

SPECIFICATION FOR APPROVAL

Customer : _____

Customer P/N : _____

Product Type : **Digital Ballast**

Product No. : **1000W Digital Ballast**

Issue Date : **2015.04.15**

Prepared By			
Checked By	R&D	DQE	QC
Approved By			

Web: www.lumatek-lighting.com

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1. Description

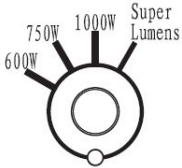
This is an 1000W intelligent electronic ballast. Input voltage is 230V, 50/60Hz. It will start delay 0-6S and knob dimming range can be 600W-750W-1000W- Super Lumens. It can match well with 1000W MH/HPS according to IEC60662.

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2. Function and parameters

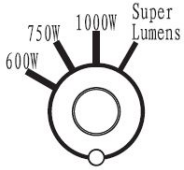
2.1 Knob Control

2.1.1 Input Characteristics

Parameter	Conditions	Min	Type	Max	Units
Mains Voltage	Operational Voltage	205	230	255	V
	Safe Voltage	195	230	265	
Mains Frequency f_{mains}	Operational Frequency	48	50	63	Hz
	Safe Frequency	45	50	66	
Mains Power P_{mains} 	P=Super Lumens	1116	1150	1185	W
	P=1000W	1015	1050	1085	
	P=750W	760	795	830	
	P=600W	601	636	671	
Mains Current I_{mains}	$V_{\text{mains}} = 230\text{V}$	4.9	5.1	5.3	A
	$V_{\text{mains}} = 205\text{V}$	5.5	5.7	5.9	
Power Factor	P=Super Lumens	0.98	0.99	--	--
THD	P=Super Lumens	--	--	10%	--
Inrush Current	$V_{\text{mains}} = 230\text{V}$	--	--	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 Lumens	40	50	60	KHz
Efficiency(%)	P=Super Lumens	94	95	--	--
Lamp Power P_{lamp} 	P=Super Lumens	1067	1100	1135	W
	P=1000W	955	1000	1035	
	P=750W	705	750	785	
	P=600W	555	600	635	
Lamp Voltage	1000W HPS (European standard)	90	110	130	V
Ignition Voltage	$C_{load} < 100pF$	3000	4000	5000	V
Ignition Interval	--	1-5-5-5-5			Min

Note: 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 30min .

2.2 Recommended Matching Lamps

Lamp	LUMATEK DIGITAL 1000W HPS
	PHILIPS HPI-T MH1000W
	OSRAM VIALOX NAV(SON-T) HPS1000W

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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 $T_a > 60^\circ\text{C}$, 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 90% 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	
		Direction: X,Y,Z	
3.4 Waterproof and dustproof		IP20	

4. Safety

4.1 Surface Temperature Rise

When output power is 1000W, ambient temperature is 25°C and input voltage is 230Vac, the surface temperature rise will be 30°C.

4.2 Leakage Current

$1mA_{max} V_{mains}=230V/50Hz.$

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

EN 61347-2-12

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5. EMC

5.1 EMI

EN 55015:

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

5.2 EMS

5.2.1 Surge Immunity

IEC 61000-4-5:

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

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

5.2.2 Electrical Fast Transient

IEC 61000-4-4:

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

5.2.3 Voltage Dips and Interruptions Immunity

IEC 61000-4-11:

Drop: 30% ;cycles: 10;

Drop: 100% ;cycles: 0.5.

5.2.4 Electrostatic Discharge Immunity

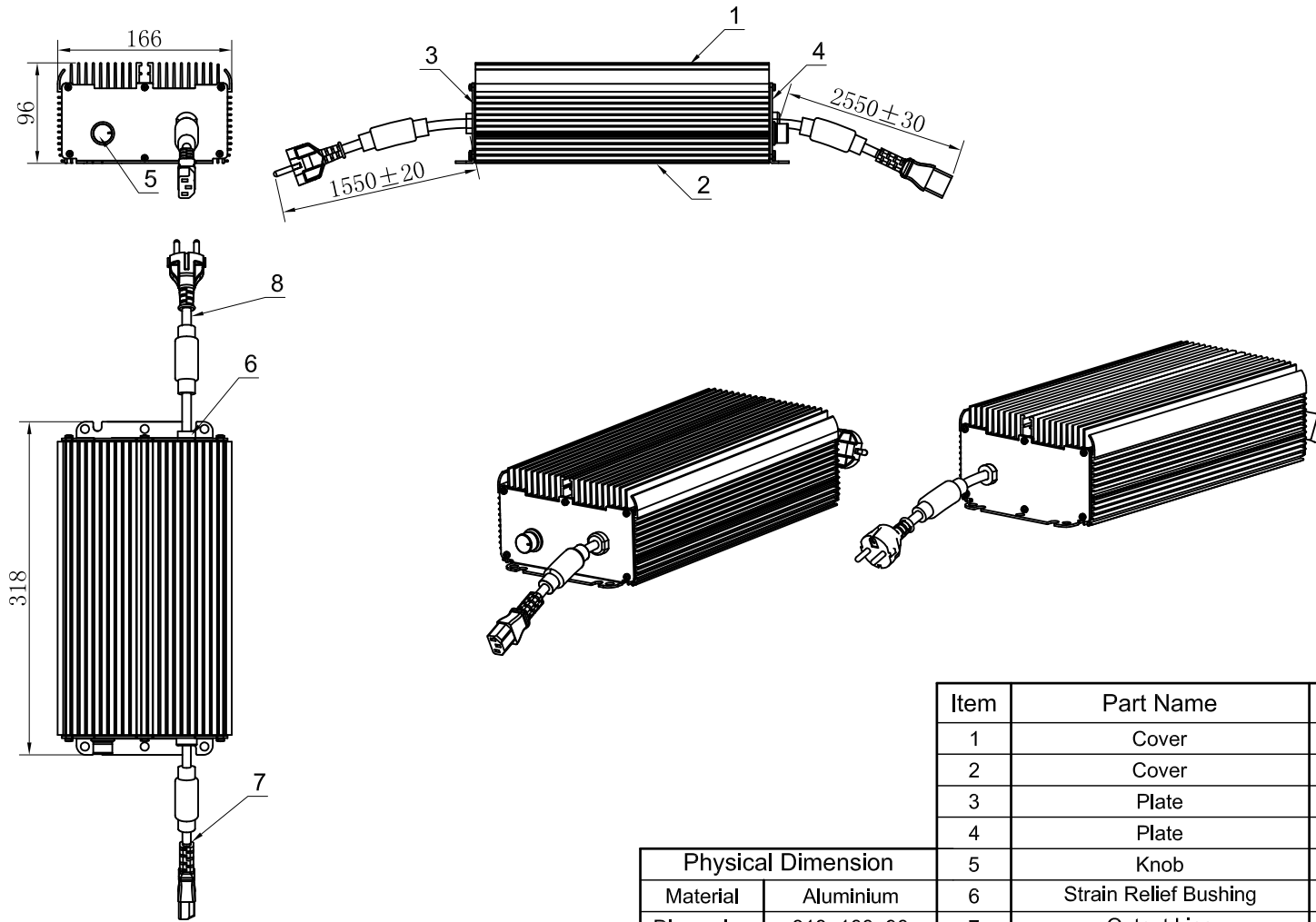
IEC 61000-4-2:

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

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	Knob	1	White
6	Strain Relief Bushing	2	Black
7	Output Line	1	Black
8	Input Line	1	Black

Physical Dimension	
Material	Aluminium
Dimension	318×166×96
Weight	4.5±10%Kg

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Dimensional Tolerances (V)	Holes±0.05 (I)	Angles±0.5° (I)
<30 ±0.25	Up-100 ±0.2	Up-600 ±1.5
>30-100 ±0.35	100-150 ±0.25	600-900 ±2.4
>100-300 ±0.5	150-200 ±0.3	350-400 ±0.5
Above300 ±0.6	200-250 ±0.35	900-Over±3.1

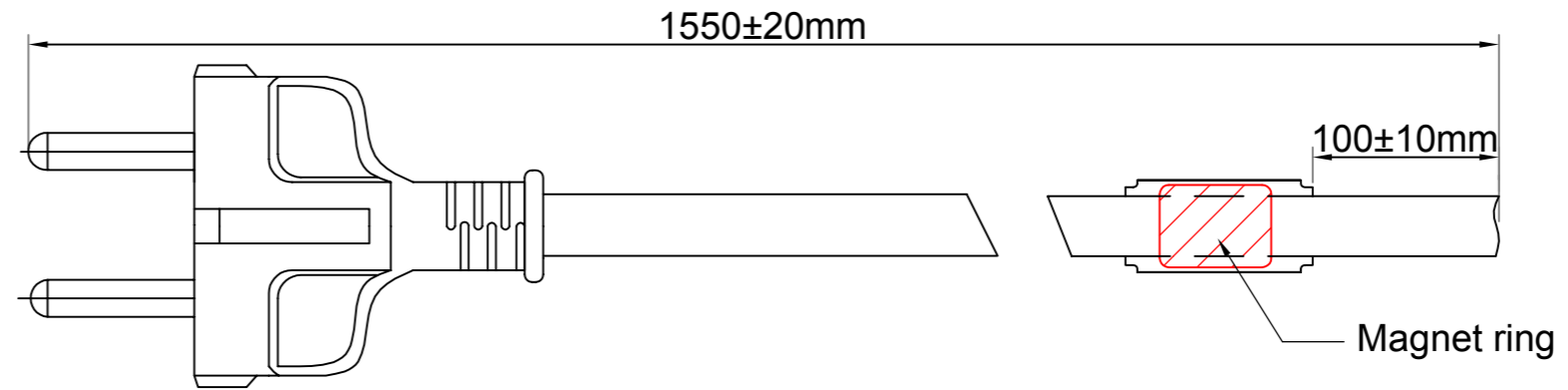
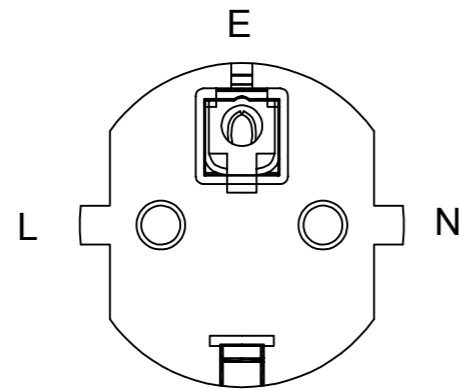


First Angle Projection

Description:	REV
Part No:	P00
Used On:	SIZE A3

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



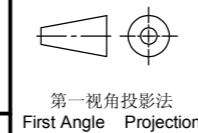
Technical requirements:

1. Emifil: K5B RH 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°C

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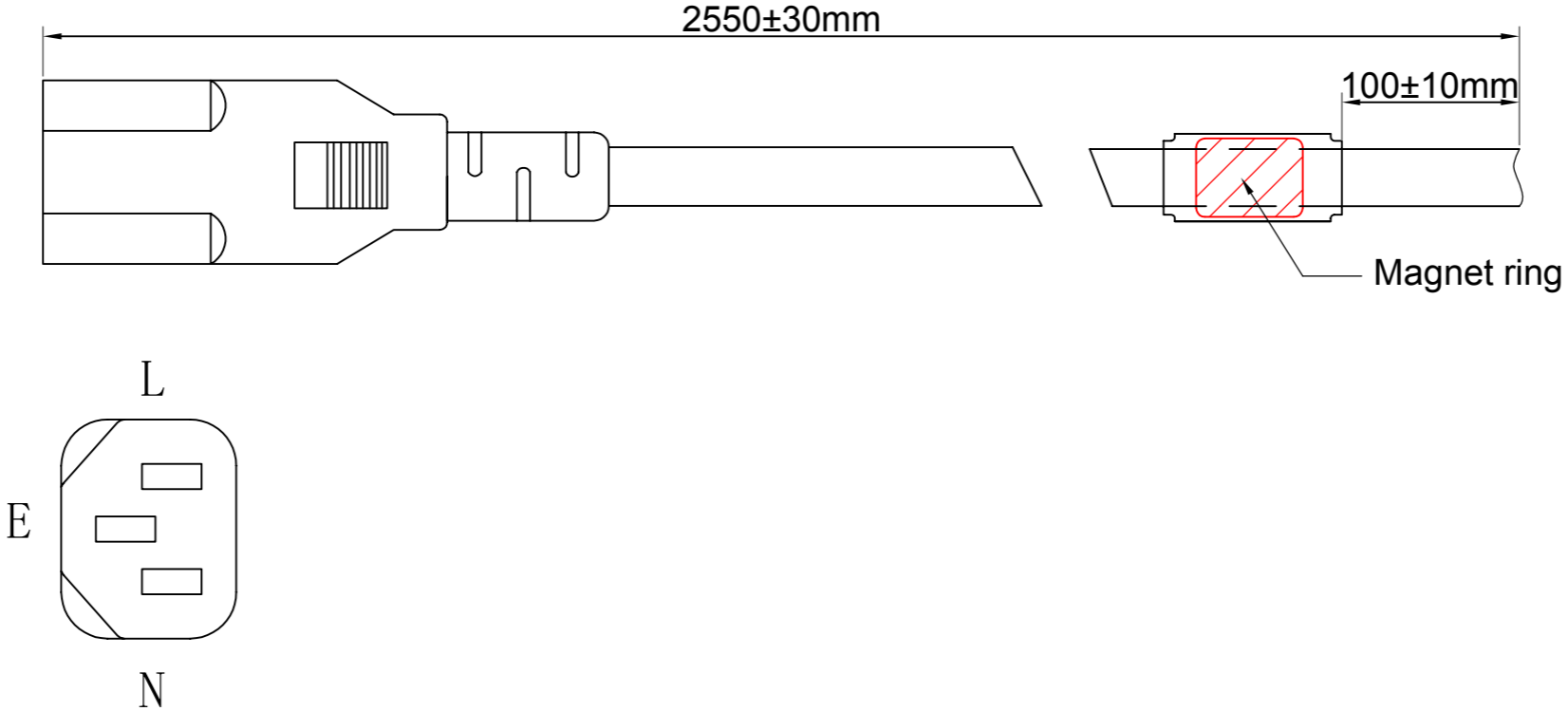
Description:	Input	REV
Part No:	--	P00
Used On	1000W Digital Ballast	SIZE
		A3

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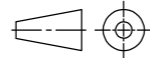
Drawn:

Design:

8 Output

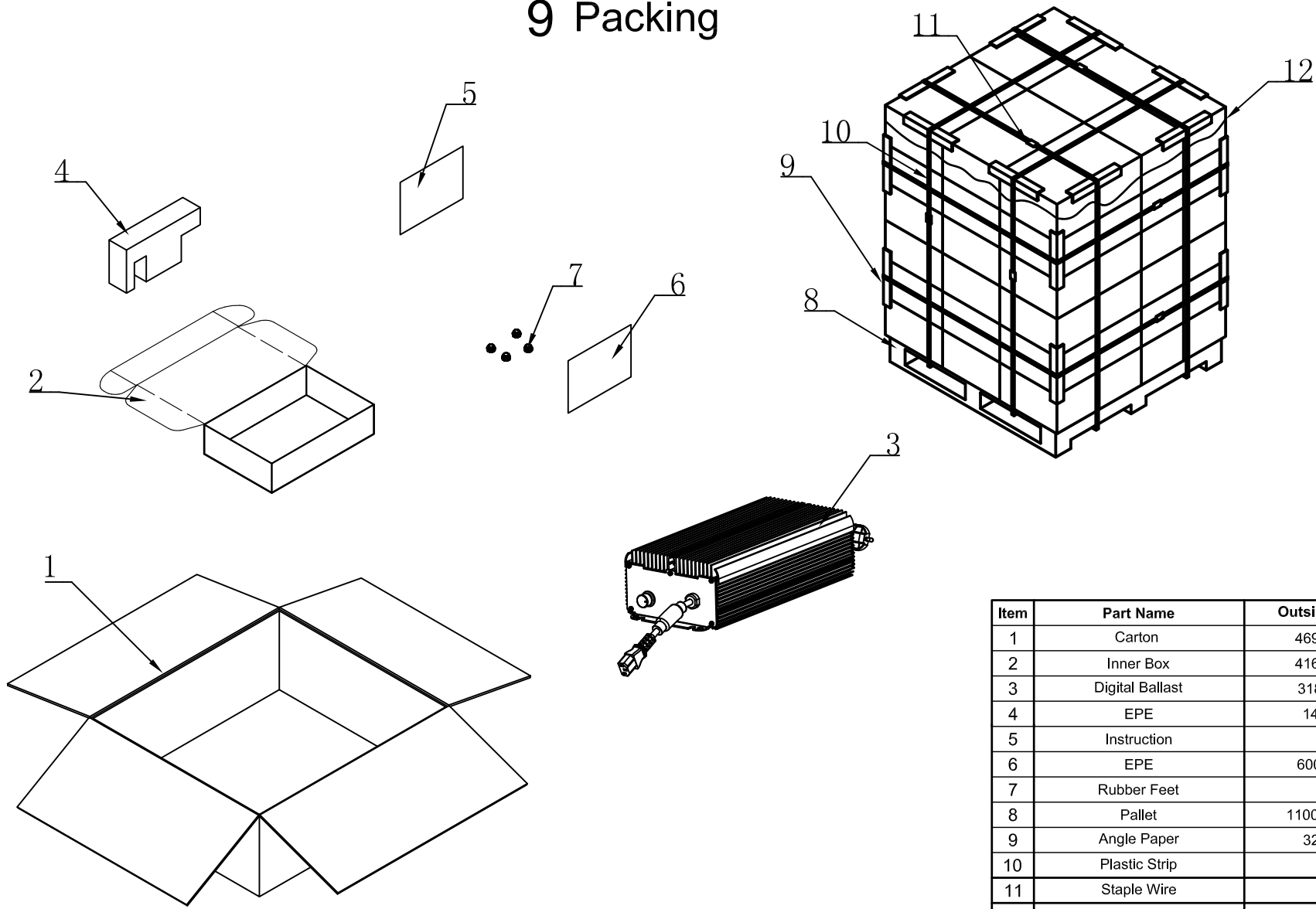


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				 <p>First Angle Projection</p>	<p>Description:</p>	<p>Output</p>	<p>REV</p>
<p>Part No:</p>		<p>--</p>	<p>P00</p>				
<p>Used On</p>		<p>1000W Digital Ballast</p>	<p>SIZE</p>				
			<p>A3</p>				

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	469x439x148	1/2
2	Inner Box	416x221x113	1
3	Digital Ballast	318x166x96	1
4	EPE	148x75x35	3
5	Instruction	A5	1
6	EPE	600x400x0.5	1
7	Rubber Feet	\	4
8	Pallet	1100x1100x150	1/n
9	Angle Paper	320x45x45	\
10	Plastic Strip	\	\
11	Staple Wire	\	1
12	PE Film	t=0.02	1

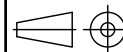
Notes:

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

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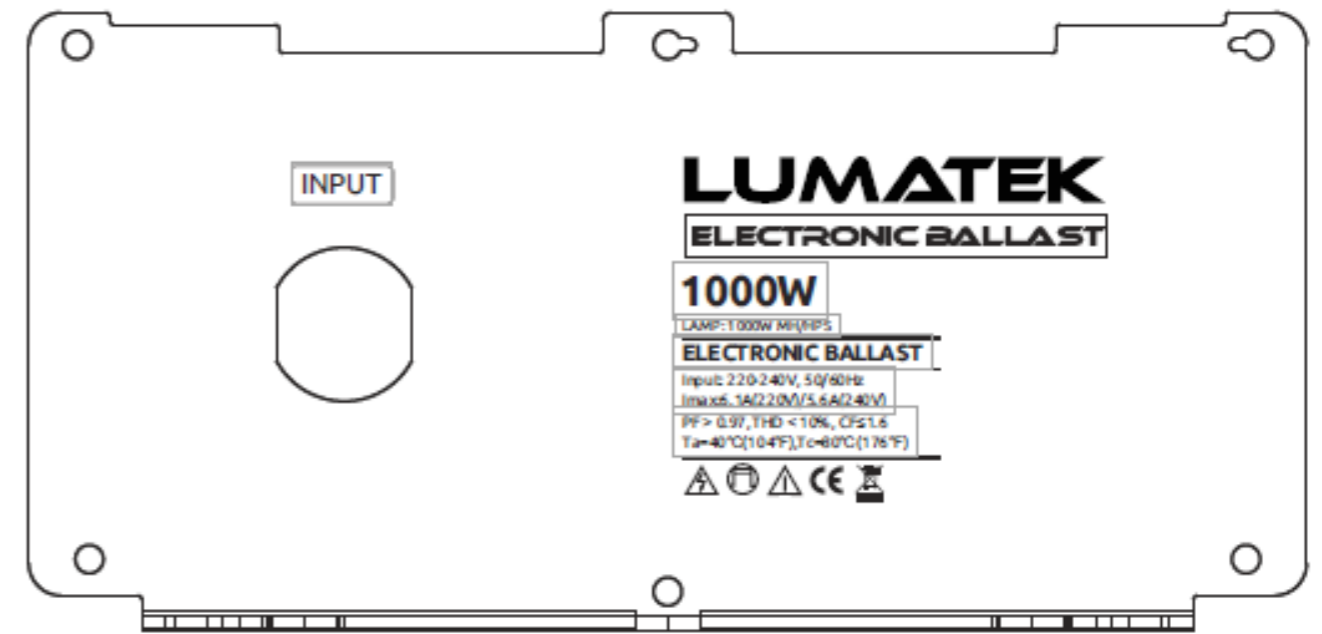
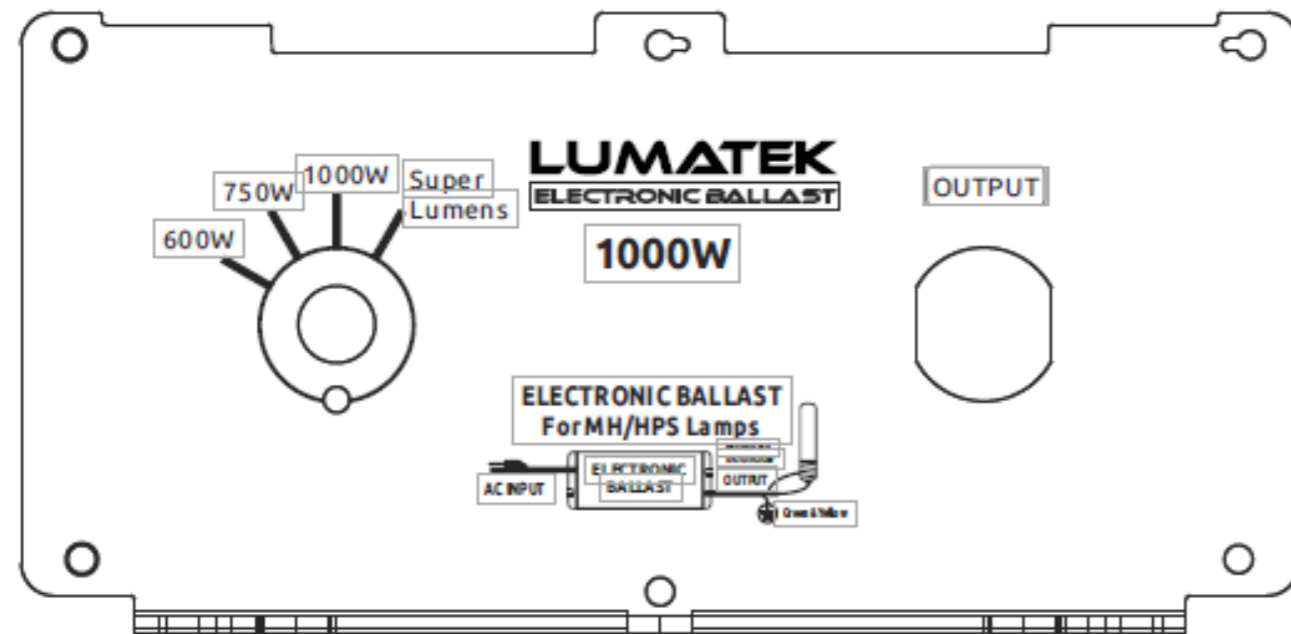


First Angle Projection

Description:		REV P00
Part No:	-	SIZE A3
Used On:	1000W Digital Ballast	

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



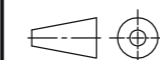
LK1TH240EU 1000Watt



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First Angle Projection

Description:	Mark	REV P00
	Part No: --	
Used On	1000W Digital Ballast	SIZE A3

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