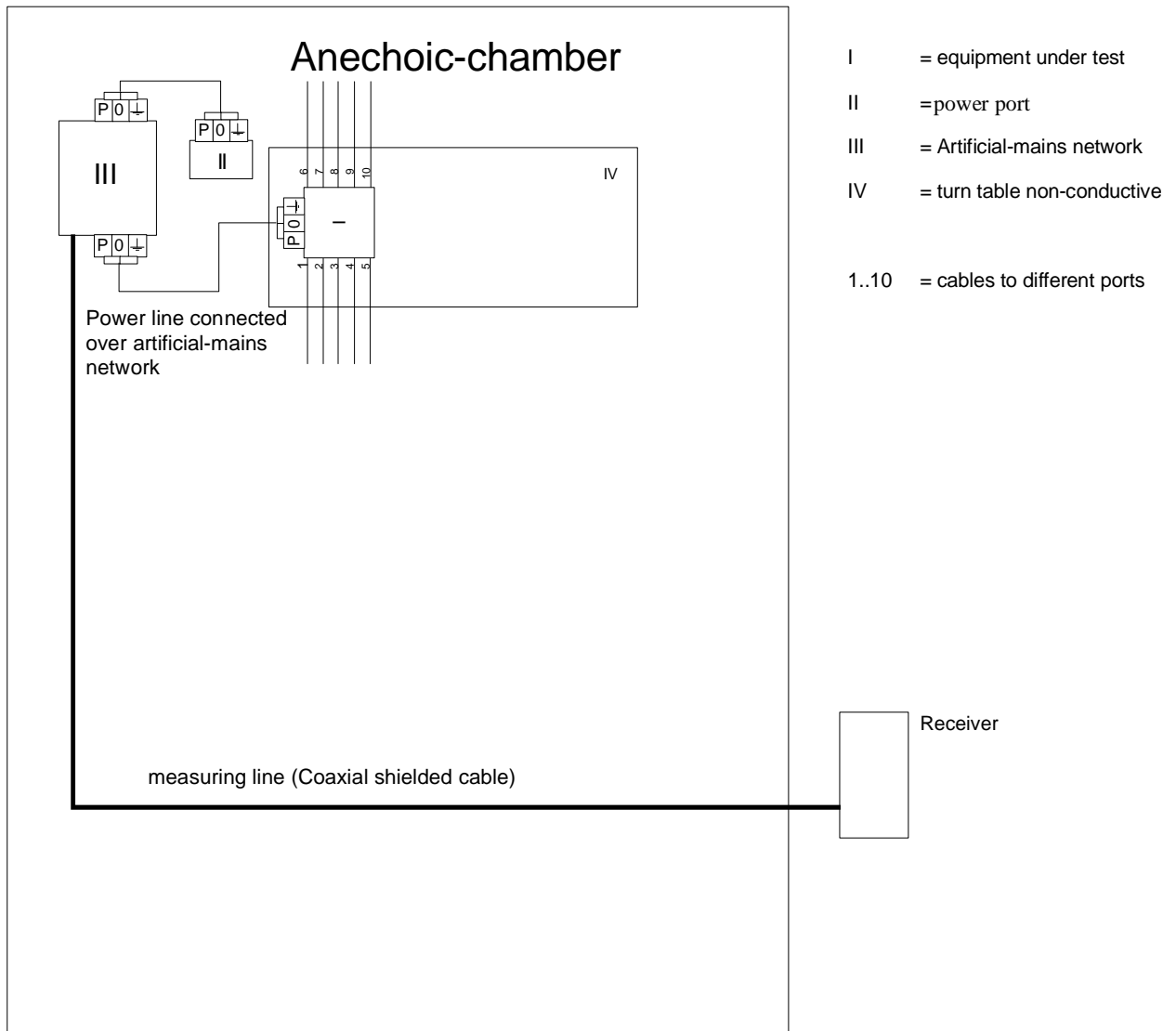
EMC: Emission test



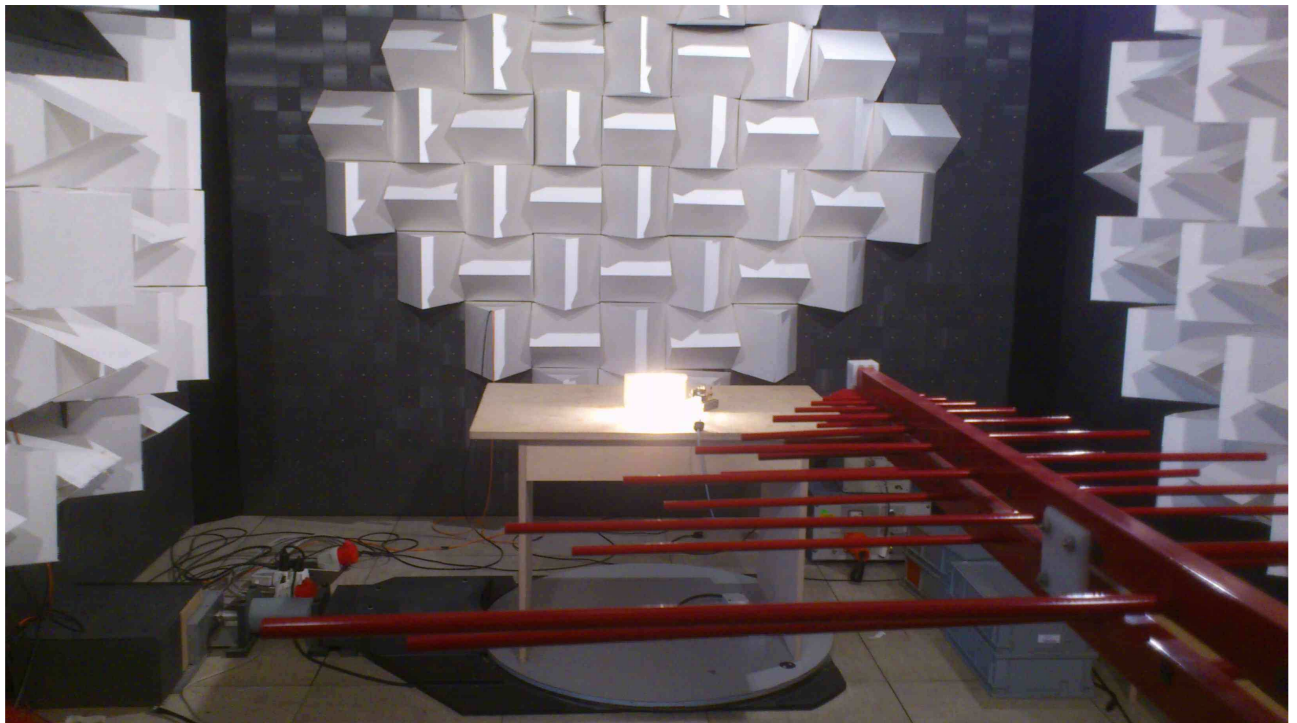
Antenna position horizontal

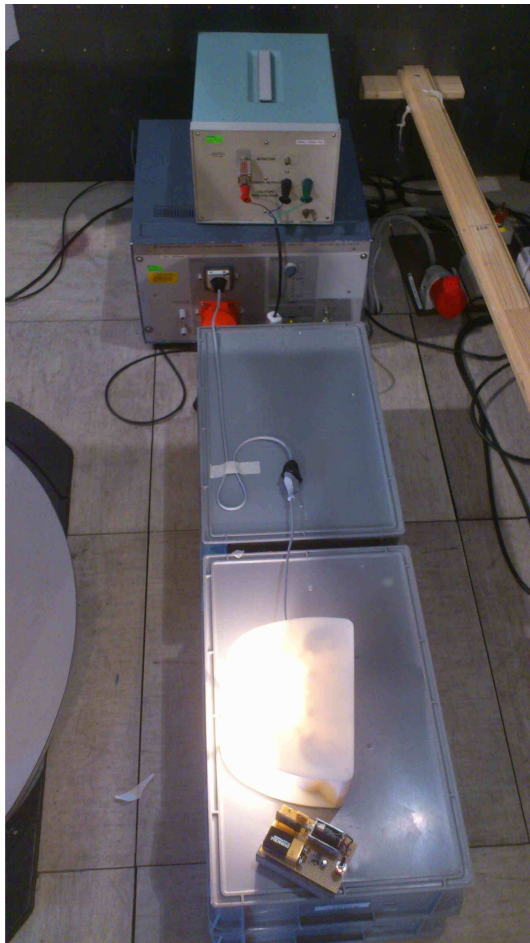
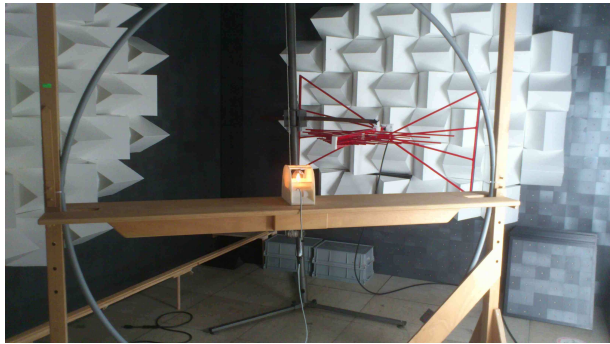
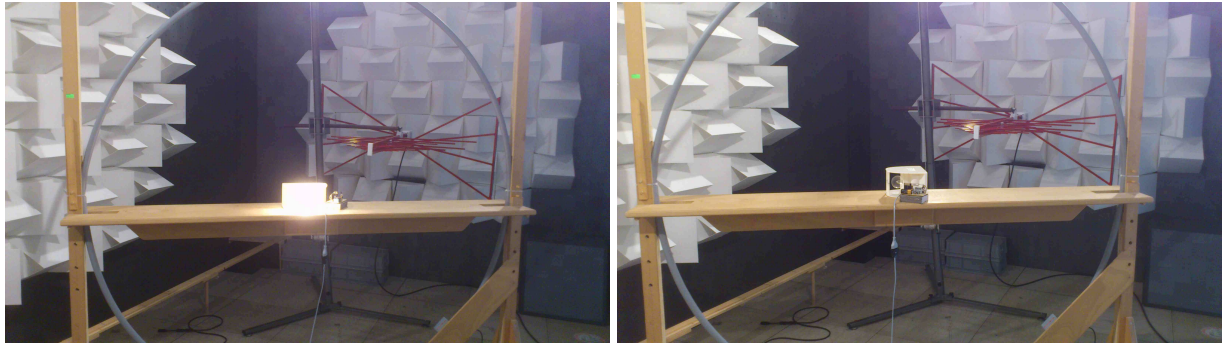
Antenna position vertical

EMC: RF disturbances (Mains)



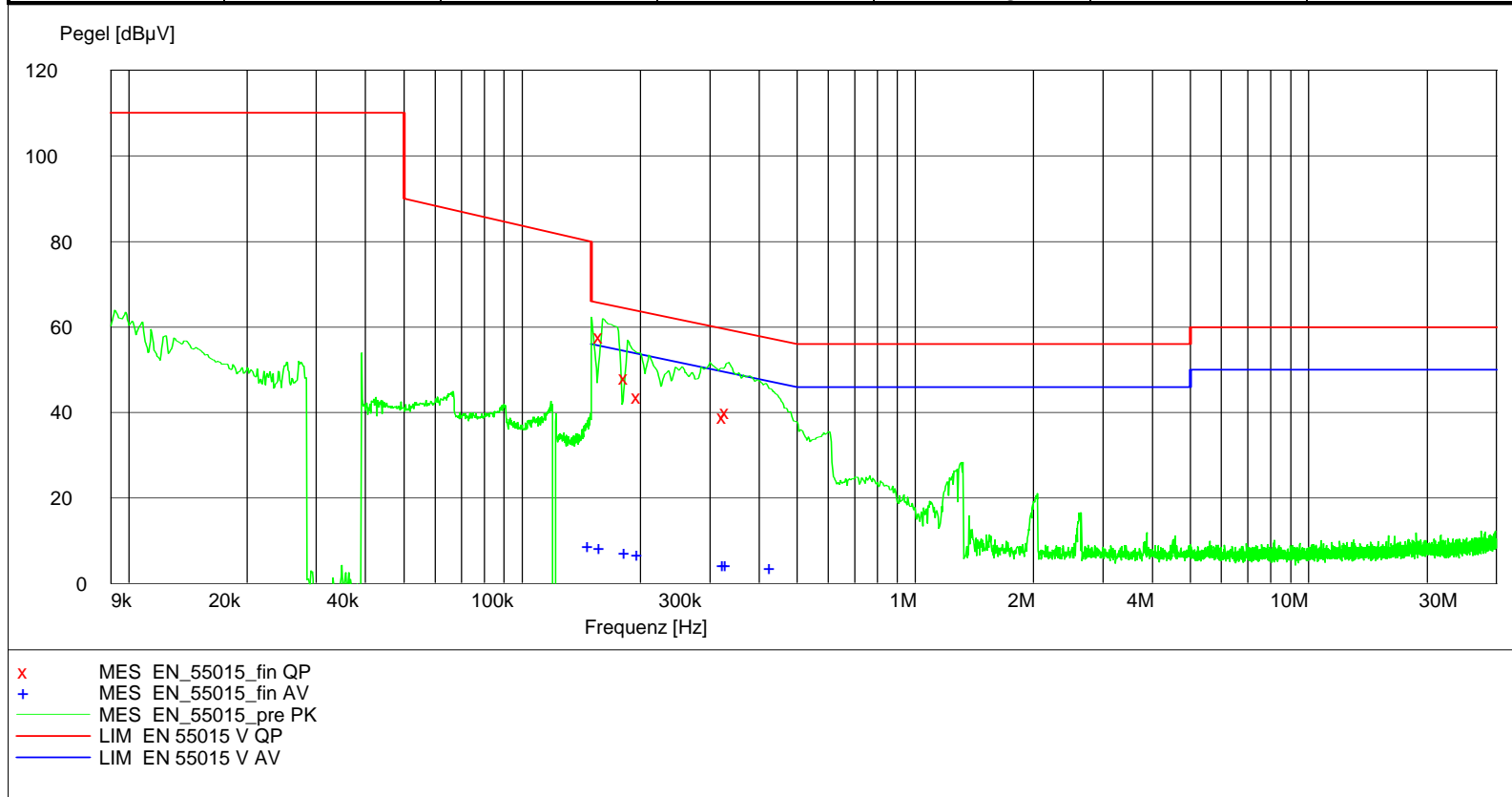
Photographs:





Leitungsgebundene Abstrahlung nach EN 55015 Null-Leiter

Start	Stop	Step	Bandbreite	Detektor	Messzeit	Vorverstärker
9.0 kHz	150.0 kHz	200.0 Hz	0.2 kHz	MaxPeak	10.0 ms	
150.0 kHz	30.0 MHz	5.0 kHz	10 kHz	MaxPeak	10.0 ms	
				QuasiPeak	1.0 s	
				Average	5.0 ms	



Frequenzliste mit Quasi-Peak-Werten

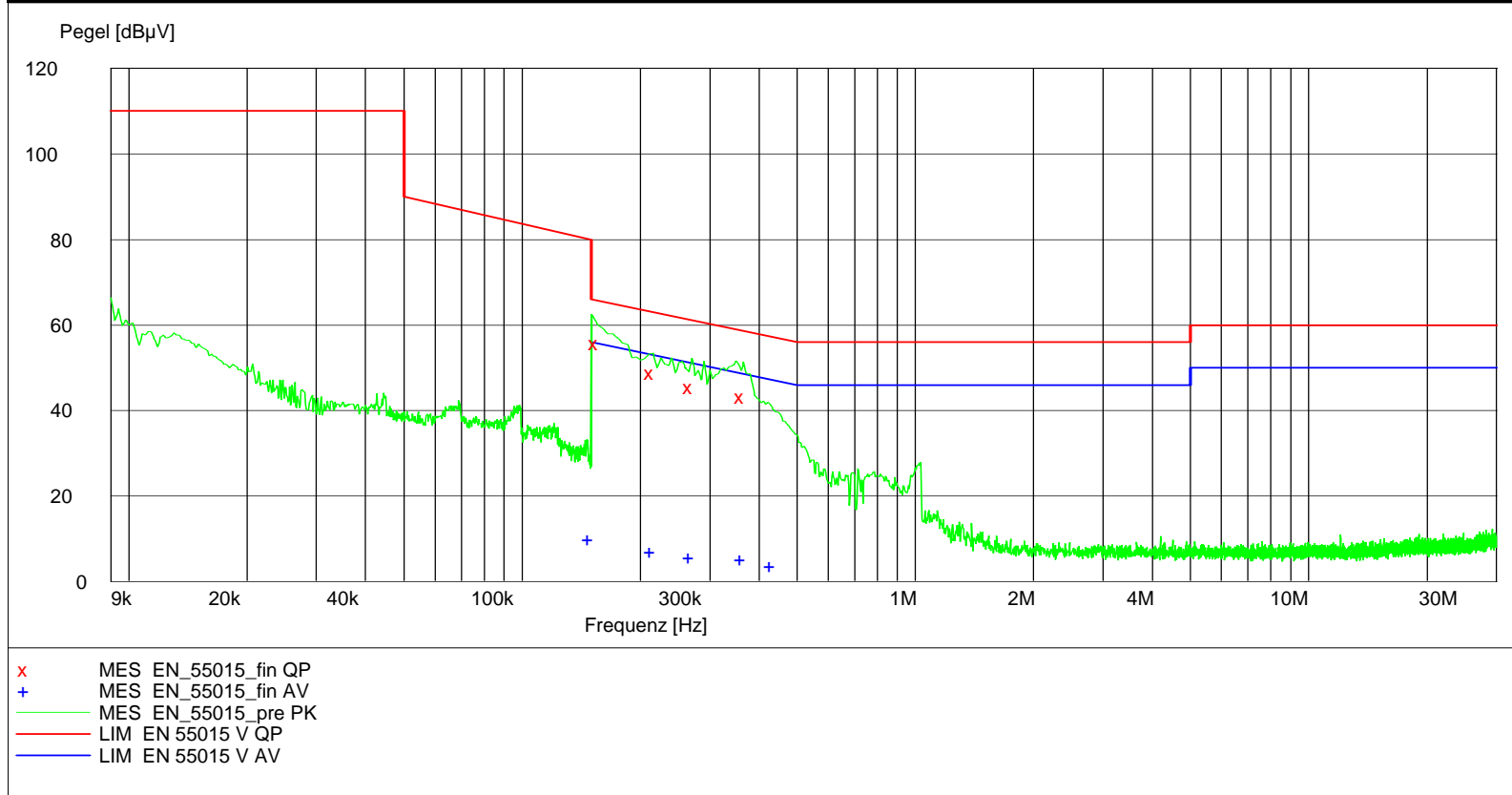
Frequenz [MHz]	Pegel [dB/uV]	Limit [dB/uV]	Margin [dB]
0.160000	57.70	65.5	7.8
0.185000	48.30	64.3	16.0
0.200000	43.80	63.6	19.8
0.330000	39.00	59.5	20.5
0.335000	40.10	59.3	19.2

Frequenzliste mit Average-Werten

Frequenz [MHz]	Pegel [dB/uV]	Limit [dB/uV]	Margin [dB]
0.150000	8.90	56.0	47.1
0.160000	8.50	55.5	47.0
0.185000	7.30	54.3	47.0
0.200000	6.80	53.6	46.8
0.330000	4.50	49.5	45.0
0.335000	4.50	49.3	44.8
0.435000	3.70	47.2	43.5

Leitungsgebundene Abstrahlung nach EN 55015 Phase -Leiter

Start	Stop	Step	Bandbreite	Detektor	Messzeit	Vorverstärker
9.0 kHz	150.0 kHz	200.0 Hz	0.2 kHz	MaxPeak	10.0 ms	
150.0 kHz	30.0 MHz	5.0 kHz	10 kHz	MaxPeak	10.0 ms	
				QuasiPeak	1.0 s	
				Average	5.0 ms	



Frequenzliste mit Quasi-Peak-Werten

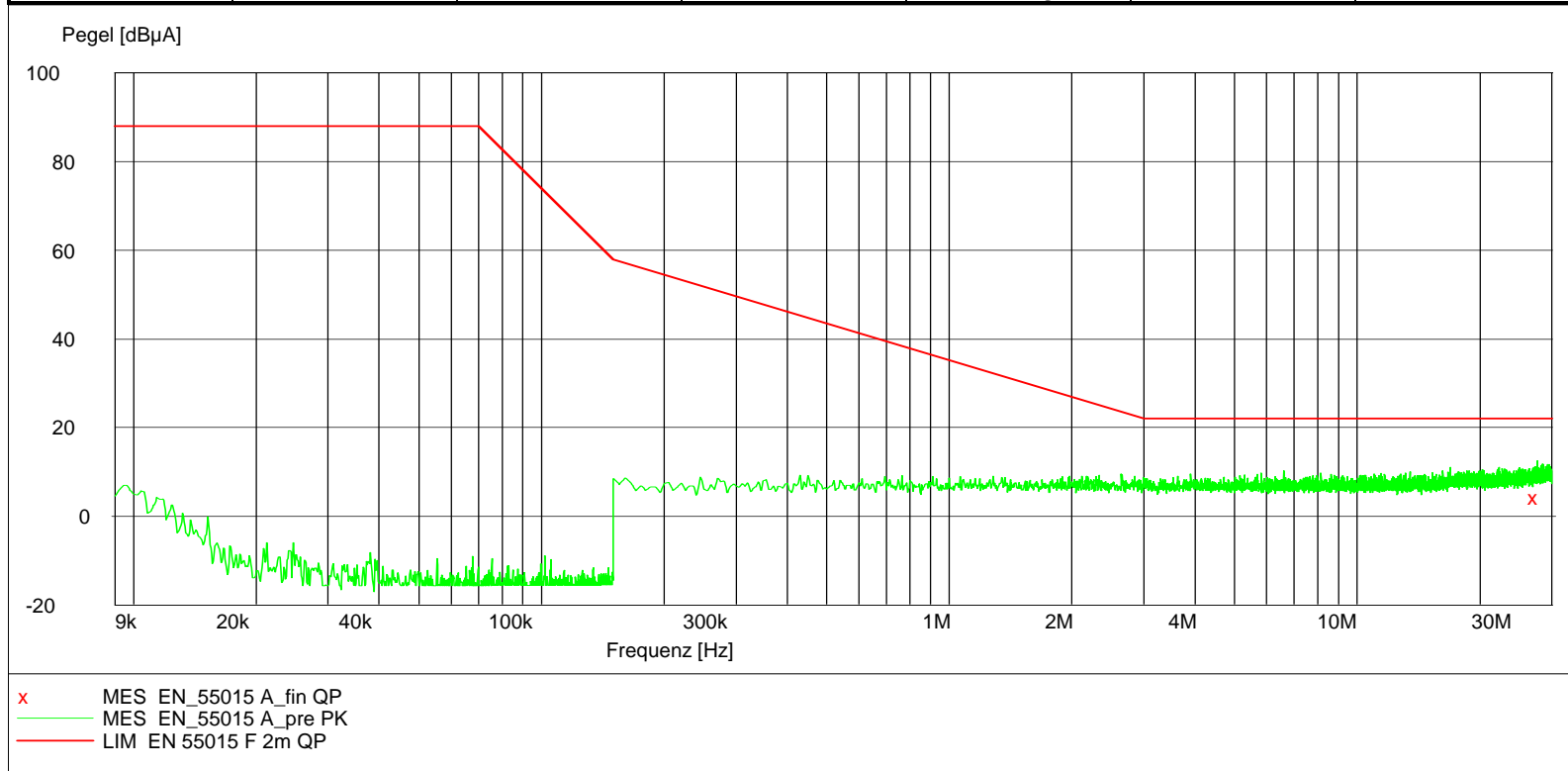
Frequenz [MHz]	Pegel [dB/uV]	Limit [dB/uV]	Margin [dB]
0.155000	55.80	65.7	9.9
0.215000	48.90	63.0	14.1
0.270000	45.60	61.1	15.5
0.365000	43.30	58.6	15.3

Frequenzliste mit Average-Werten

Frequenz [MHz]	Pegel [dB/uV]	Limit [dB/uV]	Margin [dB]
0.150000	10.00	56.0	46.0
0.215000	7.00	53.0	46.0
0.270000	5.80	51.1	45.3
0.365000	5.30	48.6	43.3
0.435000	3.80	47.2	43.4

Abstrahlung nach EN 55015 Achse X

Start	Stop	Step	Bandbreite	Detektor	Messzeit	Vorverstärker
9.0 kHz	150.0 kHz	200.0 Hz	0.2 kHz	MaxPeak	10.0 ms	
150.0 kHz	30.0 MHz	5.0 kHz	10 kHz	MaxPeak	10.0 ms	
				QuasiPeak	1.0 s	
				Average	5.0 ms	

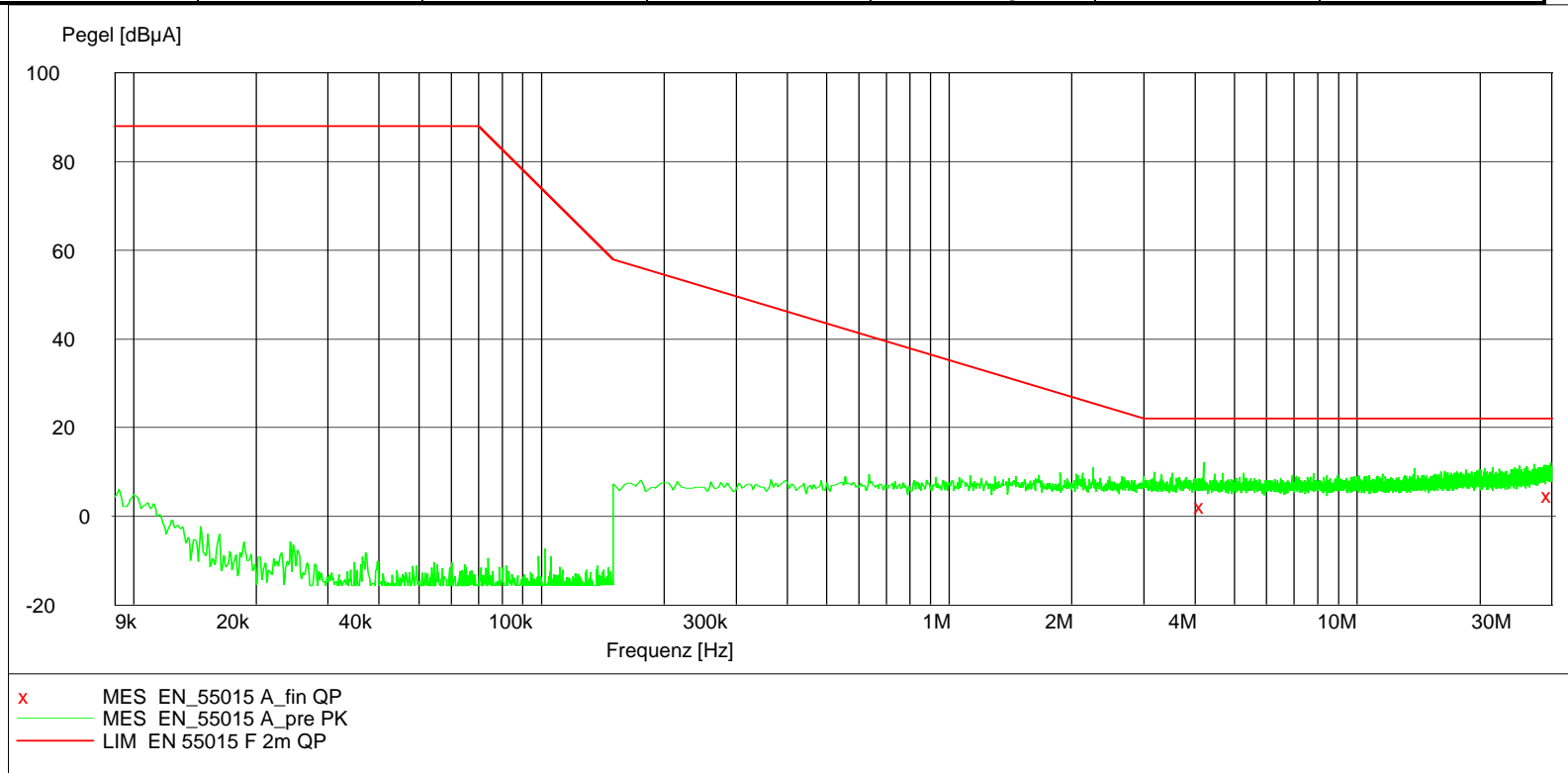


Frequenzliste mit Quasi-Peak-Werten

Frequenz [MHz]	Pegel [dB/uA]	Limit [dB/uA]	Margin [dB]
27.715000	4.20	22.0	17.8

Abstrahlung nach EN 55015 Achse Y

Start	Stop	Step	Bandbreite	Detektor	Messzeit	Vorverstärker
9.0 kHz	150.0 kHz	200.0 Hz	0.2 kHz	MaxPeak	10.0 ms	
150.0 kHz	30.0 MHz	5.0 kHz	10 kHz	MaxPeak	10.0 ms	
				QuasiPeak	1.0 s	
				Average	5.0 ms	

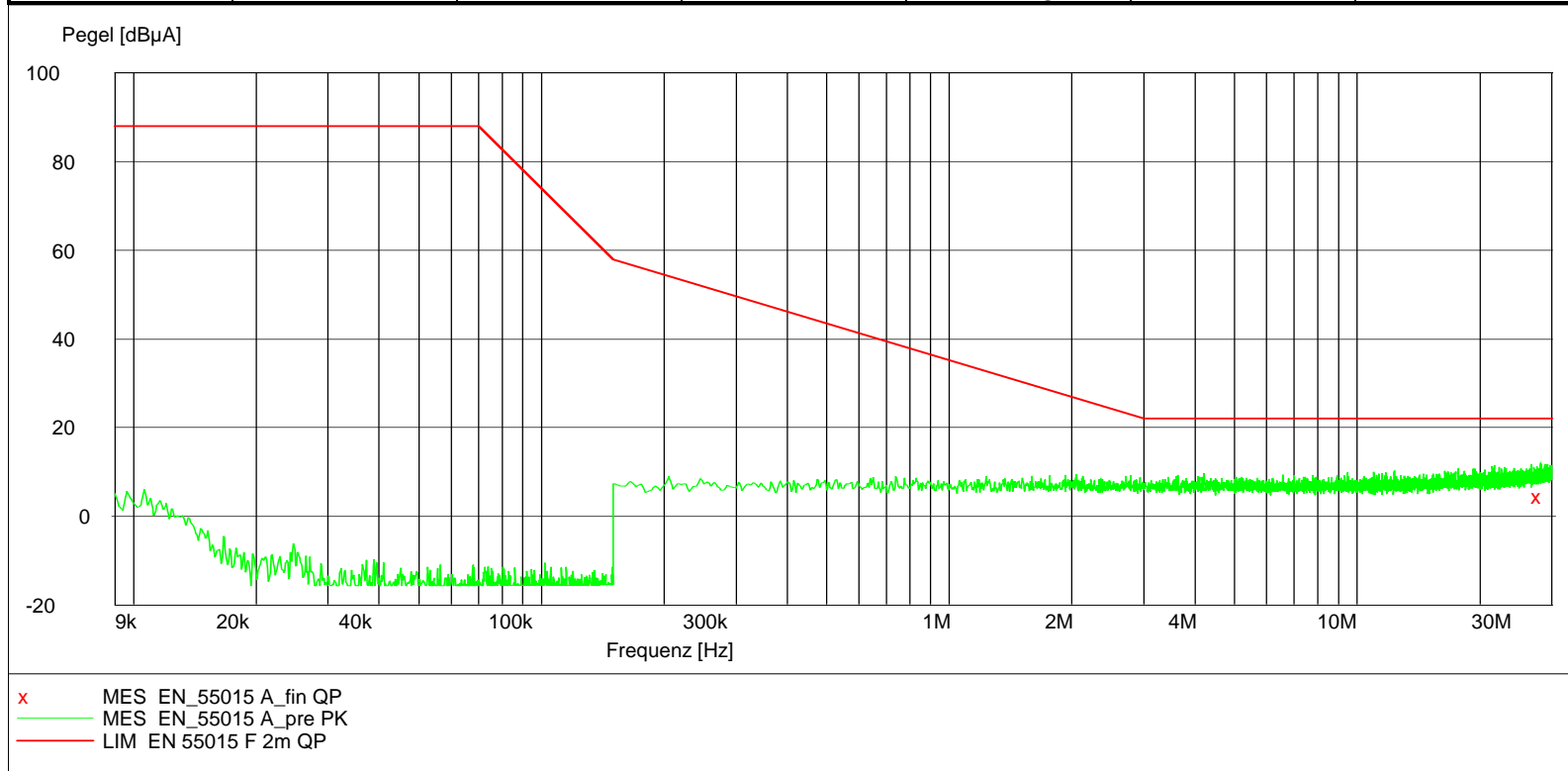


Frequenzliste mit Quasi-Peak-Werten

Frequenz [MHz]	Pegel [dB/uA]	Limit [dB/uA]	Margin [dB]
4.210000	2.20	22.0	19.8
29.830000	4.70	22.0	17.3

Abstrahlung nach EN 55015 Achse Z

Start	Stop	Step	Bandbreite	Detektor	Messzeit	Vorverstärker
9.0 kHz	150.0 kHz	200.0 Hz	0.2 kHz	MaxPeak	10.0 ms	
150.0 kHz	30.0 MHz	5.0 kHz	10 kHz	MaxPeak	10.0 ms	
				QuasiPeak	1.0 s	
				Average	5.0 ms	

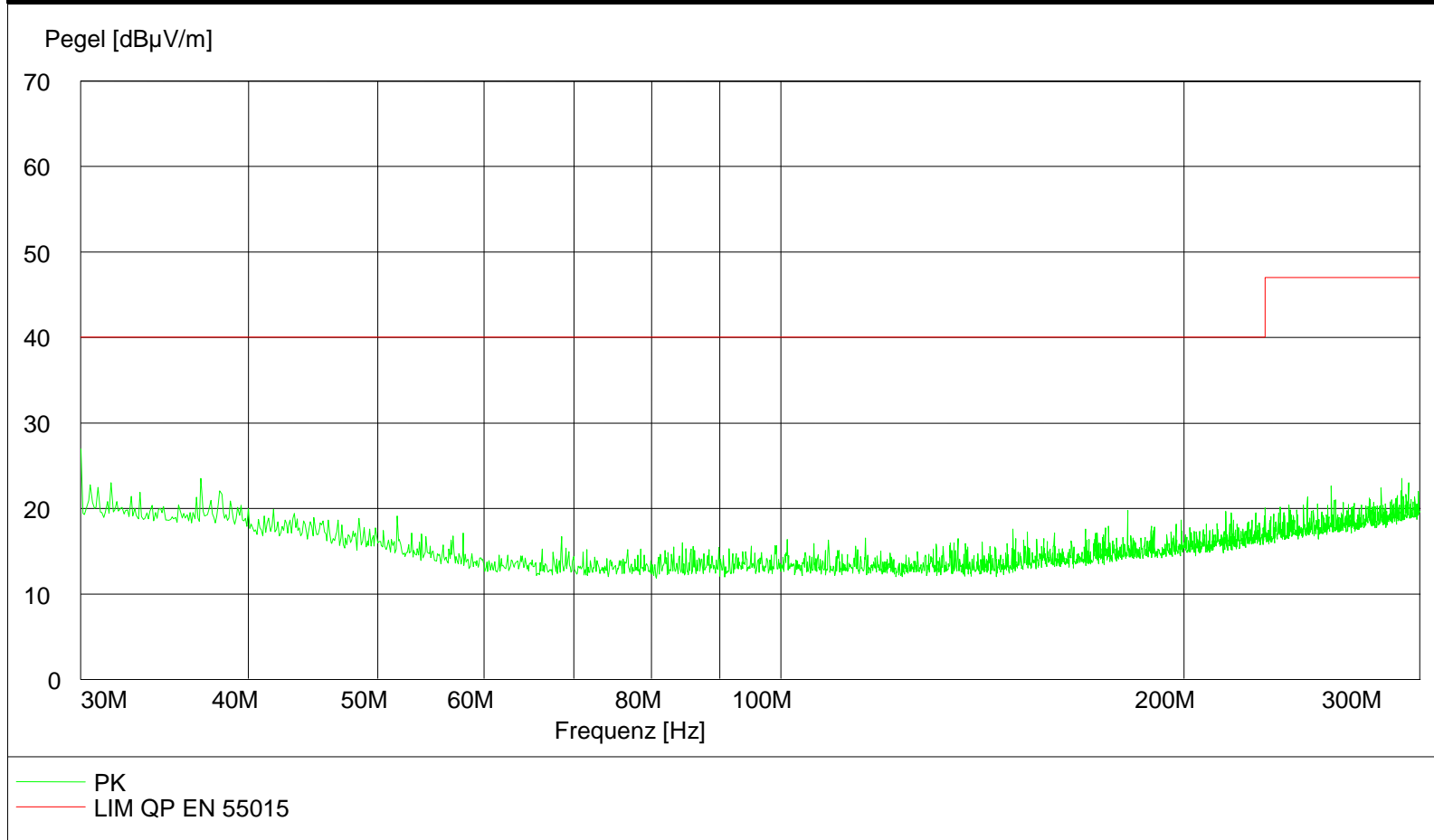


Frequenzliste mit Quasi-Peak-Werten

Frequenz [MHz]	Pegel [dB/uA]	Limit [dB/uA]	Margin [dB]
28.205000	4.40	22.0	17.6

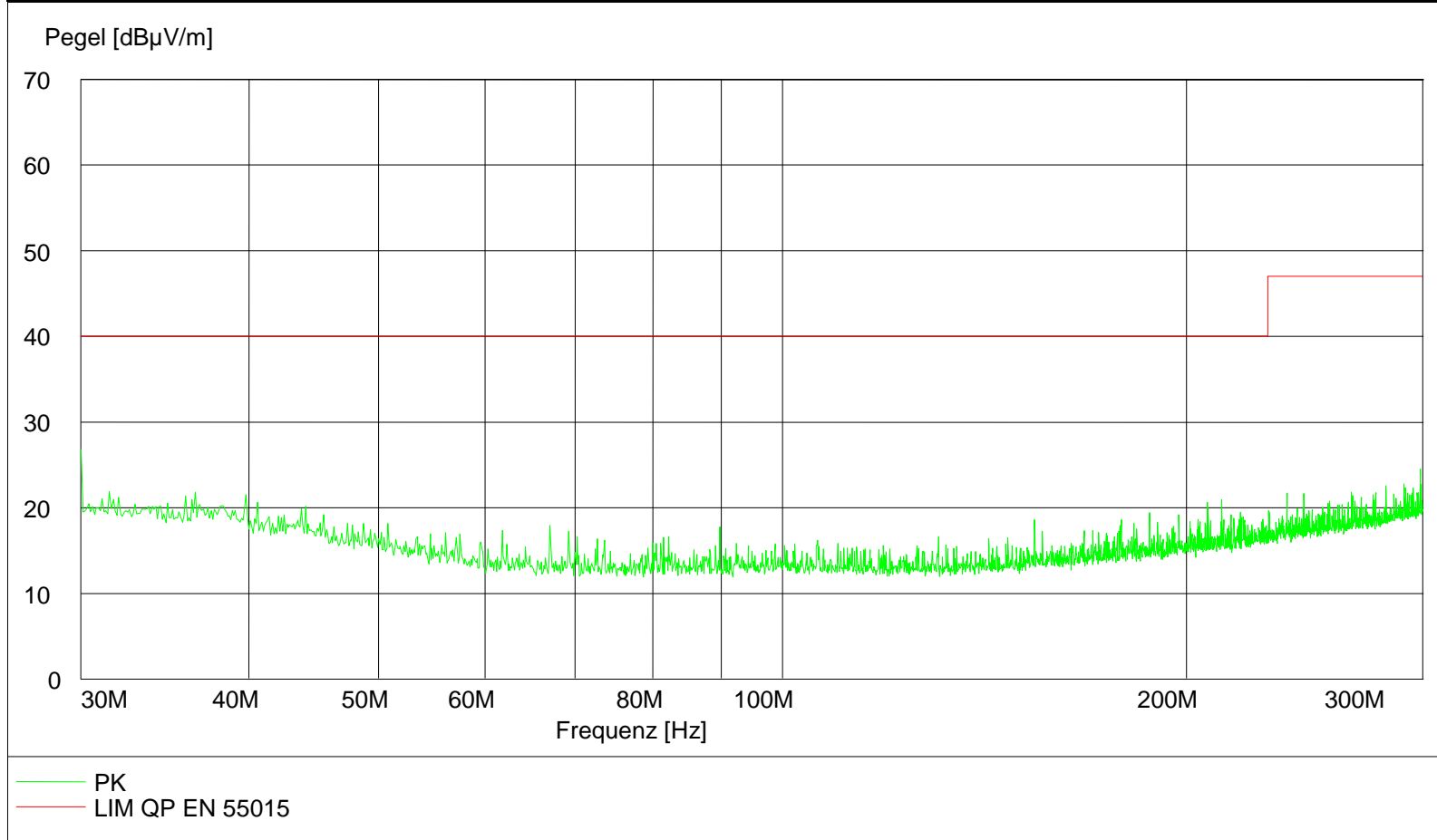
Abstrahlung nach EN 55015
Antenne vertikal 3m / 1.45m

Start	Stop	Step	Bandbreite	Detektor	Messzeit	Vorverstärker
30.0 MHz	300.0 MHz	100.0 kHz	120 kHz	MaxPeak	100.0 ms	10 dB
				QuasiPeak	1.0 s	10 dB



Abstrahlung nach EN 55015
Antenne horizontal 3m / 1.45m

Start	Stop	Step	Bandbreite	Detektor	Messzeit	Vorverstärker
30.0 MHz	300.0 MHz	100.0 kHz	120 kHz	MaxPeak	100.0 ms	10 dB
				QuasiPeak	1.0 s	10 dB



EMC: RF conducted disturbances

QNL-E1668-06-12

Test requirements:

The apparatus shall be tested in its normal position for use and be plied with nominal voltage. All parts which are normally earthed should also be earthed during testing.

- Frequency range: 0.15 ... 80 MHz
- Amplitude: 10 Vrms
- Modulation: 80 %/ 1 kHz
- Test points are: Mains
- Temperature: 22°C
- Humidity: 50%

Acceptance criteria:

During and after the test the apparatus should show no damage or loss of information and should function according to specifications.

Reference: IEC/EN 61000-4-6

Test equipment:

Test equipment	Manufacturer / Type	QUINEL Inventory no.	Calibration	
			last	next
HF-Clamp	Lüthi EM 101	327926	May 11	May 13
HF-Clamp	Lüthi MDS-20	500156	Oct 11	Oct 13
CDN	Lüthi 801-M2/M3	500041	Feb 12	Feb 14
HF-generator	Rohde & Schwarz SME 03	500170	Jan 11	Jan 13
HF-generator	Rohde & Schwarz SME 03	500070	Dec 11	Dec 13
HF-amplifier	Amplifier Research 150 L	326639	Jan 11	Jan 13
Power Reflection meter	Rohde & Schwarz NAP	327803	Dec 10	Dec 12
Attenuator	JFW 50FH-006-300	500047	Nov 08	Nov 12
Power head	Rohde & Schwarz NAP Z8	863.190/016	Dec 10	Dec 12

Object: Portable floor lamp with infrared detector

Applicant: OEE

Manufacturer: OEE

Type: Luna

Object number: EMV Test sample

Result: **Test passed**

Remarks: -

Notes:

Lamp did not switch on unintendedly. A signal was induced every 15s to control normal operation. The software was modified to indicate the triggering signal only.

Photographs:



EMC: Radiated electromagnetic field

QNL-E1668-03-12

Test requirements:

The apparatus is to be tested in his normal position for use. The apparatus is supplied with nominal voltage. All parts which are earthed should also be earthed during test.

- Frequency range 80 - 1000 MHz (80% AM Mod. / 1 kHz)
- Fieldstrength > 5 V/m
- Frequency range 1400 – 2700 MHz (80% AM Mod. / 1 kHz)
- Fieldstrength > 3 V/m
- Temperature: 22°C
- Humidity: 50%

Acceptance criteria:

During and after the test the apparatus should not show change of information or influence in normal operation.

Reference:

IEC/EN 61000-4-3

Test equipment:

Test equipment	Manufacturer / Type	QUINEL Inventory no.	Calibration	
			last	next
Field Probe	ETS Lindgren HI-6005	500186	April 11	April 13
HF-generator	Rohde & Schwarz SME 03	500170	Jan 11	Jan 13
HF-generator	Rohde & Schwarz SME 03	500070	Dec 11	Dec 13
HF-amplifier	Amplifier Research 100 W 1000M1	500019	Jan 11	Jan 13
HF-amplifier	Amplifier Research 15S1G3	500079	Jan 11	Jan 13
EMC anechoic room	EUROSHIELD	24655	Oct 09	Oct 14
Antenna	ETS Lindgren BICONILOG 3142C	500096	Oct 09	Oct 14
Waveguide Horn	ETS Lindgren EMCO 3115	500072	Oct 09	Oct 14
Power head	Rohde & Schwarz NAP Z5	863900/024	Dec 10	Dec 12
Power Reflection meter	Rohde & Schwarz NAP	327803	Dec 10	Dec 12
Field monitor	Amplifier Research FM1000 AR	326642	Dec 10	Dec 15

Object: Portable floor lamp with infrared detector

Applicant: OEE

Manufacturer: OEE

Type: Luna

Object number: EMV Test sample

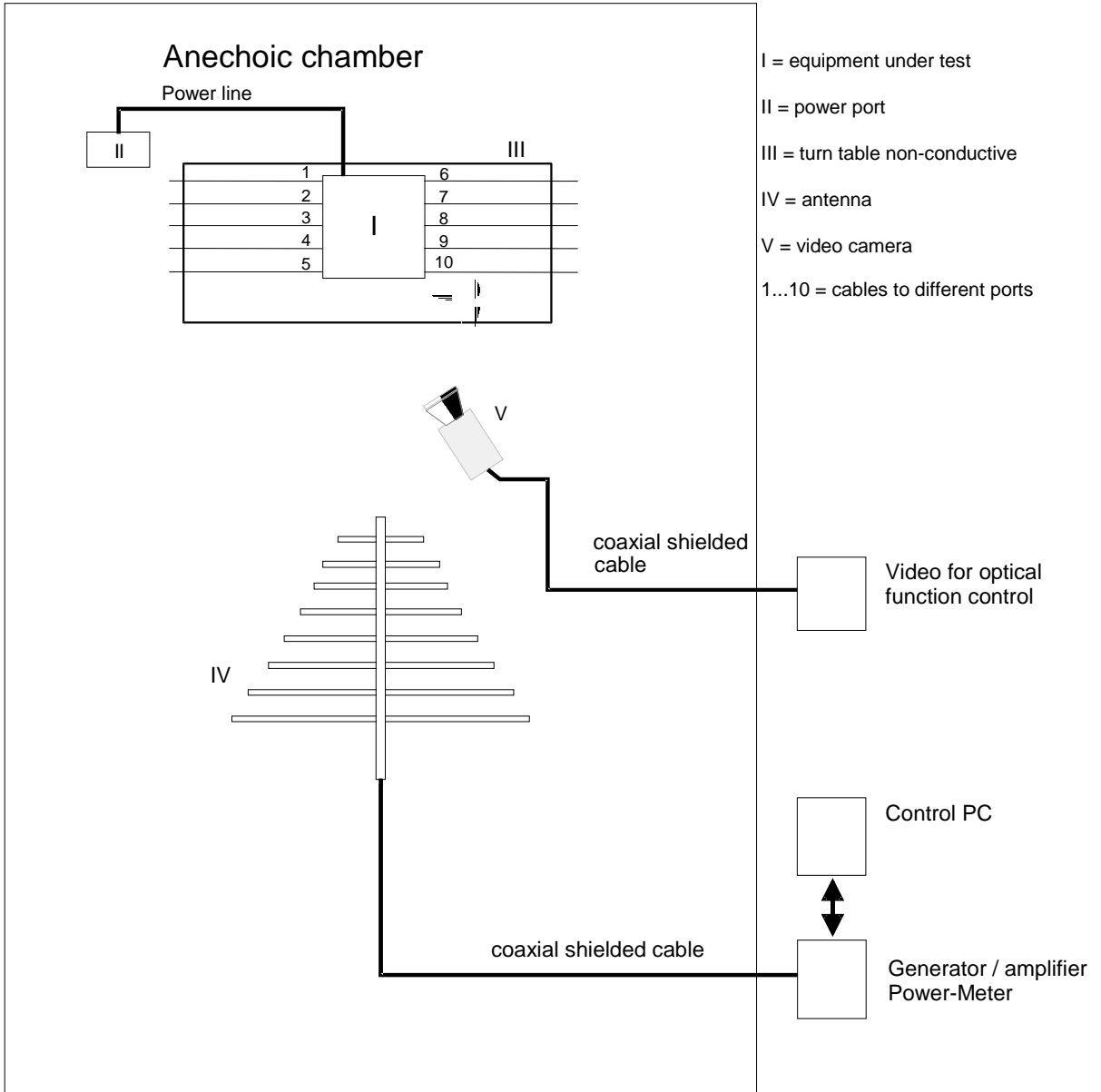
Result: **Test passed**

Remarks: -

Notes:

The lamp did not switch on unintendedly. A signal was induced every 15s to control normal operation. The software was modified to indicate the triggering signal only.

EMC: Immunity test

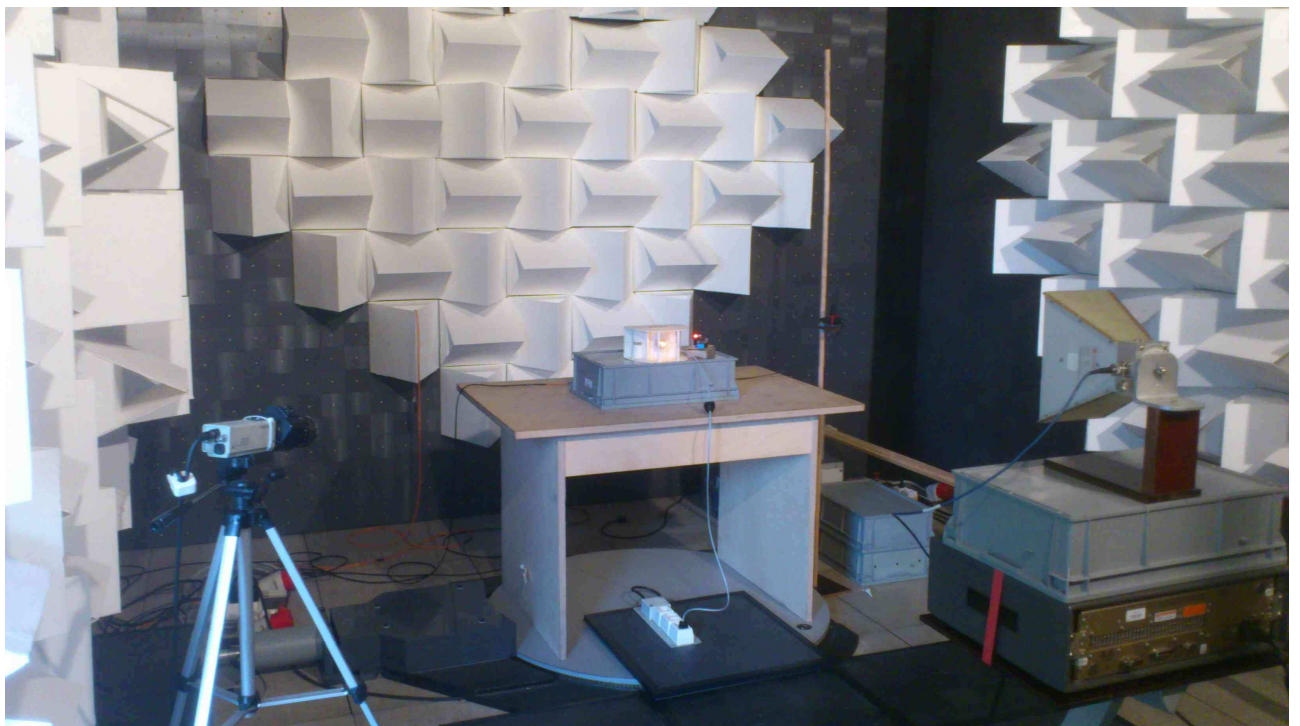


Antenna position horizontal

Antenna position vertical

Photographs:





EMC: Power frequency magnetic field

QNL-E1668-08-12

Test requirements:

The apparatus shall be placed in the center of a Helmholtz-coil to be tested in its normal position for use. The Helmholtz-coil shall be supplied by a regulating transformer. The apparatus shall be supplied with nominal voltage.

- Frequency: 50 Hz
- Amplitude: 30 A/m
- Duration of test: 2 minutes
- Temperature: 22°C
- Humidity: 50%

Acceptance criteria:

During and after the test the apparatus should show no damage or loss of information and should function according to specifications.

Reference: IEC/EN 61000-4-8

Test equipment:

Test equipment	Manufacturer / Type	QUINEL Inventory no.	Calibration	
			last	next
Helmholtz-coil	QUINEL	2371992	April 08	April 16

Object: Portable floor lamp with infrared detector

Applicant: OEE

Manufacturer: OEE

Type: Luna

Object number: EMV Test sample

Result: **Test passed**

Remarks: -

Notes:

Lamp did not switch on unintendedly. Operation cycle was unaffected.

Photographs:



EMC: Electrical fast transient burst

QNL-E1668-04-12

Test requirements:

The apparatus shall be tested in its normal position for use. All parts which are normally earthed, should also be earthed during testing.

- Single pulses
- Testing voltage: + / - 1 kV
- Pulse arise time: 5 ns
- Pulse length (50 %): 50 ns
- Pulse frequency: 5 kHz
- Length of one packet: 15 ms
- Rate of repetition: 1 packet each 300 ms
- Test-time: 60 s
- Temperature: 22°C
- Humidity: 50%
- Test points are:
 - Signal and control lines: line to earth/common mode
 - DC Input/output: line to earth/common mode
 - Power port input/output: line to earth/common mode
 - Functional earth port: line to earth/common mode

Acceptance criteria:

During and after the test the apparatus should show no damage or loss of information and should function according to specifications.

Reference: IEC/EN 61000-4-4

Test equipment:

Test equipment	Manufacturer / Type	QUINEL Inventory no.	Calibration	
			last	next
Burst tester	Haefely PEFT 4010	500198	May 12	May 14
Burst tester	Haefely PEFT.1	327761	Oct 10	Oct 12
Coupling Filter	Haefely FP 16/3-1	450006	Oct 10	Oct 12
Clamp	Haefely	450007	Oct 10	Oct 12

Object: Portable floor lamp with infrared detector

Applicant: OEE

Manufacturer: OEE

Type: Luna

Object number: EMV Test sample

Result: **Test passed**

Remarks: -

Notes:

Lamp did not switch on unintendedly. Operation cycle was unaffected.

Photographs:



EMC: Electrostatic discharge

QNL-E1668-02-12

Test requirements:

The apparatus shall be tested in its normal position for use. All parts which are normally earthed, should also be earthed during testing.

- Single pulses
- Testing voltage: 8 kV air
4 kV contact
- Pulse-arise time: 0.7 ... 1 ns
- Pulse-length (50 %): 30 ns
- Time between 2 discharges: min. 2 s
- Temperature: 22°C
- Humidity: 50%
- Main: 230VAC

Acceptance criteria:

The pulses should not cause any change of information or influence the normal operation of the apparatus according to specifications.

Reference: IEC/EN 61000-4-2

Test equipment:

Test equipment	Manufacturer / Type	QUINEL Inventory no.	Calibration	
			last	next
ESD Simulator	EM TEST Dito 2.31	500102	July 11	July 13

Object: Portable floor lamp with infrared detector

Applicant: OEE

Manufacturer: OEE

Type: Luna

Object number: EMV Test sample

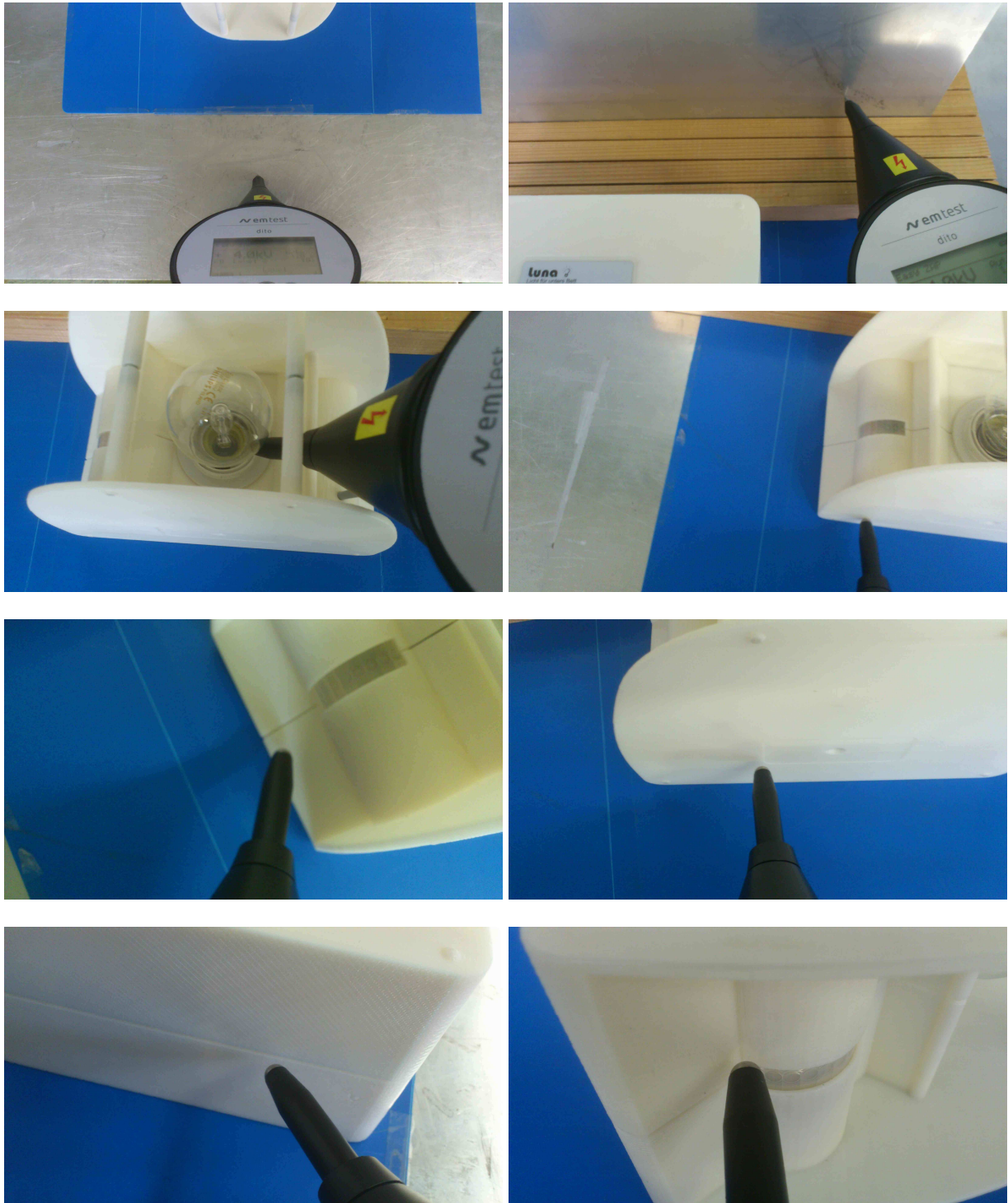
Result: **Test passed**

Remarks: -

Notes:

Lamp did not switch on unintendedly. Lamp operated normaly after test.

Photographs:



EMC: Surge

QNL-E1668-55-12

Test requirements:

The apparatus shall be tested in its normal position for use and be supplied with nominal voltage. All parts which are normally earthed should also be earthed during testing.

Line to line:

- Voltage pulse: 1 kV 1.2/50 μ s
- Current pulse 8/20 μ s
- Source impedance: 2 Ω
- 5 positive pulses at 90° and 5 negative pulses 27 0° phase angle

- Temperature: 22°C
- Humidity: 50%

Acceptance criteria:

During and after the test the apparatus should show no damage or loss of information and should function according to specifications.

Reference:

IEC/EN 61000-4-5

Test equipment:

Test equipment	Manufacturer / Type	QUINEL Inventory no.	Calibration	
			last	next
Impulse Tester	Haefely PC6-288	325333	Dec 11	Dec 13
Coupling Filter	Haefely FP20/3-3.2	500057	Nov 10	Nov 12
Coupling Network	Haefely IP6.2	500058	Nov 10	Nov 12
Oscilloscope	Le Croy 9400A	326490	Dec 11	Dec 13
Hi Voltage Probe	Tektronix P6013	312497	May 12	May 14

Object:

Portable floor lamp with infrared detector

Applicant:

OEE

Manufacturer:

OEE

Type:

Luna

Object number:

EMV Test sample

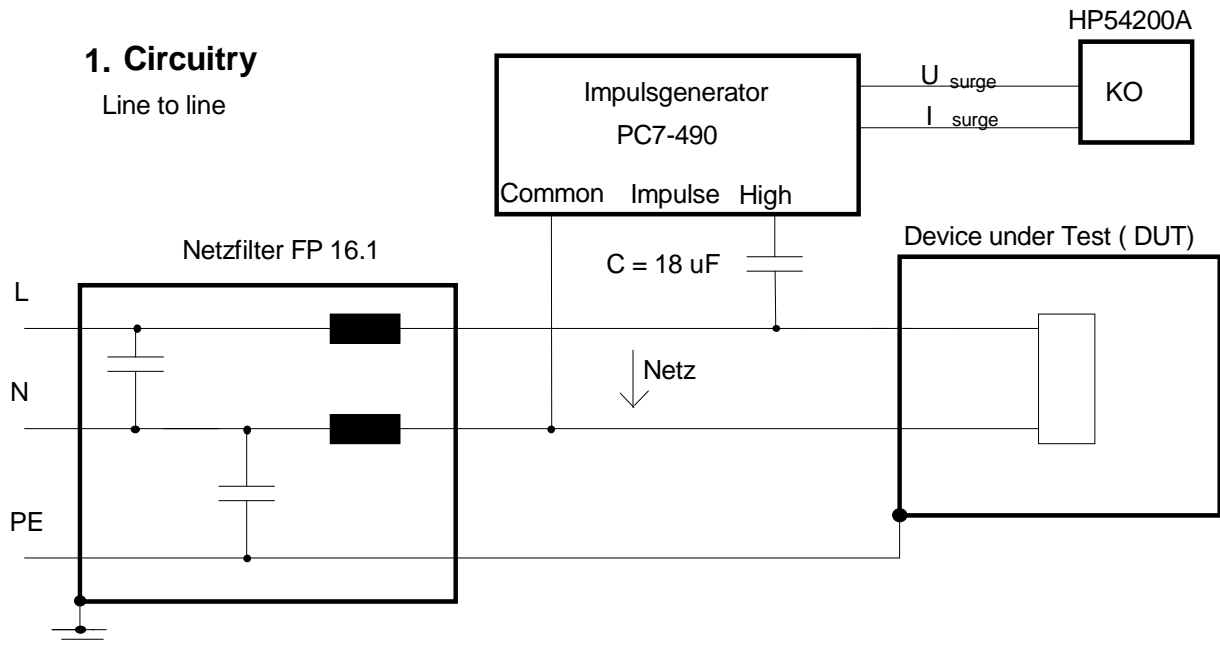
Result:**Test passed****Remarks:**

-

Notes:

Lamp did not switch on unintendedly. Lamp operated normally after test.

Surge



Photographs:



EMC: Voltage dips and interruptions

QNL-E1668-11-12

Test requirements:

The apparatus shall be tested in its normal position for use.

a) Voltage dips: $V_n = 30\%$
 Time between 2 interruptions: 10 s
 Test duration: 1 min.
 Interruption time: 200 ms

b) Voltage interruptions $V_n \Rightarrow 95\%$
 Time between 2 interruptions: 10 s
 Test duration: 1 min.
 Interruption time: 10 ms

- Temperature: 22°C
 - Humidity: 50%

Acceptance criteria:

During and after the test the apparatus should show no damage or loss of information and should function according to specifications.

Reference: IEC/EN 61000-4-11

Test equipment:

Test equipment	Manufacturer / Type	QUINEL Inventory no.	Calibration	
			last	next
Flicker Meter	SPITZENBERGER & SPIES E 5000/PAS	500055	Feb 12	Feb 14

Object: Portable floor lamp with infrared detector
 Applicant: OEE
 Manufacturer: OEE
 Type: Luna
 Object number: EMV Test sample

Result: **Test passed**

Remarks: -

Notes:

Lamp did not switch off when activated during test and operated normally.

Name:	Mchael Scheidt	Serial no:	EMV Test Sample
Department:	EMV	Operating modes:	230V/50Hz/53W
Company:	Quinel	Comment1:	
Test report no:	E1668-12	Comment2:	-
Device:	Lamp with motion sensor	Comment3:	-
Specimen:		Comment4:	-
Manufacturer:	OEE	Date:	06.07.2012
Type:	Luna	Test date:	06.07.2012

Test conditions: EN 61000-4-11 voltage dips, short interruptions and variations test

Voltage/frequency: 230.0V/50.0Hz
 Test phase: Single phase/L1-N
 Executed test: EN61547
 Test description: -
 Disturbances per step: 3 (per phase angle) / 10.5 sec delay between

Step	Disturbance	TestLevel	Duration	Phase angle(s) (Ref.Ph.1)
1	Voltage dip/short interruption	0%	0.5 periods	0°
2	Voltage dip/short interruption	70%	10 periods	0°

Test results:

- Normal performance within the specified limits
- Temporary degradation or loss of function or performance which is self-recoverable
- Temporary degradation or loss of function or performance which requires operator intervention or system reset
- Degradation or loss of function which is not recoverable due to damage of equipment (components) or software, or data loss

Comments:

Geprüft mit EMC test software V2.4c / PAS5000 von Spitzenberger + Spies GmbH & Co. KG, Schmidstr 32-34, D-94234 Viechtach, 06.07.2012

EMC: Harmonic current emissions

QNL-E1668-32-12

Test requirements:

The apparatus shall be tested in its normal position for use and be supplied with nominal voltage. All parts which are normally earthed, should also be earthed during testing.

- Temperature: 22°C
- Humidity: 50%

Acceptance criteria:

The measured disturbances from harmonic current emissions should not reach the limits specified in EN 61000-3-2 (A,B,C or D) (Class C).

Reference: EN 61000-3-2

Test equipment:

Test equipment	Manufacturer / Type	QUINEL Inventory no.	Calibration	
			last	next
Flicker Meter	SPITZENBERGER & SPIES E 5000/PAS	500055	Feb 12	Feb 14

Object: Portable floor lamp with infrared detector

Applicant: OEE

Manufacturer: OEE

Type: Luna

Object number: EMV Test sample

Result: **Test passed**

Remarks: -

Notes:

Measurement was taken during a lamp switch on/off cycle.

Name:	Michael Scheidt	Serial no:	EMV Test Sample
Department:	EMV	Operating modes:	230V 50Hz 53W
Company:	Quinel	Comment1:	
Test report no:	E1668-12	Comment2:	-
Device:	Lamp with motion sensor	Comment3:	-
Specimen:		Comment4:	-
Manufacturer:	OEE	Date:	06.07.2012
Type:	Luna	Test date:	06.07.2012

Maximum RMS current and corresponding values in time window 93:

Voltage:	230.97 Vrms	THD=0.01 %	THV=0.015 V	POHV=0.003 V	PWHD=0.01 %
Current:	0.233 Arms	THD=33.99 %	THC=0.076 A	POHC=0.013 A	PWHD=43.55 %
Power:	49.1 W	P1=49.1 W	53.8 VA		
Powerfactor:	0.913	CosPhi1: 0.967			

Test conditions: EN 61000-3-2:2000+A2, f=50 Hz, Phase=L1, Range=0.80 A, Rated power: 100 W
Time window cycles=10/12 (200ms), Grouping of harmonics=on

HARMONIC ANALYSIS: Test PASS

Tobs=entire measurement; POHC: avg=0.01 A, limits=0.02 A; Rated power exceeded, changed to 49.08 W

Ha	Entire measurement (1.0 min = 300 time windows)					Worst 2.5 min		Average		P A S S	F A I L
	Maximum	Window	EN61000-3-2 Class Cb) 1	Margin in Max/Wn	100 to 150%	Ex- ceeded	100 to 150%	Ex- ceeded	Value		
DC	0.0045 A	17	----	----	0	0	n.e.	n.e.	-0.0011 A	0	X
1	0.2197 A	92	----	----	0	0	n.e.	n.e.	0.0700 A	0	X
2	0.0038 A	157	----	----	0	0	n.e.	n.e.	0.0018 A	0	X
3	0.0916 A	58	0.1669 A	-45.1%	0	0	n.e.	n.e.	0.0360 A	0	X
4	0.0037 A	57	----	----	0	0	n.e.	n.e.	0.0016 A	0	X
5	0.0491 A	148	0.0933 A	-47.3%	0	0	n.e.	n.e.	0.0190 A	0	X
6	0.0037 A	46	----	----	0	0	n.e.	n.e.	0.0016 A	0	X
7	0.0320 A	156	0.0491 A	-34.9%	0	0	n.e.	n.e.	0.0127 A	0	X
8	0.0036 A	52	----	----	0	0	n.e.	n.e.	0.0016 A	0	X
9	0.0233 A	49	0.0245 A	-5.1%	0	0	n.e.	n.e.	0.0096 A	0	X
10	0.0036 A	52	----	----	0	0	n.e.	n.e.	0.0015 A	0	X
11	0.0186 A	142	0.0172 A	8.5%	39	0	n.e.	n.e.	0.0077 A	0	X
12	0.0036 A	52	----	----	0	0	n.e.	n.e.	0.0015 A	0	X
13	0.0153 A	147	0.0145 A	5.3%	29	0	n.e.	n.e.	0.0064 A	0	X
14	0.0036 A	52	----	----	0	0	n.e.	n.e.	0.0015 A	0	X
15	0.0129 A	135	0.0126 A	2.3%	21	0	n.e.	n.e.	0.0054 A	0	X
16	0.0035 A	52	----	----	0	0	n.e.	n.e.	0.0015 A	0	X
17	0.0112 A	140	0.0111 A	1.0%	5	0	n.e.	n.e.	0.0047 A	0	X
18	0.0035 A	48	----	----	0	0	n.e.	n.e.	0.0015 A	0	X
19	0.0098 A	144	0.0099 A	-1.4%	0	0	n.e.	n.e.	0.0042 A	0	X
20	0.0034 A	52	----	----	0	0	n.e.	n.e.	0.0014 A	0	X
21	0.0086 A	136	0.0090 A	-4.0%	0	0	n.e.	n.e.	0.0037 A	0	X
22	0.0034 A	52	----	----	0	0	n.e.	n.e.	0.0014 A	0	X
23	0.0078 A	139	0.0082 A	-5.5%	0	0	n.e.	n.e.	0.0033 A	0	X
24	0.0033 A	53	----	----	0	0	n.e.	n.e.	0.0014 A	0	X
25	0.0070 A	142	0.0076 A	-8.0%	0	0	n.e.	n.e.	0.0029 A	0	X
26	0.0033 A	52	----	----	0	0	n.e.	n.e.	0.0014 A	0	X
27	0.0062 A	136	0.0070 A	-10.8%	0	0	n.e.	n.e.	0.0026 A	0	X
28	0.0032 A	53	----	----	0	0	n.e.	n.e.	0.0014 A	0	X
29	0.0057 A	139	0.0065 A	-12.7%	0	0	n.e.	n.e.	0.0024 A	0	X
30	0.0032 A	52	----	----	0	0	n.e.	n.e.	0.0013 A	0	X
31	0.0052 A	140	0.0061 A	-15.3%	0	0	n.e.	n.e.	0.0022 A	0	X
32	0.0031 A	52	----	----	0	0	n.e.	n.e.	0.0013 A	0	X
33	0.0047 A	143	0.0057 A	-18.3%	0	0	n.e.	n.e.	0.0020 A	0	X
34	0.0031 A	52	----	----	0	0	n.e.	n.e.	0.0013 A	0	X
35	0.0043 A	139	0.0054 A	-20.6%	0	0	n.e.	n.e.	0.0018 A	0	X
36	0.0030 A	48	----	----	0	0	n.e.	n.e.	0.0013 A	0	X
37	0.0039 A	140	0.0051 A	-23.1%	0	0	n.e.	n.e.	0.0016 A	0	X
38	0.0029 A	52	----	----	0	0	n.e.	n.e.	0.0012 A	0	X
39	0.0036 A	142	0.0048 A	-26.3%	0	0	n.e.	n.e.	0.0015 A	0	X
40	0.0029 A	51	----	----	0	0	n.e.	n.e.	0.0012 A	0	X

Geprüft mit EMC test software V2.4c / PAS5000 von Spitzenberger + Spies GmbH & Co. KG, Schmidstr. 32-34, D-94234 Viechtach, 06.07.2012