SPECIFICATION FOR APPROVAL

Customer : _____

Customer P/N : _____

Product Type : Digital Ballast

Product No. : 600W Digital Ballast

Issue Date : 2016.11.29

Prepared By			
Checked By	R&D	DQE	QC
Approved By			

Web：www.lumatek-lighting.com

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Revision History

Product		600W Digital Ballast		
Rev.	**Description**	**Editor**	**Check**	**Date**
V01	Nominally issued			2016.01.11
R02	Change input wire position			2016.06.14
R03	Input, output power is reduced to an upgrade before the data			2016.07.18
V1.1	Upgrade the EMC			2016.11.29
V1.2	Upgrade the parameters			2017.01.24
V1.3	Update the mark			2018.06.12
V1.4	Update the Color Box			2018.10.17
V1.5	Update the Packing			2018.11.26
V1.6	Update the parameter			2018.11.30
V1.7	Update the mark			2019.02.25

Contents

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1. Description

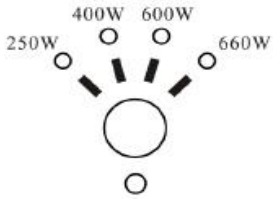
This is an 600W intelligent electronic ballast.Input voltage is 220-240V,50/60Hz.It will delay 0-6S ignition randomly.And knob dimming range can be 250W-400W-600W-660W.It can match well with 250/400/600W HPS/MH lamps according to IEC standard.

Date	Prepared	Checked	Item No	600W Digital Ballast

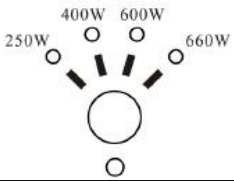
2. Function and parameters

2.1Knob Control

2.1.1Input Characteristics

Parameter	Conditions		Min	Type	Max	Units
MainsVoltage	Operational Voltage		195	220-240	265	V
	Safe Voltage		185	220-240	275	
Mains Frequency f_{mains}	Operational Frequency		48	50/60	63	Hz
	Safe Frequency		45	50/60	66	
Mains Power P_{mains} 	P=660W		669	690	711	W
	P=600W		615	636	657	
	P=400W		403	424	445	
	P=250W		244	265	286	
Mains Current I_{mains}	P=660W	V_{mains} =240V	2.8	2.9	3.0	A
		V_{mains} =230V	2.9	3.0	3.2	
		V_{mains} =220V	3.0	3.2	3.3	
		V_{mains} =195V	3.4	3.6	3.7	
	P=600W	V_{mains} =240V	2.5	2.7	2.8	
Power Factor	P=660W		0.97	0.98	--	--
THD	P=660W		--	--	10%	--
Inrush Current	V_{mains} =240V		--	--	30	A
Pulse Duration	--		--	--	0.8	ms

2.1.2 Output Characteristics

Parameter	Conditions		Min	Type	Max	Units
Lamp Frequency f_{lamp}	P= 660W		37	48	62	KHz
Efficiency(%)	V_{mains} =240V	P= 660W	94	95	--	--
Lamp Power P_{lamp} 	P= 660W		639	660	681	W
	P=600W		579	600	621	
	P=400W		379	400	421	
	P=250W		229	250	271	
Lamp Voltage	600WHPS		86	110	134	V
Ignition Voltage	C_{load}<100pF		3000	4000	5000	V
Ignition Interval	--		1-5-5-5-5			Min

Note:1.Dimming accuracy is 3%.

2. The parameters of input and output, such as no special requirements, It test in products in the rated operating voltage and match with standard load stability after 10min .

2.2 Recommended Matching Lamps

Lamp	600W	LUMATEK HPS600W
		LUMATEK HPS400W
		LUMATEK HPS250W
		SUNMASTER LM.600W.U25 5.5K
		SOLARMAX MH600W MHT 600W/VEG
	400W	AGROSUN HPS600W SUPER 5002070
		OSRAM HQI-BT 400W/N/SI
	250W	SUNMASTER HPS600W SL.600W.U46.VRD.HO
		OSRAM HQI-BT 250W/N/SI

2.3 Protection

2.3.1Open Circuit Protection

When output is shut off， the ballast will power off for open circuit protection. When errors are removed and the power is re-applied to the product, it can work normally.

2.3.2Short Circuit Protection

When output is shorted, the ballast will power off for short circuit protection.When errors are removed and the power is re-applied to the product, it can work normally.

2.3.3Over Temperature Protection

When Ta＞40℃,the ballast will shut off for high temperature protection. When the temperature drop to normal and the power is re-applied to the product, it can work normally.

2.3.4Lamp END of Life/Rectification

The ballast will be not damaged when the rectification appears at the end of the lamp life.When replacing a new lamp and the power is re-applied, it can work normally.

2.3.5Over-voltage/ Low-voltage Detect Protection

Protection happens when input voltage is below 175V or up to275V(Output power will drop to 80% when input voltage is175-195V).When input voltage is back to normal, the ballast can work normally.

Note: Voltage accuracy is 5%.

3. Environment

Conditions / Environment	Operating	Shipping and Storage
3.1Temperature	-20℃--+40℃	-40℃--+70℃
3.2Humidity	0%--90%, Non-condensing	0%--95%, Non-condensing
3.3Vibration	Amplitude:0.035mm	Amplitude:0.15mm
	Frequency：10-150Hz	
	Test time in any Direction：30min	
	Sweep velocity：1oct/min	
	Direction：X,Y,Z	
3.4 Waterproof and dustproof	IP20	

4. Safety

4.1 Surface Temperature Rise

When output power is600W， ambient temperature is 25℃and input voltage is240Vac,the surface temperature rise will be lower than 30℃.

4.2 Leakage Current

1mAmax Vmains=240V/50Hz.

4.3Insulation Resistance

The insulation resistance shall be no less than 2M ohm after application of 500Vdcfor 60s.

4.4Dielectric Withstand Voltage (HI-POT)

L,N-PE:1500Vac5.5mAmax/60s.

4.5 Grounded Resistance

＜0.5Ω,25A,60s.

4.6Regulatory Standards

EN 61347-1

EN 61347-2-12

Date	Prepared	Checked	Item No	600W Digital Ballast

5. EMC

5.1 EMI

EN55015
Limit value of radio disturbance characteristics of electrical lighting and similar equipment.

5.2 EMS

5.2.1Surge Immunity

IEC 61000-4-5:
L-N：±1KV;
L/N-PE：±2KV.

5.2.2 Electrical Fast Transient

IEC 61000-4-4:
L-N-PE ：±1KV.

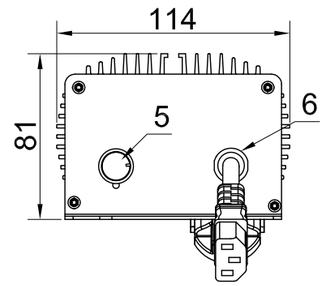
5.2.3Voltage Dips and Interruptions Immunity

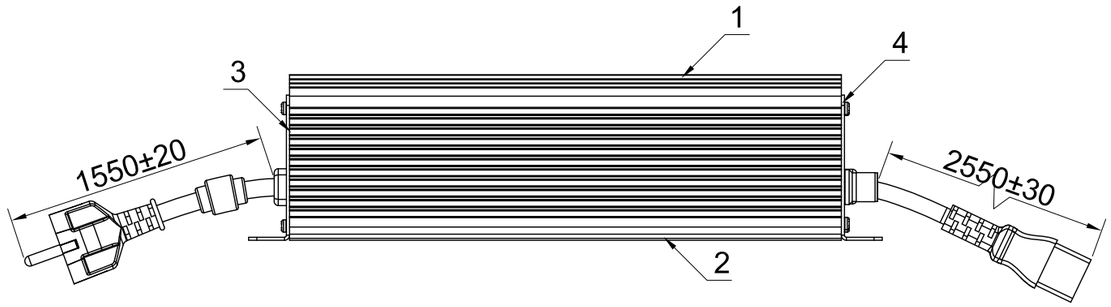
IEC 61000-4-11:
Drop：30% ;cycles：10;
Drop：100% ;cycles：0.5.

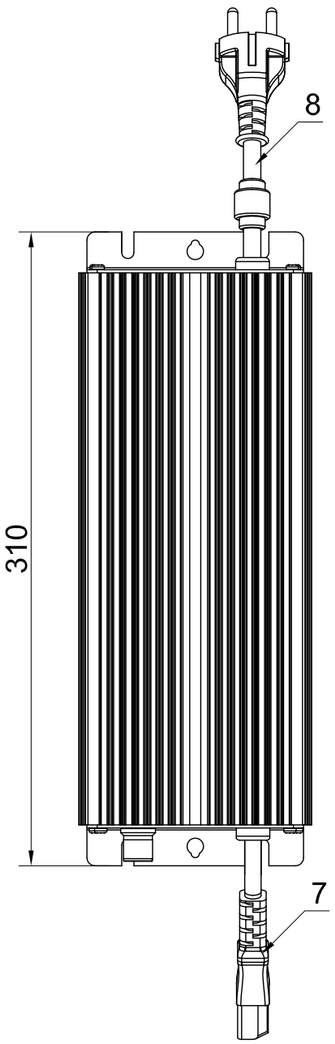
5.2.4 Electrostatic Discharge Immunity

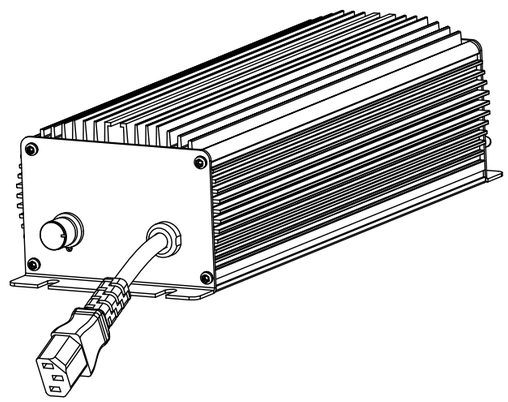
IEC 61000-4-2:
Contact discharge：±4KV;
Air discharge：±8KV.

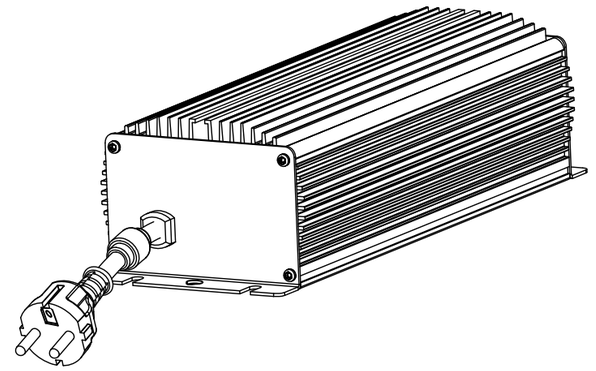
6 Physical Dimension











Item	Part Name	Q'ty	Remark
1	Cover	1	Purple
2	Cover	1	Purple
3	Plate	1	Purple
4	Plate	1	Purple
5	Knob	1	Silver White
6	Strain Relief Bushing	2	Black
7	Output Line	1	Black
8	Input Line	1	Black

Physical Dimension	
Material	Aluminium
Dimension	310×114×81
Weight	3.0±10% Kg

Dimensional Tolerances (V)

<30	±0.25	Decimals	
>30~100	±0.35	.X	±0.3
>100~300	±0.5	X.X	±0.2
Above300	±0.6	X.XX	±0.1

Holes:±0.05 ( )

Up~100	±0.2	250~300	±0.4
100~150	±0.25	300~350	±0.45
150~200	±0.3	350~400	±0.5
200~250	±0.35		

Angles:±0.5° ( )

Up~600	±1.5
600~900	±2.4
900~Over	±3.1

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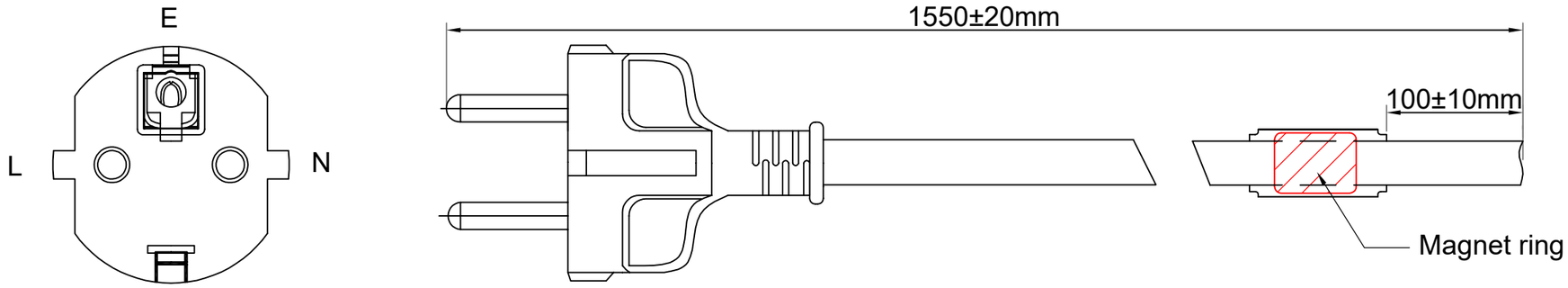
First Angle Projection

Scale	——	Unit	mm
Sheet 1 Of 1			
Issue Date:			
Drawn:			
Design:			

Description:		REV P00
Part No:	–	
Used On:	600W Digital Ballast	SIZE A3

7 Input



Technical requirements:
1.Emifil: 19×50.8×10.15
2.Power cord: Emifil set on the power cord directly, seal
3.Specifications:VDE H05VV-F 3×1.5mm2 70℃

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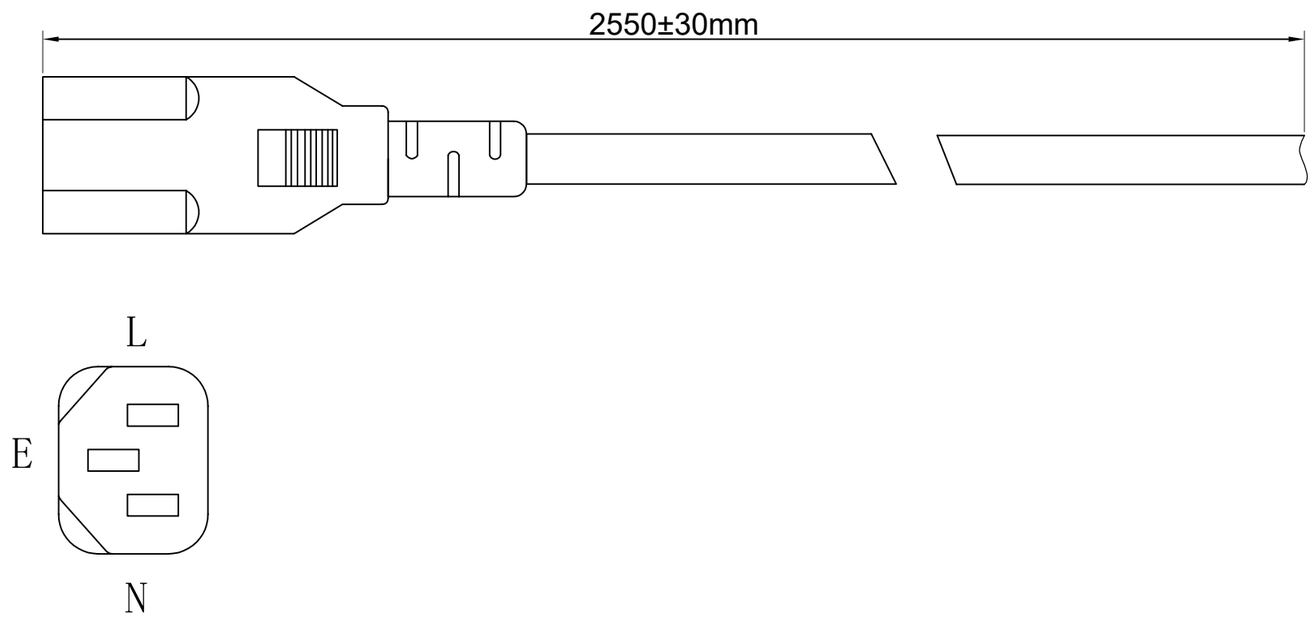
First Angle Projection

Scale	——	Unit	mm	Sheet 1 Of 1	Issue Date:	Drawn:	Design:	Description: Input / Part No: -- / Used On 600W Digital Ballast

REV P00 SIZE A3

8 Output



Technical requirements:
1.Specifications:VDE H05VV-F 3×1.5mm2 70℃

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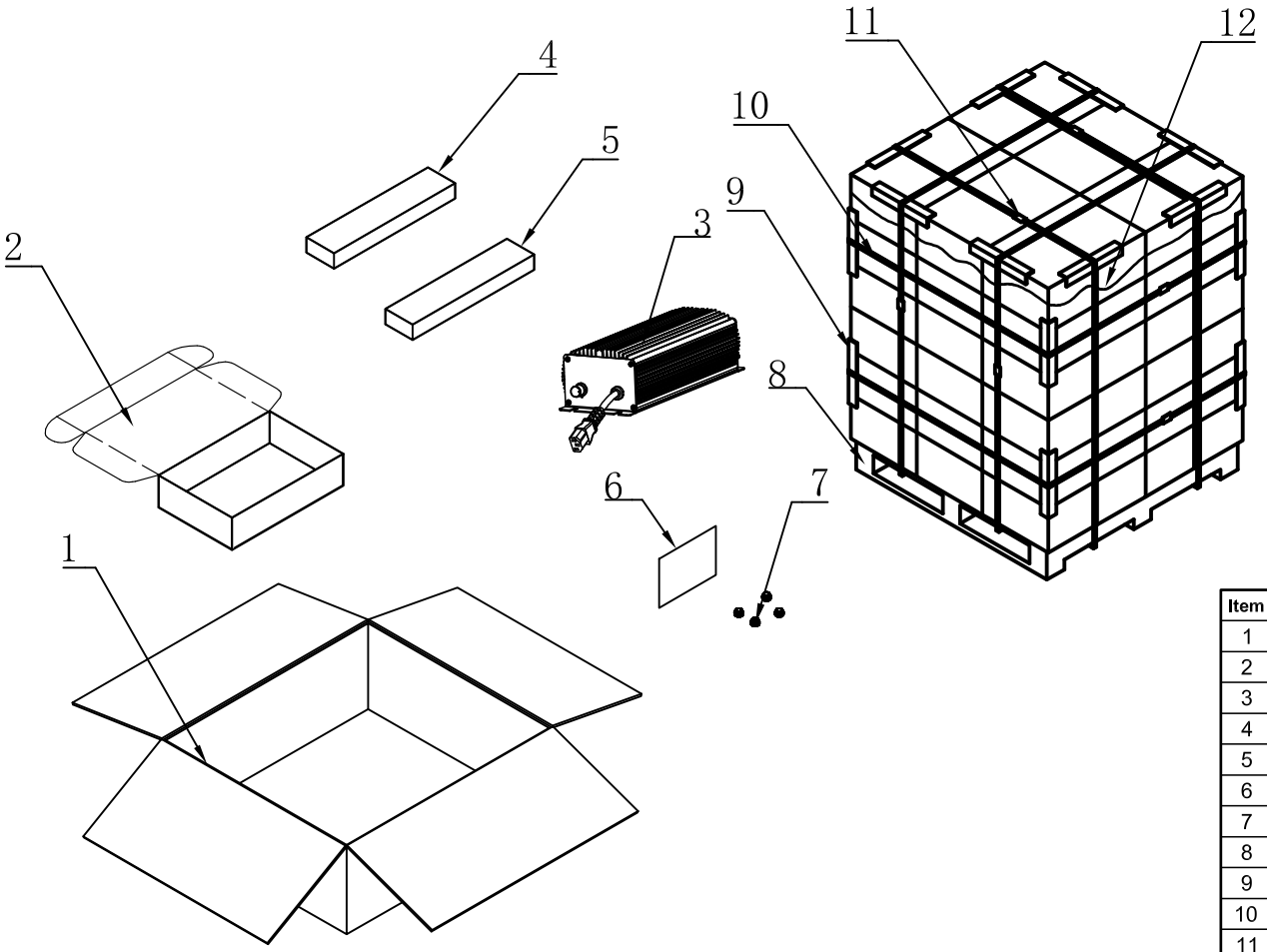
First Angle Projection

Scale	——	Unit	mm	Sheet 1 Of 1	Issue Date:	Drawn:	Design:	

Description:	Output	REV P00
Part No:	--	SIZE A3
Used On	600W Digital Ballast	

9 Packing



Item	Part Name	Outside Dim(mm)	Q'ty
1	Carton	408×359×208	1/4
2	Inner Box	337×192×85	1
3	Digital Ballast	310×114×81	1
4	EPE	40×28×112	1
5	EPE	35×20×115	1
6	Instruction	A5	1
7	Rubber Feet	\	4
8	Pallet	\	1/n
9	Angle Paper	\	\
10	Plastic Strip	\	\
11	Staple Wire	\	1
12	PE Film	t=0.02	1

Notes:

1. Units:mm
2. All the packing material should meet Lumatekspecification.

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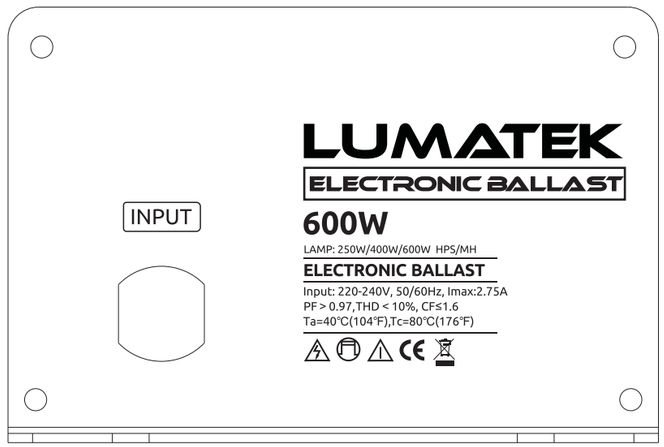
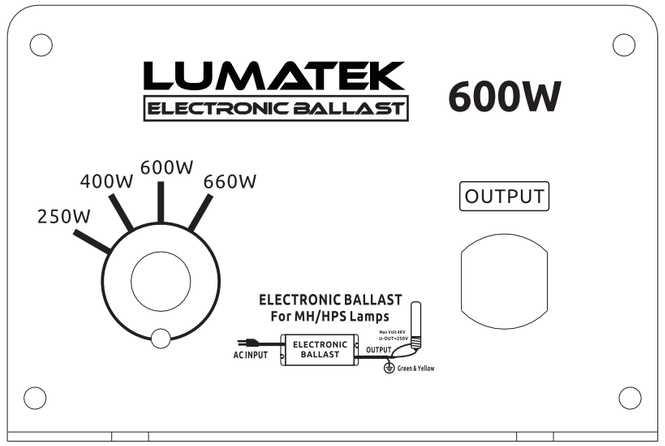
First Angle Projection

Description:		REV	P00
Part No:	–		
Used On:	600W Digital Ballast	SIZE	A3

Scale	——	Unit	mm	Sheet 1 Of 1	Issue Date:	Drawn:	Design:

10 Mark





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First Angle Projection

Scale	——	Unit	mm	Sheet 1 Of 1	Issue Date:	Drawn:	Design:	

Description:	Mark	REV P00
Part No:	--	
Used On	600W Digital Ballast	SIZE A3