SPECIFICATION FOR APPROVAL

Customer :_____

Customer P/N :_____

Product Type : Digital Ballast

Product No. : 250W Digital Ballast

Issue Date : 2016.01.28

Prepared By			
Checked By	R&D	DQE	QC
Approved By			

Web：www.lumatek-lighting.com

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Revision History

Product		250W Digital Ballast		
Rev.	**Description**	**Editor**	**Check**	**Date**
R1.0	Nominally issued			2016.01.28
R1.1	Input line add the ring to optimization EMC			2016.04.26
R1.2	Perfect output frequency range			2016.08.23
V1.0	Official version			2016.11.01

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Contents

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1. Description

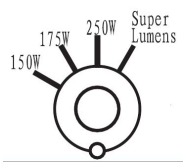
This is an 250W intelligent electronic ballast. Input voltage is 240V, 50Hz.It will delay 0-6S ignition random. And knob dimming range can be 150W-175W-250W-super lumens .It can match well with 150W/250W HPS/ MH lamps according to IEC60662 standard.

Date	Prepared	Checked	Item No	250W Digital Ballast

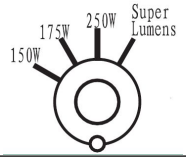
2. Function and parameters

2.1Knob Control

2.1.1Input Characteristics

Parameter	Conditions	Min	Type	Max	Units
MainsVoltage	Operational Voltage	215	240	265	V
	Safe Voltage	205	240	275	
Mains Frequency f_{mains}	Operational Frequency	48	50	63	Hz
	Safe Frequency	45	50	66	
Mains Power P_{mains} 	P=super	275	292	303	W
	P=250W	250	265	280	
	P=175W	171	186	200	
	P=150W	144	159	174	
Mains Current I_{mains}	V_{mains} =240V	1.1	1.2	1.3	A
	V_{mains} =215V	1.3	1.4	1.5	
Power Factor	P=super	0.94	0.97	--	--
THD	P=super	--	--	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=super		43	58	85	KHz
Efficiency(%)	V_{mains} =240V	P=super	92	94	--	--
Lamp Power P_{lamp} 	P=super		259	275	286	W
	P=250W		235	250	265	
	P=175W		160	175	190	
	P=150W		135	150	165	
Lamp Voltage	250W HPS/MH		77	100	148	V
Ignition Voltage	C_{load}<100pF		3000	4000	5000	V
Ignition Interval	--		1-5-5-5-5			Min

Note：Dimming accuracy is 5%.

2.2 Recommended Matching Lamps

Lamp	250W	LUMATEK HPS 250W
		LUMATEK HPS 150W
		OSRAM HQI-T 250W/N/SI
	150W	PHILIPS SON-T HPS 250W
		PHILIPS SON-T HPS 150W
		VENTURE M102/E MH150W/U/PS/740 MH150W

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 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.

2.3.4 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. 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 is250W， ambient temperature is 25℃and input voltage is240Vac,the surface temperature rise will be 30℃.

4.2 Leakage Current

1mAmax Vmains=240V/50Hz.

4.3 Insulation Resistance

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

4.4 Dielectric Withstand Voltage (HI-POT)

L,N-PE:1500Vac 5.5mAmax/60s.

4.5 Grounded Resistance

＜0.5Ω,25A,60s.

4.6 Regulatory Standards

EN 61347-1:2008

EN 61347-2-12 : 2005

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.

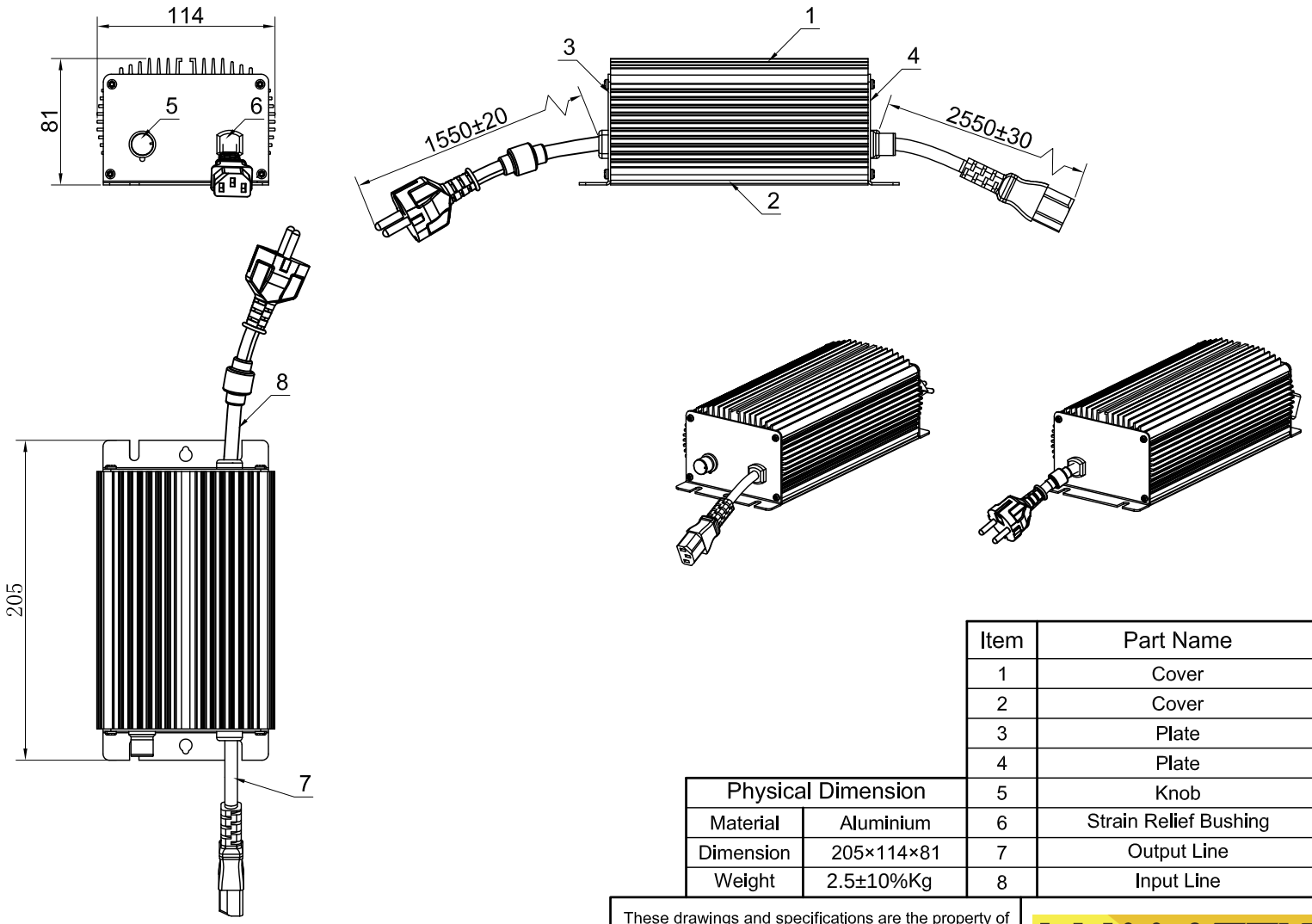
5.2.3 Voltage Dips and Interruptions Immunity

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：±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	205×114×81
Weight	2.5±10%Kg

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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° ( )

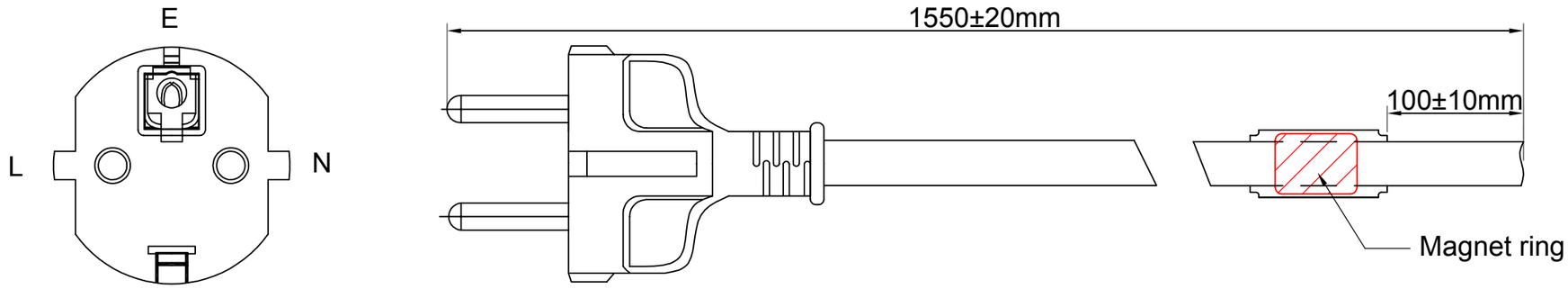
Up~600	±1.5
600~900	±2.4
900~Over	±3.1

First Angle Projection

Description:		REV P00
Part No:	–	
Used On:	250W Digital Ballast	SIZE A3

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

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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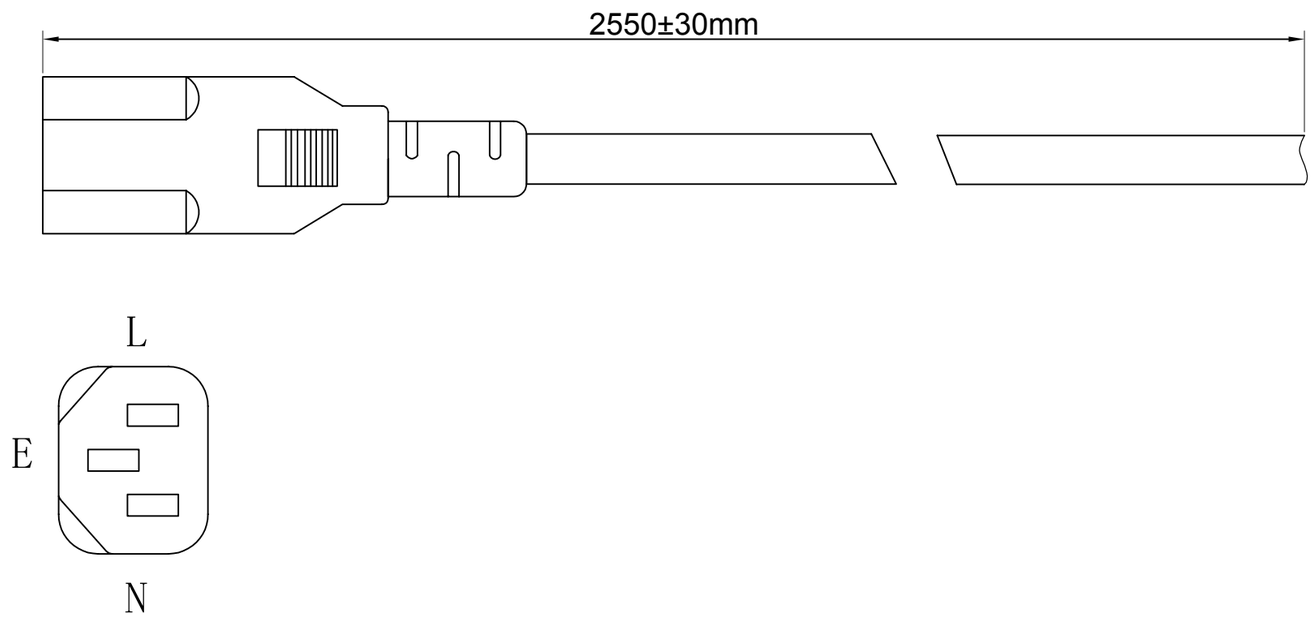
First Angle Projection

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

Description:	Input	REV P00
Part No:	--	SIZE A3
Used On	250W Digital Ballast	

8 Output



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

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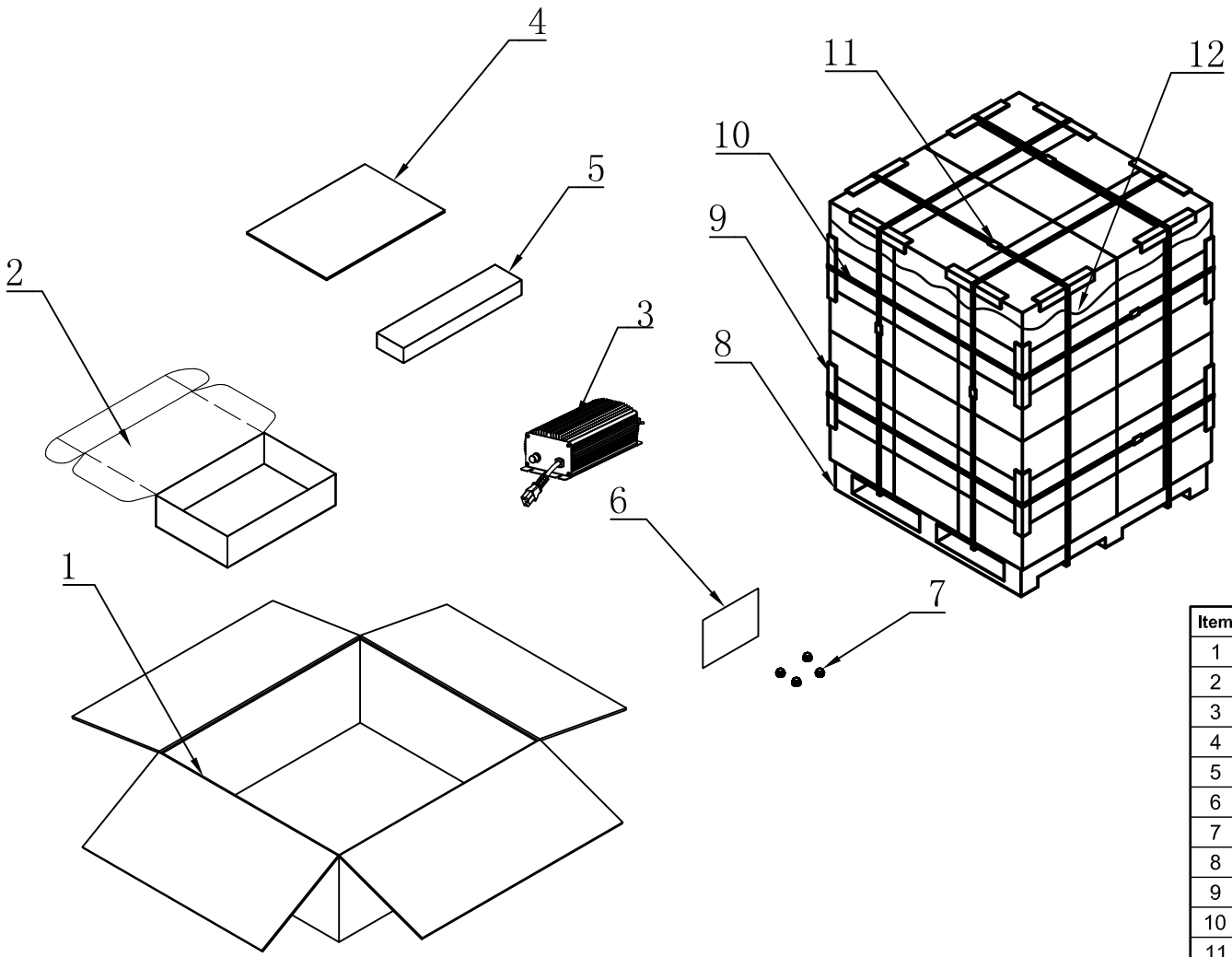
First Angle Projection

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

Description:	Output	REV P00
Part No:	--	SIZE A3
Used On	250W Digital Ballast	

9 Packing



Item	Part Name	Outside Dim(mm)	Q'ty
1	Carton	434×364×208	1/4
2	Inner Box	345×205×85	1
3	Digital Ballast	205×114×81	1
4	EPE	600×400×0.5	1
5	EPE	115×60×40	2
6	Instruction	A5	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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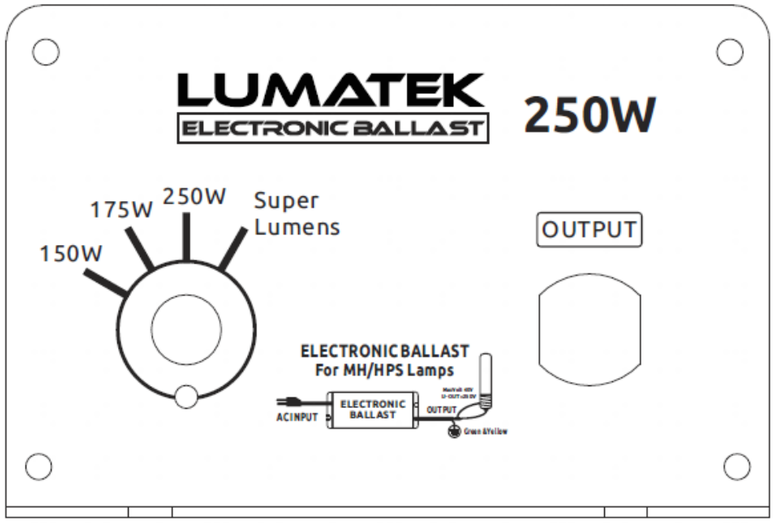
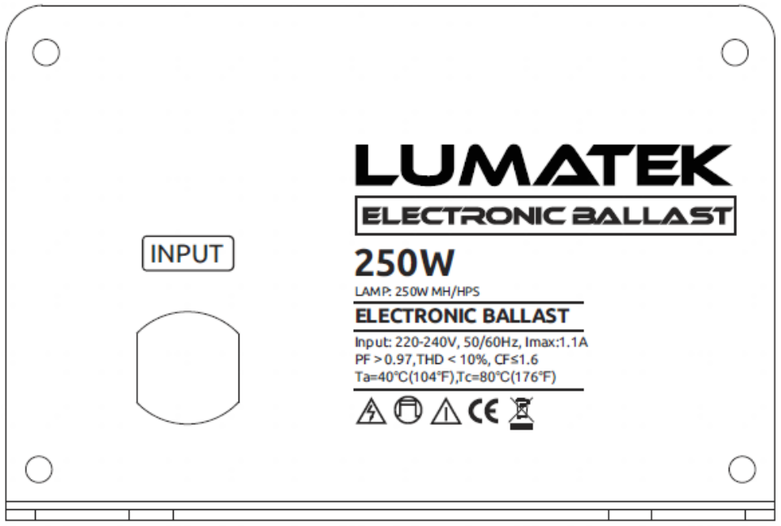
Scale	——	Unit	mm	Sheet 1 Of 1	Issue Date:	Drawn:	Design:

First Angle Projection

Description:		REV P00
Part No:	–	
Used On:	**250W Digital Ballast**	SIZE A3

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	250W Digital Ballast	SIZE A3