

Approval Sheet

FOR DISTRELEC

PART NO.: LTE90ES-S2-3AA (replace 169-01-348)

DESIGN NO.: APL180314B-V1

DATE: Sept. 7. 2018

REMARK: - with official nameplate M70-2791-793823B and packing M82-21-19008067
- DC wire is changed to UL2095

APPROVED BY (PLEASE SIGN)

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**ONTOP ELECTRONIC CO., LTD.
SACONTOP CO., LTD.**

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Our power supply itself is with EMC(EMI+EMS) approval. We don't have Customer's end-product, please double check EMC or peak current or any necessary request after mating with your product with our power supply.

We will produce the goods per the sample + the specification shown on this approval sheet, if you have any question on our sample or our approval sheet such as O/P, dc plug, polarity, safety, protection characteristic (OCP/OVP..etc.) please inform us before signing back the approval sheet. Thanks.

**** IMPORTANT ****

If you want to apply the safety for power supply only or complete set (your product + our power supply), pls contact us to check details in advance. Thanks.

1. INPUT SPECIFICATIONS

◎Input Range :

Parameter	Conditions / Description	Min.	Nom.	Max.	Units
Voltage	Universal-AC Input normal voltage	100	115/230	240	Vac
	Universal-AC Input ranging voltage	90	115/230	264	Vac
Current	@115Vac 90W Load	--	--	2	Arms
	@230Vac 90W Load	--	--	1	Arms
Frequency	Auto-ranging	47	50/60	63	Hz

◎Inrush Surge Current :

- Cold Start @115Vac, at 25°C ----- 60A
- Cold Start @230Vac, at 25°C ----- 100A

2. OUTPUT SPECIFICATIONS

◎Output Power :

- Convection Rating ----- 90W Max.

◎Output Range :

Voltage (Vdc)		Load Range (A)		Line Regulation (%)	Load Regulation (%) (Note 1)	Ripple&Noise (PARD) (mVp-p) (Note 2)
		MIN.	Max. (Convection)			
S2	+12V	0A	7.5A	±0.5%	11.4~12.6Vdc (±5%)	240mVp-p

Note : 1.Load regulation is tested at 10% to 100% of rated load.

2.Peak-to-peak for 90W (convection rating) @115Vac MIN. ; Measurements with a 20MHz bandwidth and terminated with a 22uF electrolytic Cap. in parallel with a 0.1uF ceramic Cap.

◎Overshoot/Undershoot :

- Turn-on / turn-off ----- <10%

3. GENERAL SPECIFICATIONS

◎Efficiency :

■ Full Load @ 115Vac	-----	> 85%
■ Full Load @ 230Vac	-----	> 85%
■ Minimum Average Efficiency in Active Mode	-----	≥ 89%
■ Maximum Power in No Load mode (W)	-----	≤ 0.15
■ DoE Level VI , ErP CoC V.5, Tier II	-----	Meet
■ Power Factor Correction @ 115Vac Full Load	-----	> 0.9

◎Turn-on Time :

■ Full Load @115Vac	-----	< 3Sec
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◎Hold-up Time :

■ Full Load @115 Vac	-----	> 16mSec
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◎Safety Ground Leakage Current :

■ Class II type@230Vac 50Hz	-----	< 0.25mA
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◎Withstand(Isolation) Voltage : (UL60950-1 ; EN60950-1 2nd)

■ 4242Vdc, 1 Minute from Input(L1&L2) to Output	-----	< 10mA
■ 2952Vdc, 1 Minute from Input(L1&L2) to Earth	-----	< N/A

◎Insulation Resistance :

■ Input(L1&L2) to Output @ DC 500V	-----	> 100MΩ
■ Input(L1&L2) to Earth @ DC 500V	-----	> N/A

◎MTBF :

■ Full Load, MIL-HDBK-217F@25°C	-----	> 100kHours
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◎Weight :

■ Not Include Packing	-----	< 480g
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4. PROTECTION SPECIFICATIONS

◎Brown-Out Protection : (Input Voltage drops down to zero then back to nominal slowly)

■ All Outputs	-----	Hiccup / Auto-recovery
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◎Overvoltage Protection : (Latch)

■ V1 Overvoltage Range	-----	110%~200%
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◎Overcurrent(Overload) Protection : (Overcurrent Range @110%~200% above Rating Load)

■ All Outputs	-----	Hiccup / Auto-recovery
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◎Short Circuit Protection :

■ All Outputs	-----	Hiccup / Auto-recovery
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5. ELECTROMAGNETIC COMPATIBILITY SPECIFICATIONS

◎Electromagnetic Interference(EMI/RFI) :

- | | | |
|--|-------|---------|
| ■ FCC PART 15 Conducted/Radiated Emissions | ----- | Class B |
| ■ CISPR 32 Conducted/Radiated Emissions | ----- | Class B |
| ■ EN55032 Conducted/Radiated Emissions | ----- | Class B |

◎Harmonic Current :

- | | | |
|---|-------|------|
| ■ EN61000-3-2 Class A (Power Factor Correction) | ----- | Meet |
|---|-------|------|

◎Voltage Variation Immunity(Flicker) :

- | | | |
|---------------|-------|-----------|
| ■ EN61000-3-3 | ----- | Compliant |
|---------------|-------|-----------|

◎Electrostatic Discharge(ESD) Susceptibility :

- | | | |
|--|-------|-------------|
| ■ EN61000-4-2 ; ±8KV Air Discharge | ----- | Criterion A |
| ■ EN61000-4-2 ; ±4KV Contact Discharge | ----- | Criterion A |

◎Radiated Susceptibility(RS) :

- | | | |
|----------------------|-------|-------------|
| ■ EN61000-4-3 ; 3V/M | ----- | Criterion A |
|----------------------|-------|-------------|

◎Electrical Fast Transient(EFT)/Burst :

- | | | |
|------------------------------|-------|-------------|
| ■ EN61000-4-4 ; Impulse ±1KV | ----- | Criterion A |
|------------------------------|-------|-------------|

◎Surge Susceptibility(Input Transient Protection) :

- | | | |
|--|-------|-------------|
| ■ EN61000-4-5 ; ±1KV Line(L1) to Neutral(L2) | ----- | Criterion A |
| ■ EN61000-4-5 ; ±2KV Line(L1)&Neutral(L2) to Earth | --- | N/A |

◎Conducted RF Immunity :

- | | | |
|--------------------|-------|-------------|
| ■ EN61000-4-6 ; 3V | ----- | Criterion A |
|--------------------|-------|-------------|

◎Voltage Dips/Interruptions :

- | | | |
|--------------------------------|-------|-------------|
| ■ EN61000-4-11 ; Dips | ----- | Criterion A |
| ■ EN61000-4-11 ; Interruptions | ----- | Criterion B |

6. SAFETY STANDARDS SPECIFICATIONS

- | | | |
|---------------------------|-------|-----------|
| ■ UL 60950-1 | ----- | Certified |
| ■ cUL 60950-1 | ----- | Certified |
| ■ TUV EN 60950-1 | ----- | Certified |
| ■ CB Report (IEC 60950-1) | ----- | Certified |
| ■ CE | ----- | Certified |
| ■ BSMI | ----- | Certified |

7. ENVIRONMENTAL SPECIFICATIONS

◎Temperature :

- Operating Range ----- 0 ~ 40 °C
- Storage Range ----- -40 ~ 85 °C
- Derating Output (40~60 °C) ----- -2.5% per °C

◎Relative humidity :

- Non-Condensing ----- 5 % ~ 95 % RH

◎Vibration :

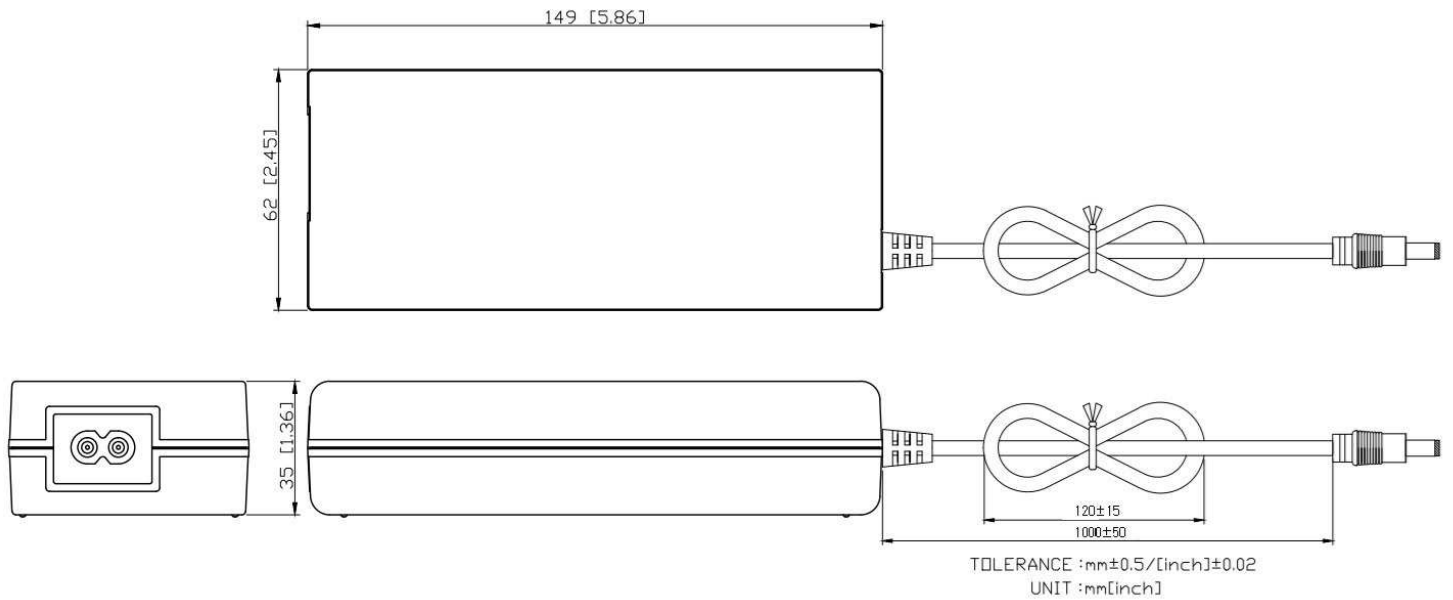
- Random—Operating , 3 axes , 50~500Hz , 10 minutes/axis ---- 2.4Grms Max.

◎Shock :

- Operating , Half Sine , 3 axes , 10 mS , 6 shocks total ----- 20Gpk Max.

8. MECHANICAL SPECIFICATIONS

◎Drawing & Dimensions :



◎Connector Types & Pin Assignments :

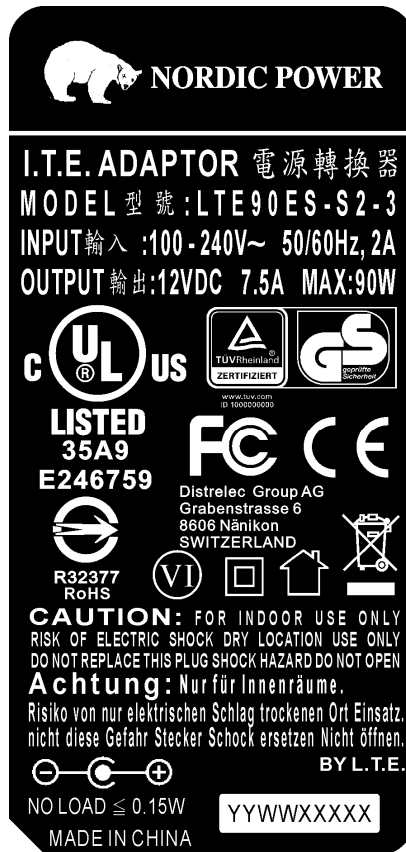
Connector Number	Connector Type	Pin Number	Signal
AC Inlet (Input)	IEC320 C8 AC Inlet	Pole 1	LINE
		Pole 2	NEUTRAL
(Output)	DC CORD 5.5x2.1x11mm 180 degree 平□ UL2095 4C 16AWG L=1000mm (M01-0210-100103) <REV.:A >	INNER	+OUTPUT
		OUTTER	RETURN

Note : (5.5x2.1x11 Plug Max. Current Rating : 5A)

9. MARKING & LABEL SPECIFICATIONS

©ID & Safety Label

(Attached)



(M70-2791-793823B) <REV.:A >

©RoHS COMPLIANT Label

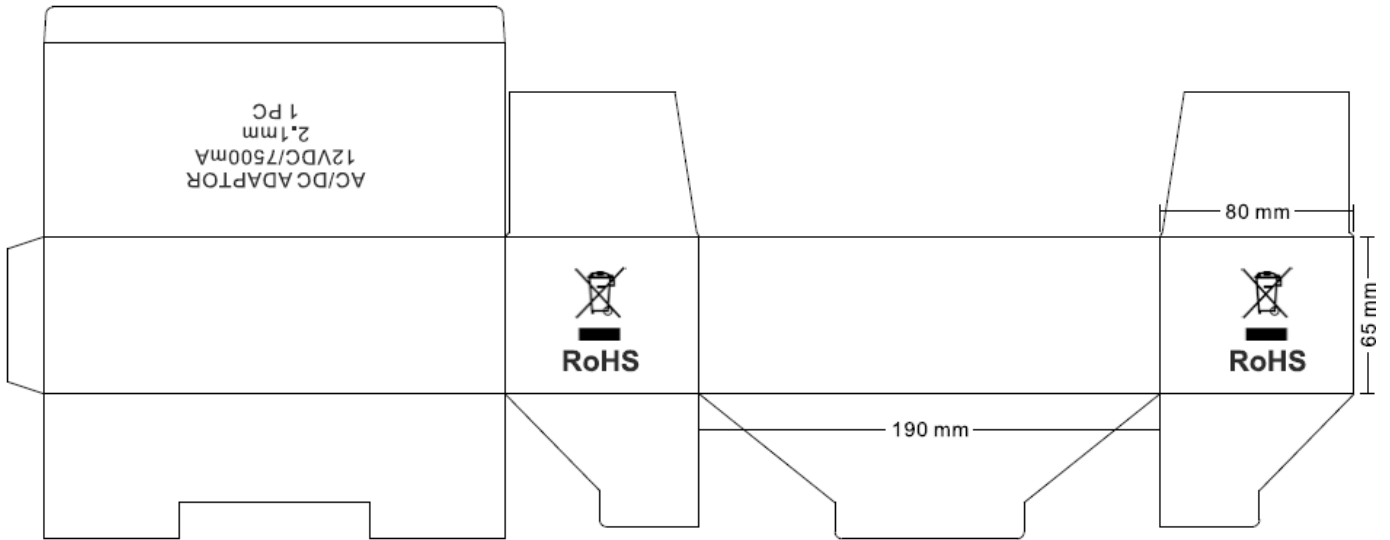
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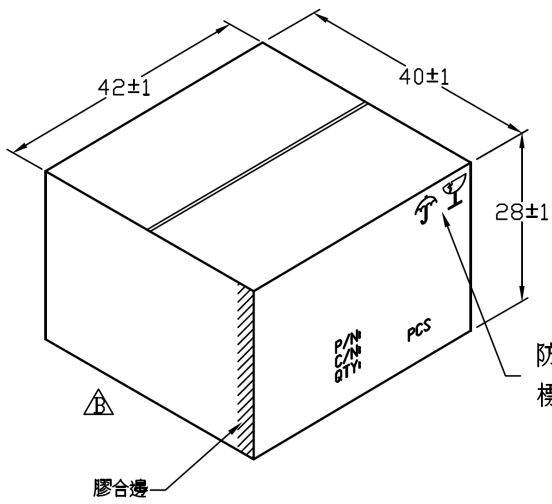
10. PACKAGE

◎Paper Box & Carton

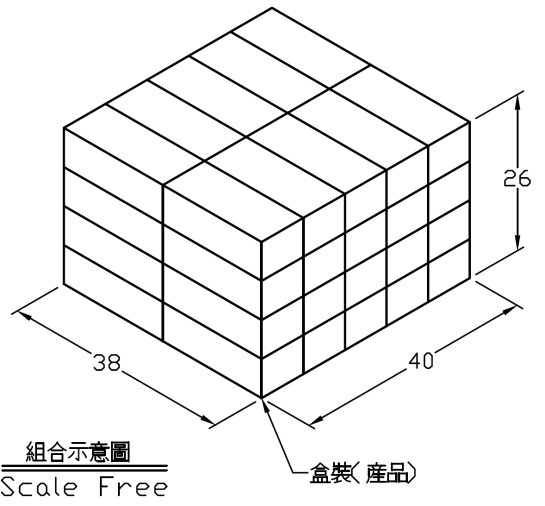
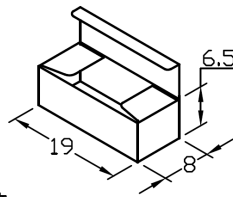
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(M82-21-19008067)



防潮 & 易碎
標示兩旁(黑色)



(M83-2201-424028)