

SPECIFICATION FOR APPROVAL

Customer : _____

Customer P/N : _____

Product Type : **Digital Ballast**

Product No. : **600W Twin Ballast**

Issue Date : **2017.03.21**

Prepared By			
Checked By	R&D	DQE	QC
Approved By			

Web: www.lumatek-lighting.com

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1. Description

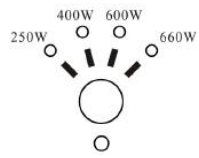
This is an 600W intelligent electronic ballast. It can point two light bulbs at the same time
Input voltage is 220-240V, 50/60Hz.It will delay 0-6S ignition random. And knob dimming range
can be 250W-400W-600W-660W.It can match well with 250W/400W/600W HPS/ MH lamps
according to IEC standard.

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2. Function and parameters

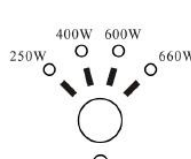
2.1 Knob Control

2.1.1 Input Characteristics

Parameter	Conditions	Min	Type	Max	Units
Mains Voltage	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=Super	669 (*2)	690 (*2)	711 (*2)	W
	P=600W	615 (*2)	636 (*2)	657 (*2)	
	P=400W	403 (*2)	424 (*2)	445 (*2)	
	P=250W	244 (*2)	265 (*2)	286 (*2)	
Mains Current I_{mains}	$V_{\text{mains}} = 240\text{V}$	2.8 (*2)	2.9 (*2)	3.0 (*2)	A
	$V_{\text{mains}} = 230\text{V}$	2.9 (*2)	3.0 (*2)	3.2 (*2)	
	$V_{\text{mains}} = 220\text{V}$	3.0 (*2)	3.2 (*2)	3.3 (*2)	
	$V_{\text{mains}} = 195\text{V}$	3.4 (*2)	3.6 (*2)	3.7 (*2)	
Power Factor	P=Super	0.97	0.98	--	--
THD	P=Super	--	--	10%	--
Inrush Current	$V_{\text{mains}} = 240\text{V}$	--	--	30	A
Pulse Duration	--	--	--	0.8	ms

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2.1.2 Output Characteristics

Parameter	Conditions	Min	Type	Max	Units
Lamp Frequency f_{lamp}	P=Super	37	48	62	KHz
Efficiency(%)	$V_{mains} = 240V$ P=Super	94	95	--	--
Lamp Power P_{lamp} 	P=Super	639 (*2)	660 (*2)	681(*2)	W
	P=600W	579 (*2)	600 (*2)	621(*2)	
	P=400W	379 (*2)	400 (*2)	421(*2)	
	P=250W	229 (*2)	250 (*2)	271(*2)	
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	SUNMASTER HPS600W SL.600W.U46.VRD.HO
		OSRAM HQI-BT 400W/N/SI
	250W	AGROSUN HPS600W SUPER 5002070
		OSRAM HQI-T 250W/N/SI

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2.3 Protection

2.3.1 Open 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.

2.3.2 Short 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.

2.3.3 Over Temperature Protection

When $T_a > 40^\circ\text{C}$, the ballast will shut off for high temperature protection. When the temperature drops to normal and the power is re-applied to the product, it can work normally.

2.3.4 Lamp 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.

2.3.5 Over-voltage/ Low-voltage Detect Protection

Protection happens when input voltage is below 175V or up to 275V (Output power will drop to 80% when input voltage is 175-195V). When input voltage is back to normal, the ballast can work normally.

Note: Voltage accuracy is 5%.

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3. Environment

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

4. Safety

4.1 Surface Temperature Rise

When output power is 600W, ambient temperature is 25°C and input voltage is 240Vac, the surface temperature rise will be 30°C.

4.2 Leakage Current

$1mA_{max} V_{mains}=240V/50Hz.$

4.3 Insulation Resistance

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

4.4 Dielectric Withstand Voltage (HI-POT)

L,N-PE: 1500Vac 5.5mA_{max}/60s.

4.5 Grounded Resistance

$<0.5 \Omega, 25A, 60s.$

4.6 Regulatory Standards

EN 61347-1:2008

EN 61347-2-12 : 2005

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5. EMC

5.1 Surge Immunity

IEC 61000-4-5:

L-N: $\pm 1\text{KV}$;

L/N-PE: $\pm 2\text{KV}$.

5.2 Electrical Fast Transient

IEC 61000-4-4:

L-N-PE : $\pm 1\text{KV}$.

5.3 Voltage Dips and Interruptions Immunity

IEC 61000-4-11:

Drop: 30% ;cycles: 10;

Drop: 100% ;cycles: 0.5.

5.4 Electrostatic Discharge Immunity

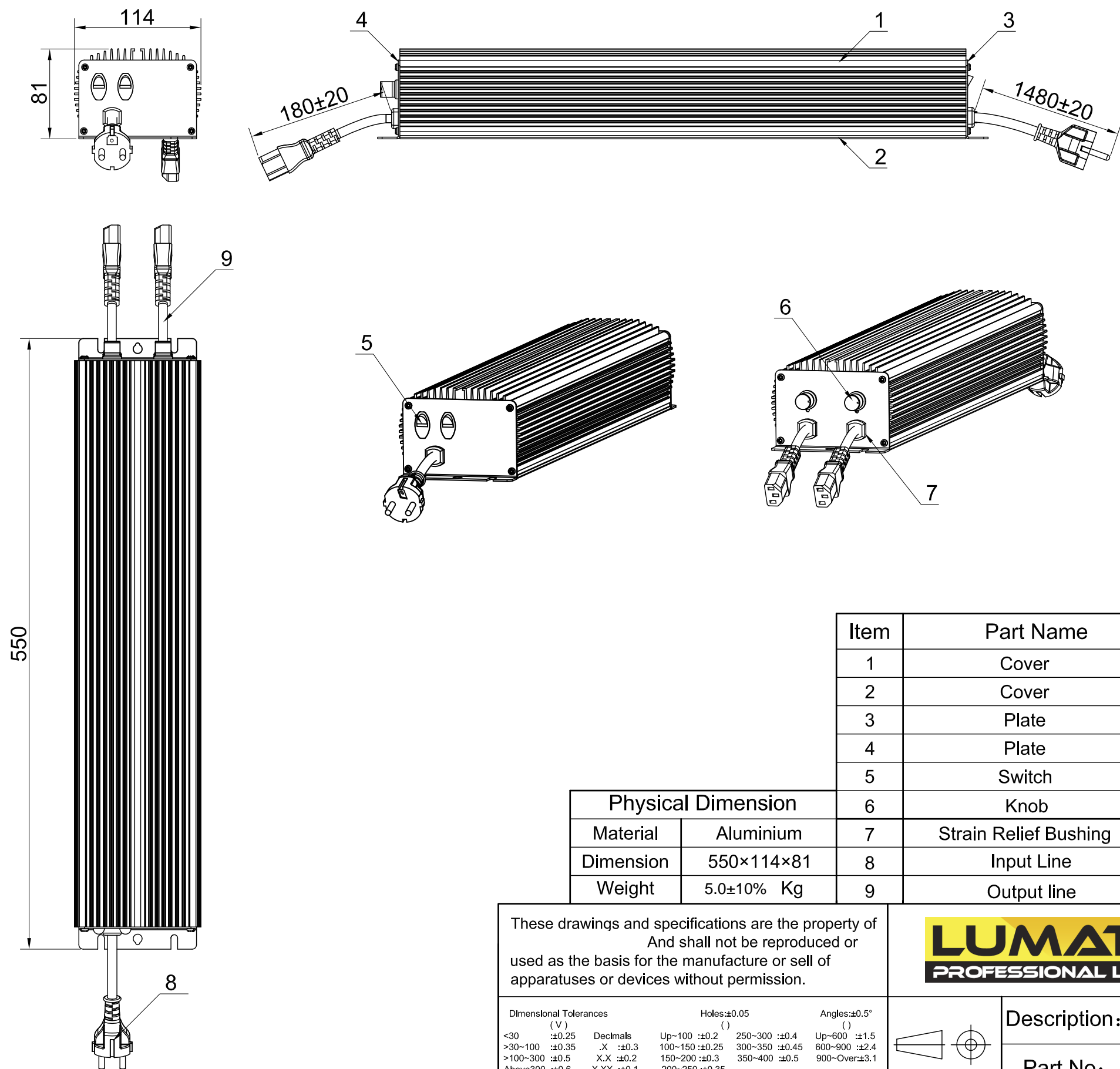
IEC 61000-4-2:

Contact discharge: $\pm 4\text{KV}$;

Air discharge: $\pm 8\text{KV}$.

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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	Switch	2	Black
6	Knob	2	Silver White
7	Strain Relief Bushing	3	Black
8	Input Line	1	Black
9	Output line	2	Black

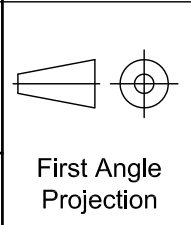
Physical Dimension	
Material	Aluminium
Dimension	550×114×81
Weight	5.0±10% Kg

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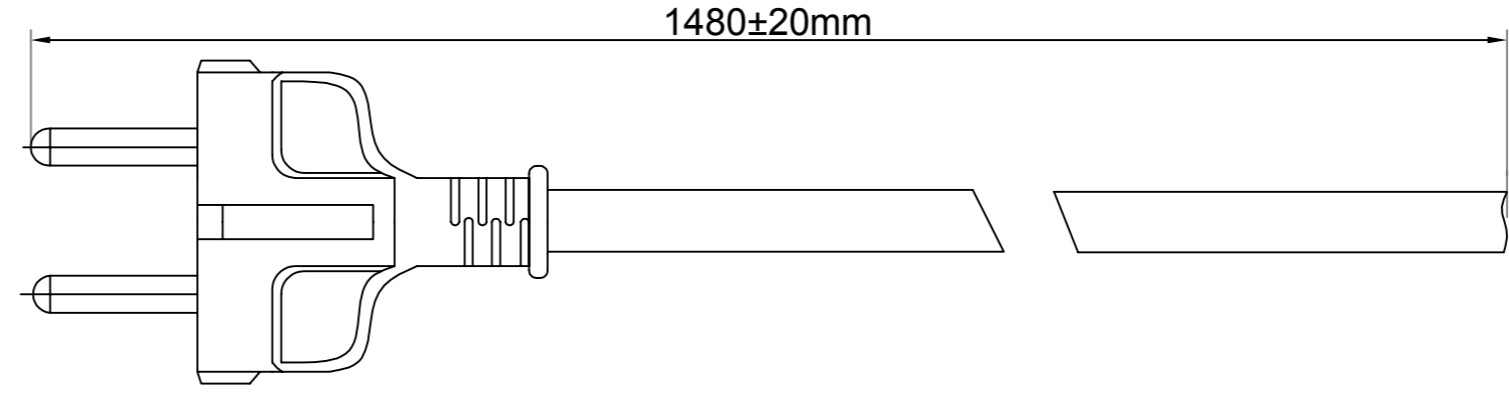
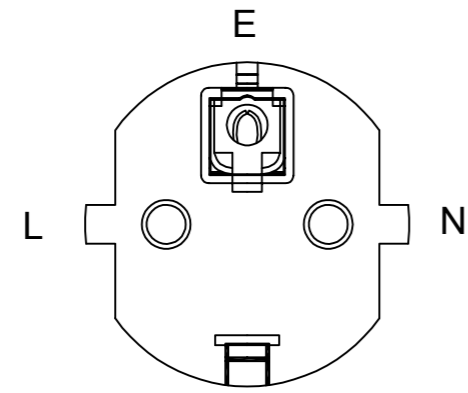
Dimensional Tolerances (mm)		Holes: ±0.05 (mm)		Angles: ±0.5° (°)	
<30	±0.25	Up~100	±0.2	250~300	±0.4
>30~100	±0.35	100~150	±0.25	300~350	±0.45
>100~300	±0.5	150~200	±0.3	350~400	±0.5
Above300	±0.6	200~250	±0.35	900~Over	±3.1



Description:		REV
Part No:	—	P00
Used On:	600W Twin Ballast	SIZE
		A3

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

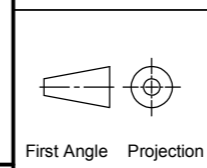


Technical requirements:
 1.Specifications:VDE H05VV-F 3×1.5mm² 70°C

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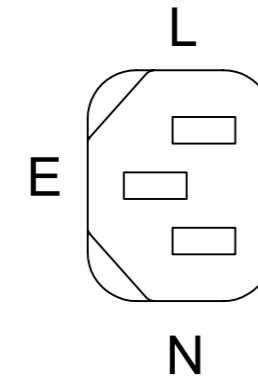
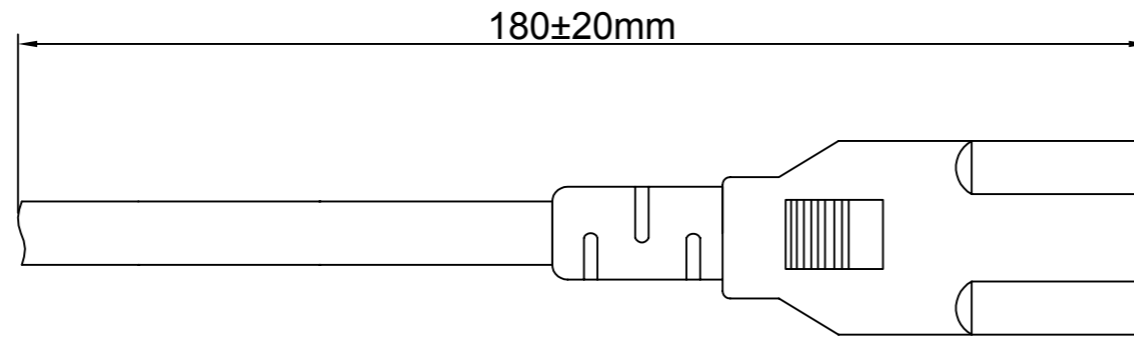
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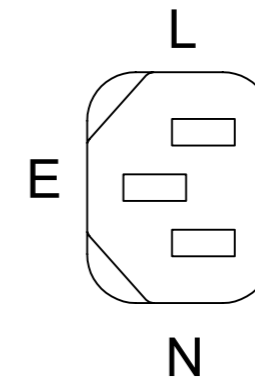
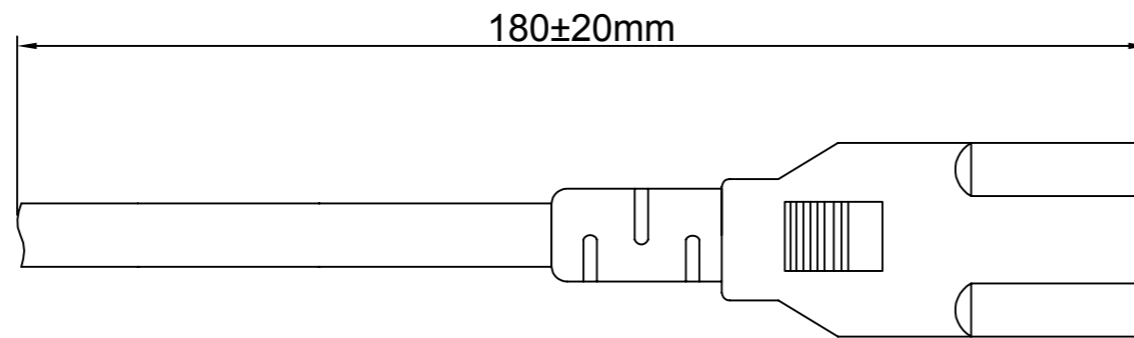
Description:	Input	REV
Part No:	--	P00
Used On	600W Twin Ballast	SIZE
		A3

Scale	---	Unit	mm	Sheet 1 Of 1	Issue Date:	Drawn:	Design:
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8 Output



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

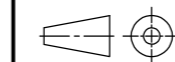


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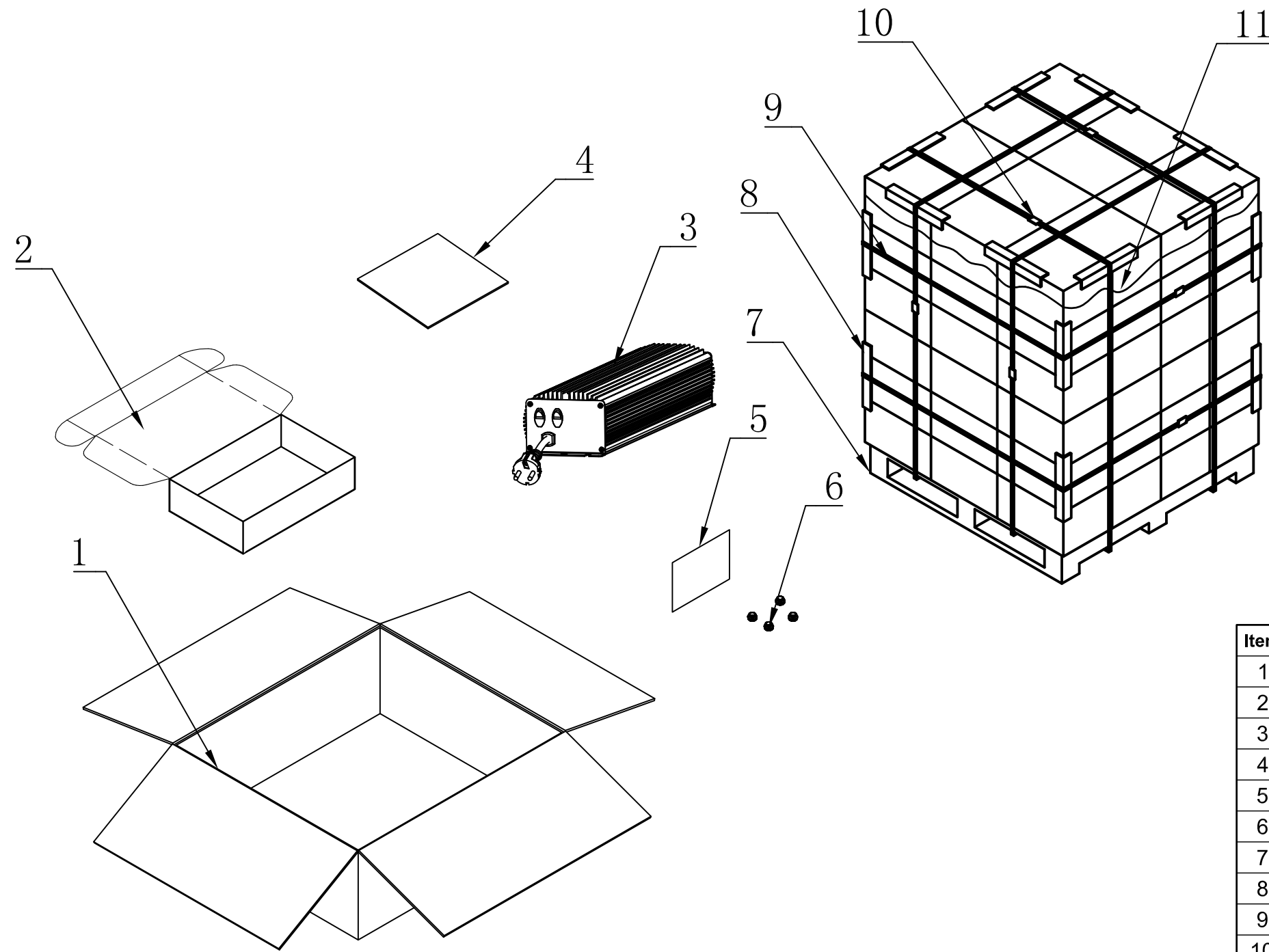


First Angle Projection

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

Scale	---	Unit	mm	Sheet 1 Of 1	Issue Date:	Drawn:	Design:
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9 Packing



Item	Part Name	Outside Dim(mm)	Q'ty
1	Carton	606×394×203	1/4
2	Inner Box	588×183×85	1
3	Digital Ballast	550×114×81	1
4	EPE	600×400×0.5	1
5	Instruction	\	1
6	Rubber Feet	\	4
7	Pallet	\	1/n
8	Angle Paper	\	\
9	Plastic Strip	\	\
10	Staple Wire	\	1
11	PE Film	t=0.02	1

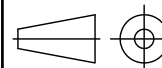
Notes:

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

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First Angle
Projection

Description:		REV P00
Part No:	—	SIZE A3
Used On:	600W Twin Ballast	

Scale

—

Unit

mm

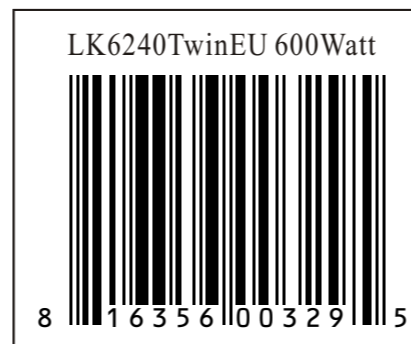
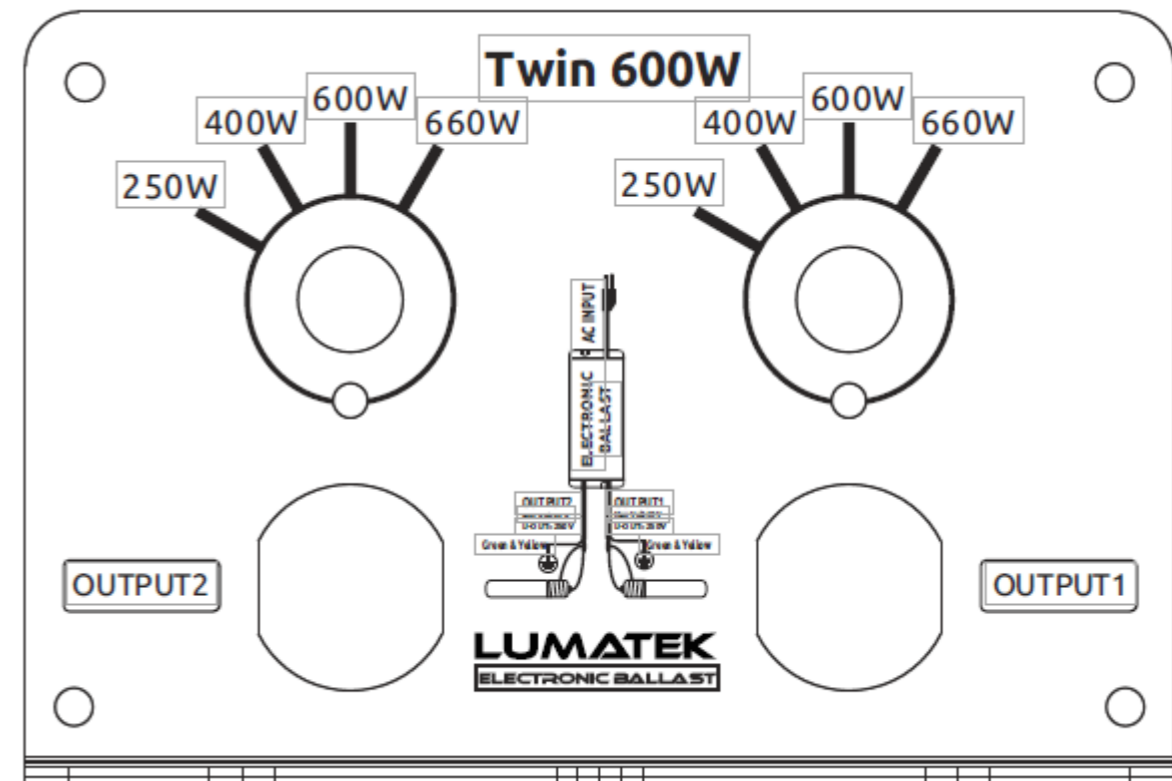
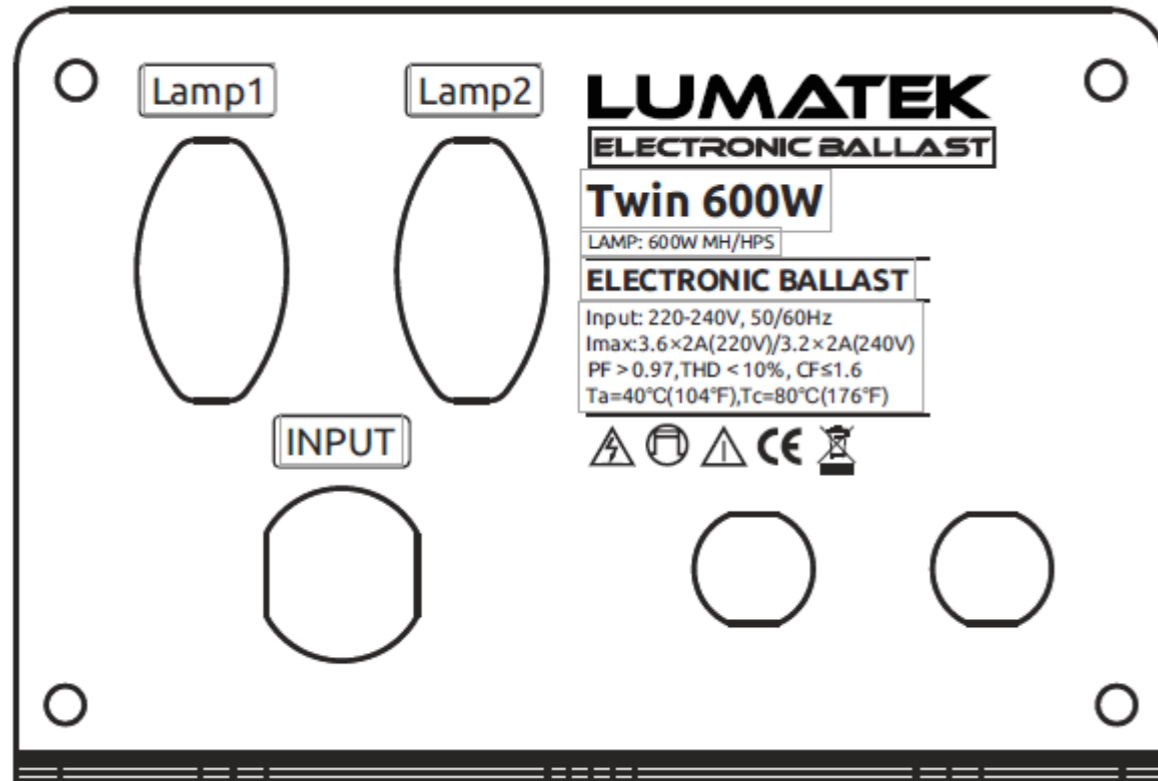
Sheet 1 Of 1

Issue Date:

Drawn:

Design:

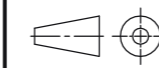
10 Mark



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First Angle Projection

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

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