

SPECIFICATION FOR APPROVAL

Customer : _____

Customer P/N : _____

Product Type : **Digital Ballast**

Product No. : **315W Digital Ballast**

Issue Date : **2017.11.22**

Prepared By			
Checked By	R&D	DQE	QC
Approved By			

Web: www.lumatek-lighting.com

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1. Description

This is an 315W intelligent electronic ballast. Input voltage is 220-240,50/60Hz .And knob dimming range can be :50%-60%-70%- 80%-90%-100%. It will delay 0-6 ignition randomly.It can match well with 315W CMH lamps.

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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=100%	315	334	347	W
	P=90%	284	301	317	
	P=80%	250	267	284	
	P=70%	217	234	250	
	P=60%	184	200	217	
	P=50%	150	167	184	
Mains Current I_{mains}	$V_{\text{mains}} = 240\text{V}$	1.3	1.4	1.5	A
	$V_{\text{mains}} = 230\text{V}$	1.3	1.5	1.6	
	$V_{\text{mains}} = 220\text{V}$	1.4	1.5	1.6	
	$V_{\text{mains}} = 195\text{V}$	1.6	1.7	1.8	
Power Factor	P=100%	0.97	0.98	--	--
THD	P=100%	--	--	15%	--
Inrush Current	$V_{\text{mains}} = 230\text{V}$	--	--	30	A
Pulse Duration	$T_a = 25^\circ\text{C}$, cold start	--	--	0.8	ms

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2.1.2 Output Characteristics

Parameter	Conditions	Min	Type	Max	Units
Lamp Frequency f_{lamp}	P=100%	110	120	130	Hz
Efficiency(%)	P=100%	91	92	--	--
Lamp Power	P=100%	296	315	328	W
	P=90%	267	284	300	
	P=80%	235	252	269	
	P=70%	204	221	237	
	P=60%	172	189	206	
	P=50%	141	158	174	
Lamp Voltage	315 CMH Lamp	90	100	115	V
Ignition Voltage	$C_{load} < 100pF$	3000	4000	5000	V
Ignition Interval	--	0.5-0.5-0.5-5-5-5-5-10			Min

2.2 Recommended Matching Lamps

Lamp	LUMATEK CMH 315W 3K
	LUMATEK CMH 315W 4K
	USHIO CMH-315/930/ARGO
	USHIO CMH-315/942/ARGO
	PHILIPS CDM-TM MW 315W/942/U/O C182/O
	PHILIPS CDM-TP 315W/930/U/O

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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 not be 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. When input voltage is back to normal, the ballast can work normally.

Note: Voltage accuracy is 3%.

2.3.6 LED Status

Status	LED
Ballast locked	Flash*1
Connection error	Flash*2
Low input voltage	Flash*3
Over temperature	Flash*4
High input voltage	Flash*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	20%--90%, non-condensing	10%--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	

4. Safety

4.1 Surface Temperature Rise

When output power is 315W, ambient temperature is 25°C and input voltage is 220Vac, the surface temperature rise will be less than 40°C.

4.2 Leakage Current

0.75mA_{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 Ω ,30A,60s.

4.6 Regulatory Standards

EN 61347-1:2008

EN 61347-2-12 : 2005

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5. EMC

5.1 EMI

EN55015

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

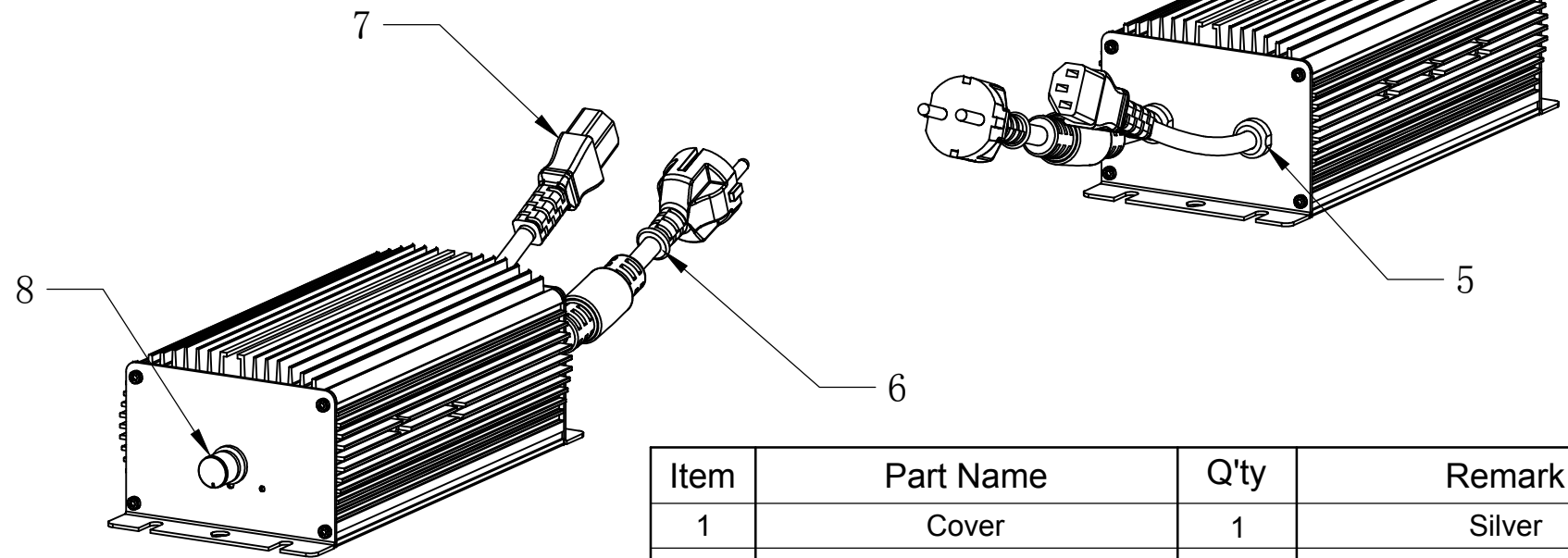
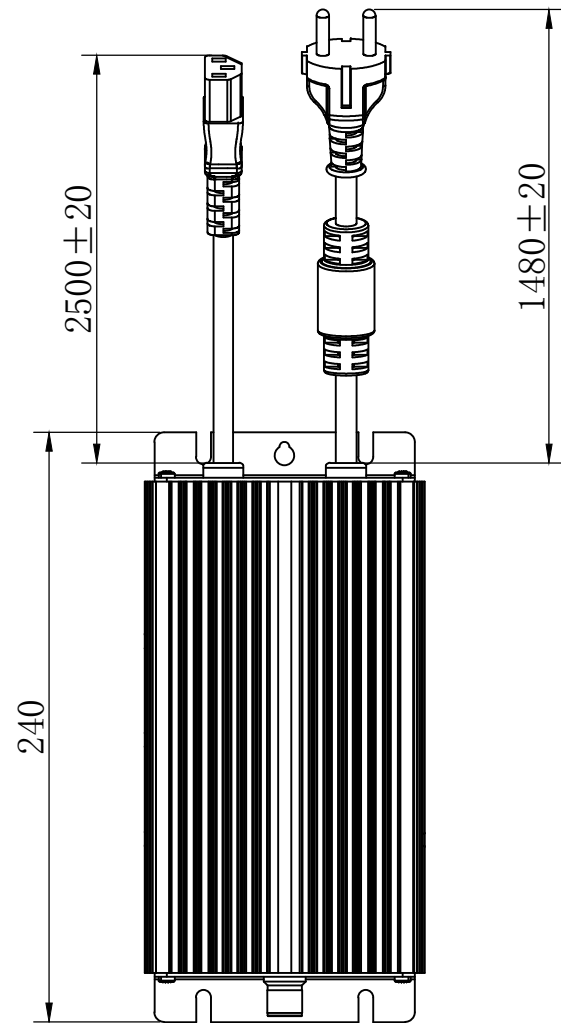
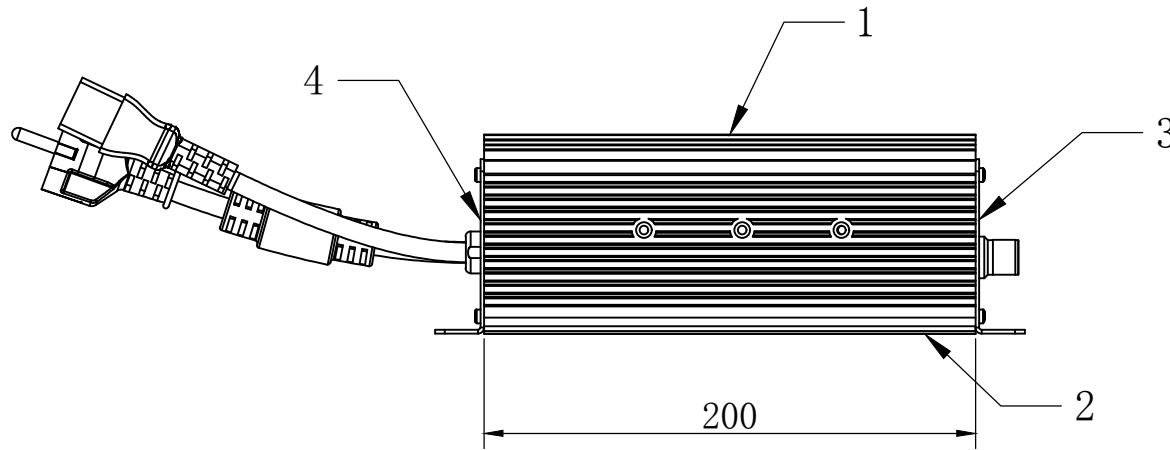
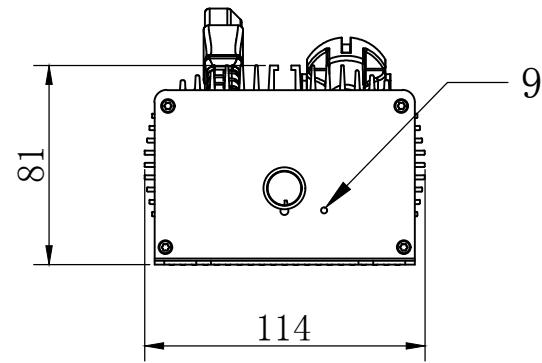
IEC 61000-4-2:

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	Silver
2	Cover	1	Silver
3	Plate	1	Purple
4	Plate	1	Purple
5	Strain Relief Bushing	2	Black
6	Input Line	1	Black
7	Output Line	1	Black
8	Knob	1	Silver White
9	LED	1	---

Physical Dimension	
Material	Aluminium
Dimension	240×114×81
Weight	2.64±10% Kg

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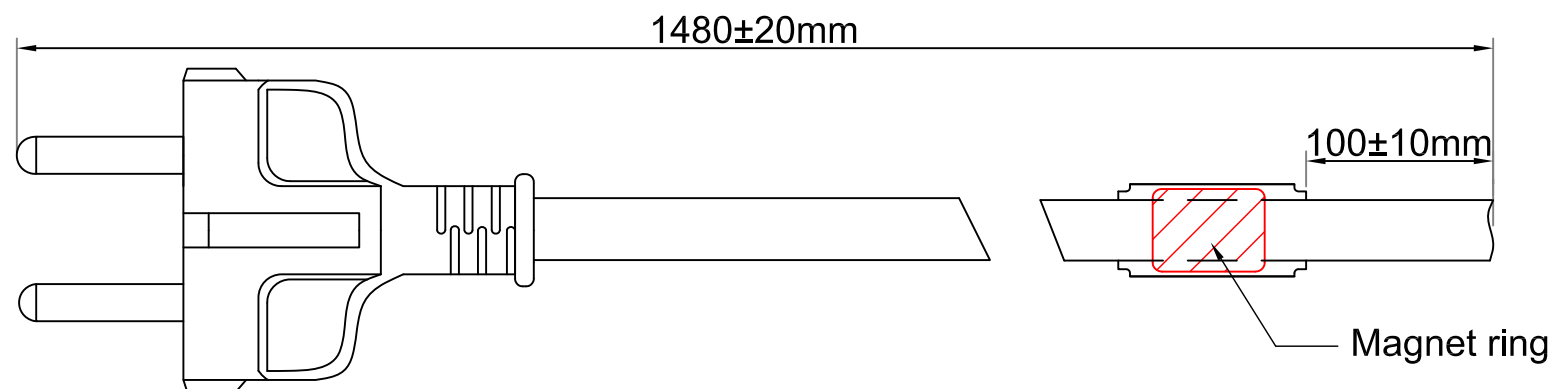
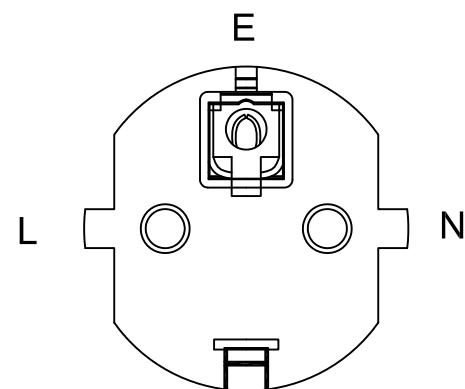
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Dimensional Tolerances (V)		Holes:±0.05 (I)		Angles:±0.5° (°)	
<30	:±0.25	Up~100	:±0.2	250~300	:±0.4
>30~100	:±0.35	100~150	:±0.25	300~350	:±0.45
>100~300	:±0.5	X.X	:±0.2	150~200	:±0.3
Above300	:±0.6	X.XX	:±0.1	200~250	:±0.35
				350~400	:±0.5
				600~900	:±2.4
				900~Over	:±3.1

<p>First Angle Projection</p>	Description:		REV P00 SIZE A3
	Part No:		
	Used On:	315W Digital Ballast	

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



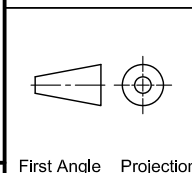
Technical requirements:

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°C

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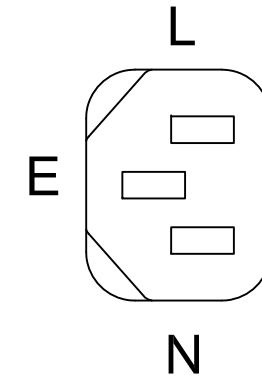
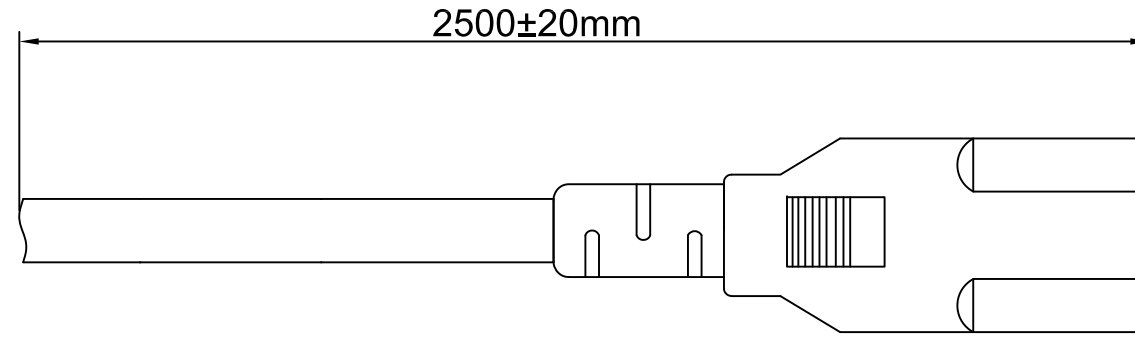
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Description:	Input	REV
Part No:	--	P00
Used On	315W Digital Ballast	SIZE
		A3

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

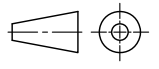


Technical requirements:
1.Specifications : VDE H05VV-F 3×1.5mm² 70 °C

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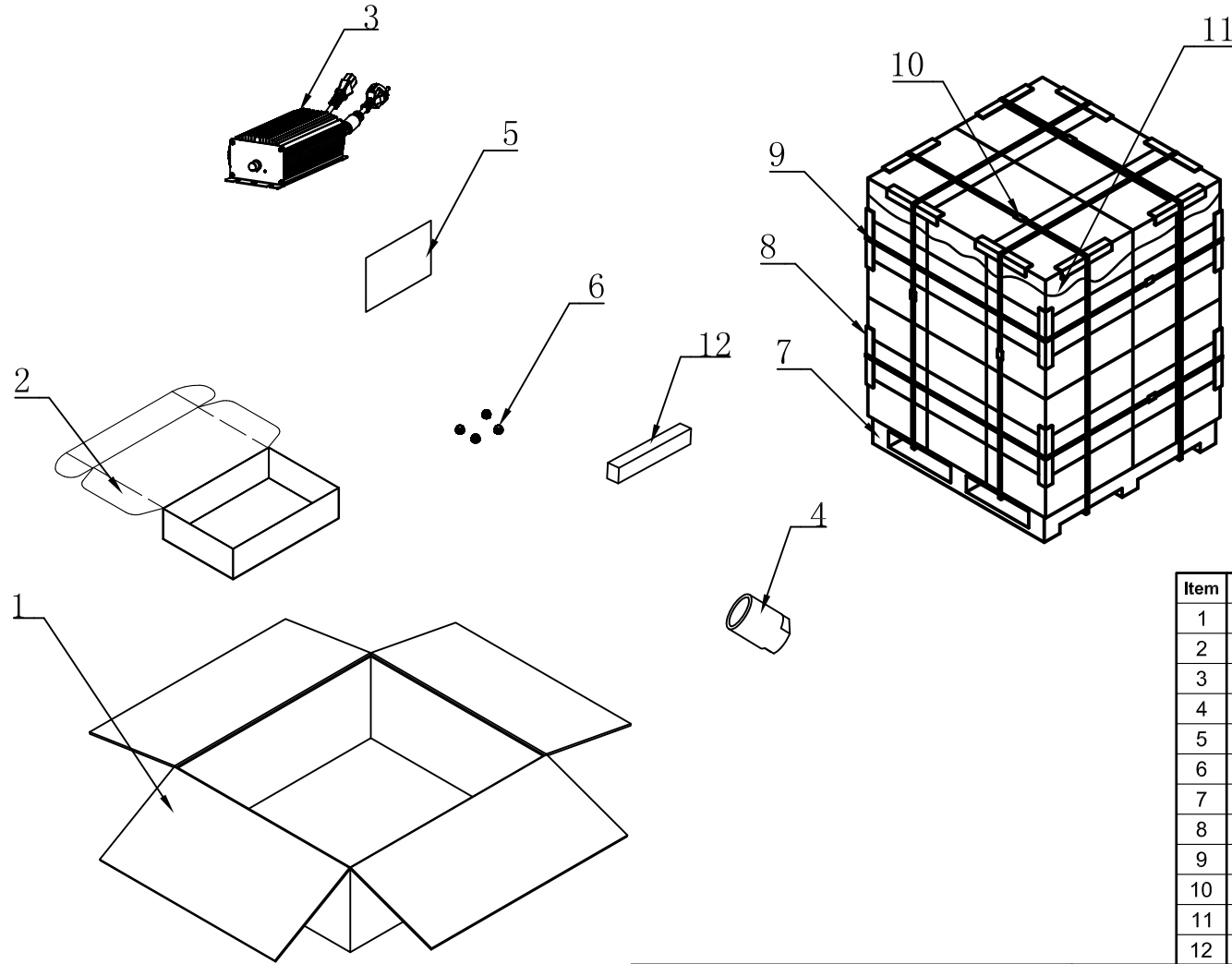


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 First Angle Projection	Description:	Output	REV
	Part No:	--	P00
	Used On	315W Digital Ballast	SIZE
			A3

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	558×289×206	1/4
2	Inner Box	268×267×84	1
3	Digital Ballast	240×114×81	1
4	Lamp holder	\	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
12	Light bulb	\	1

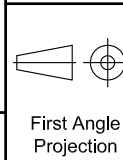
Notes:

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

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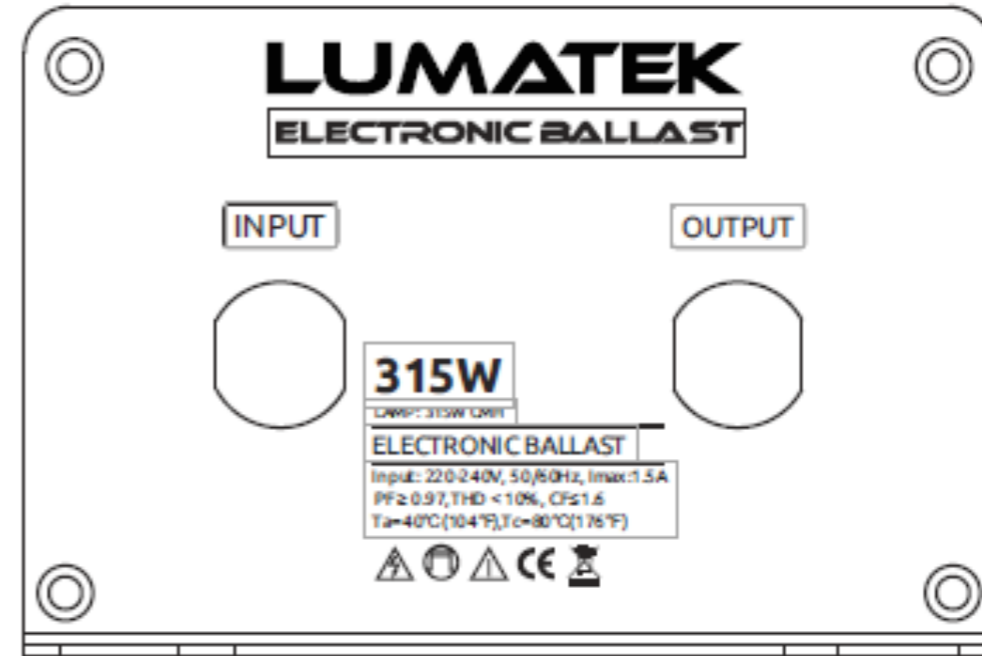
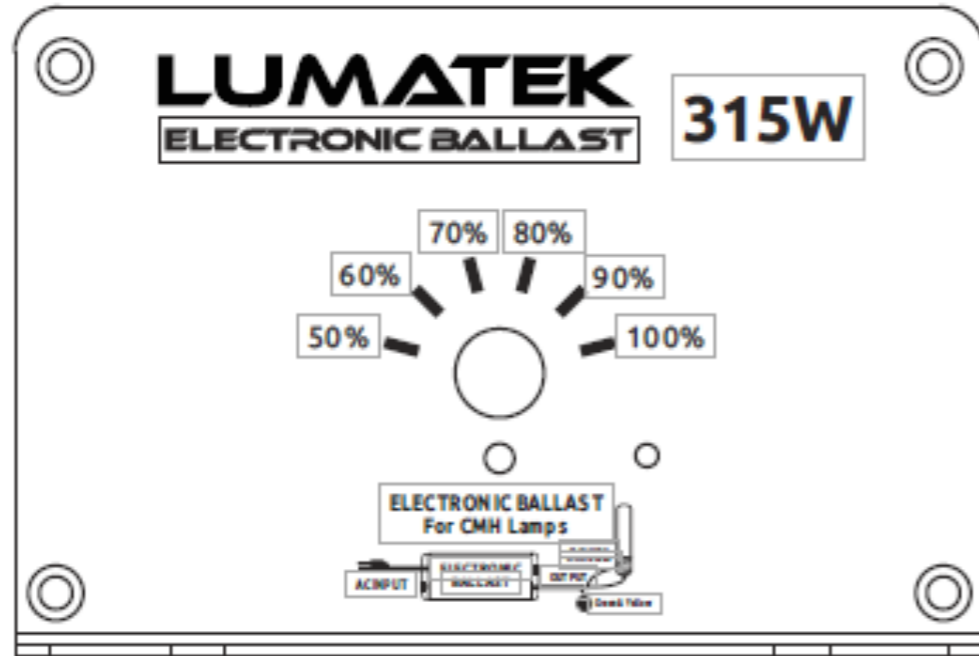
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Description:		REV P00
Part No:	-	SIZE A3
Used On:	315W Digital Ballast	

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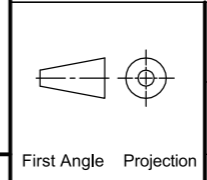
10 Mark



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Description:	Mark	REV P00
Part No:	--	
Used On	315W Digital Ballast	SIZE A3

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