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REPORT

On

DIRECT-PLUG-IN AND CORD-CONNECTED CLASS 2 POWER UNITS

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## DESCRIPTION

## PRODUCT COVERED:

USL, CNL - Class 2 Power Unit, **Indoor and** Outdoor Use, Models TS-24V1.5A, TS-30W5V, TS-30W6V, TS-36W12V, TS-36W13V, TS-40W14V, TS-40W15V, TS-40W16V, TS-40W17V, TS-40W18V, TS-40W19V, TS-40W20V, TS-40W21V, TS-40W22V, TS-40W23V, TS-48W24V, TS-48W25V, TS-48W26V, TS-48W27V, TS-48W28V and TS-48W29V.

USL, CNL - Class 2 Power Unit, Indoor Use, Models TS-48W30V, TS-48W31V, TS-48W32V, TS-48W33V, TS-48W34V, TS-48W35V and TS-48W36V.

## GENERAL:

These power units are not intended for use with Nonintegral Light-emitting-diode Decorative-lighting Strings.

These units covered by this Report are Direct Plug-In type Class 2 Power Units.

These units consist of a switching mode transformer and other related electronic circuitry housed in a thermoplastic enclosure, and provided with parallel blades for connection to line voltage.

## ELECTRICAL RATING:

Model	Input			Output	
	V ac	Hz	A	V dc	A
TS-24V1.5A	120	60	0.64	24	1.5
TS-48W24V	120	60	0.83	24	2
TS-48W29V	120	60	0.83	29	1.66
TS-36W12V	120	60	0.64	12	3
TS-36W13V	120	60	0.64	13	2.77
TS-40W14V	120	60	0.72	14	2.86
TS-40W15V	120	60	0.72	15	2.67
TS-40W16V	120	60	0.72	16	2.5
TS-40W17V	120	60	0.72	17	2.36
TS-40W18V	120	60	0.72	18	2.23
TS-40W19V	120	60	0.72	19	2.11
TS-40W20V	120	60	0.72	20	2
TS-40W21V	120	60	0.72	21	1.91
TS-40W22V	120	60	0.72	22	1.82
TS-40W23V	120	60	0.72	23	1.74
TS-48W25V	120	60	0.83	25	1.92
TS-48W26V	120	60	0.83	26	1.85
TS-48W27V	120	60	0.83	27	1.77
TS-48W28V	120	60	0.83	28	1.71

(cont'd)

Model	Input			Output	
	V ac	Hz	A	V dc	A
TS-48W30V	120	60	0.83	30	1.6
TS-48W31V	120	60	0.83	31	1.55
TS-48W32V	120	60	0.83	32	1.5
TS-48W33V	120	60	0.83	33	1.45
TS-48W34V	120	60	0.83	34	1.41
TS-48W35V	120	60	0.83	35	1.37
TS-48W36V	120	60	0.83	36	1.33
<b>TS-30W5V</b>	<b>120</b>	<b>60</b>	<b>0.65</b>	<b>5</b>	<b>5</b>
<b>TS-30W6V</b>	<b>120</b>	<b>60</b>	<b>0.65</b>	<b>6</b>	<b>5</b>

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

USL - Indicates investigation to the UL Standard for Safety for Class 2 Power Units, UL 1310, Seventh Edition.

CNL - Indicates investigation to the Canadian Standard for Power Supplies with Extra-Low-Voltage Class 2 Outputs, CAN/CSA-C22.2 No. 223-M15, Third Edition.

The spacings have been evaluated in accordance with the requirements of the Standard for Insulation Coordination Including Clearances and Creepage Distances for Electrical Equipment, UL 840, Table 9.1 under conditions of pollution degree 2 and pollution degree 3, and UL 1310, Seventh Edition, Clause 61, Table 24.1, and CAN/CSA-C22.2 No.223-M15, Third Edition, Tables 2 & 3.

## Model Differences -

Model TS-48W24V is similar to Model TS-48W29V except for model designation and output ratings.

Model TS-36W13V is similar to Model TS-36W12V except for output rating and model designation.

**Models TS-30W6V and TS-30W5V are similar to Model TS-48W29V except for key components & output rating and model designation.**

Model TS-40W14V is similar to Model TS-40W15V except for output rating and model designation.

Models TS-40W17V and TS-40W18V are similar to Model TS-40W16V except for output rating and model designation.

Models TS-40W21V and TS-40W22V are similar to Model TS-40W20V except for output rating and model designation.

Model TS-48W26V is similar to Model TS-48W25V except for output rating and model designation.

Model TS-48W28V is similar to Model TS-48W27V except for output rating and model designation.

Model TS-48W31V is similar to Model TS-48W30V except for output rating and model designation.

Models TS-48W34V and TS-48W35V are similar to Model TS-48W33V except for output rating and model designation.

## CONSTRUCTION DETAILS:

These units shall be constructed in accordance with the following items. See also, Sec. Gen., Construction Details.

For CNL unit, cautionary markings shall be provided in both English and French.

Markings - In addition to Section General, Markings, pressure sensitive label which contain any of the required markings, shall be R/C (PGDQ2/8) or R/C (PGDQ2)/CSA Certified, suitable for temperature range 80°C to -35°C and for the surface adhered to. The following markings shall be additional marked.

Markings - See Section General. The following additional markings shall be provided on the unit:

For Outdoor Use units (For Models TS-24V1.5A, TS-30W6V, TS-30W5V, TS-36W12V, TS-36W13V, TS-40W14V, TS-40W15V, TS-40W16V, TS-40W17V, TS-40W18V, TS-40W19V, TS-40W20V, TS-40W21V, TS-40W22V, TS-40W23V, TS-48W24V, TS-48W25V, TS-48W26V, TS-48W27V, TS-48W28V and TS-48W29V only):

"Raintight"

Caution Markings - The following cautionary markings shall be located on a part that cannot be removed without impairing the operation of the unit (For Outdoor Use units only).

1. "WARNING: Risk of Electric Shock. Install only to a covered Class A GFCI receptacle that has an enclosure that is weatherproof with the attachment plug cap inserted or removed."
2. "WARNING: Not for use with receptacles that are weatherproof only when the receptacle is covered (attachment plug cap not inserted and receptacle cover closed)."

The words "CAUTION", "WARNING", and/or "DANGER" shall be in letters not less than 3.2 mm (1/8 in.) tall, remaining letters not less than 1.6 mm (1/16 in.) tall.

For Indoor Use units (For Models **TS-24V1.5A, TS-30W5V, TS-30W6V, TS-36W12V, TS-36W13V, TS-40W14V, TS-40W15V, TS-40W16V, TS-40W17V, TS-40W18V, TS-40W19V, TS-40W20V, TS-40W21V, TS-40W22V, TS-40W23V, TS-48W24V, TS-48W25V, TS-48W26V, TS-48W27V, TS-48W28V, TS-48W29V**, TS-48W30V, TS-48W31V, TS-48W32V, TS-48W33V, TS-48W34V, TS-48W35V and TS-48W36V only):

"CAUTION" or "WARNING" and "Risk of Electric Shock" and "Dry location use only" or "Do not expose to liquid, vapor, or rain."

## CONSTRUCTION DETAILS: (Cont'd)

Instruction Manual - The statement "READ AND FOLLOW ALL SAFETY INSTRUCTIONS" shall be prominently displayed and precede the list. The statement "SAVE THESE INSTRUCTIONS" shall be prominently displayed and follow the list. The word "WARNING" shall be entirely in upper case letters of 1/8 inch (3.18 mm) high or in a readily visible contrasting text. Important safety instructions shall be provided and include the items in the following list:

## IMPORTANT SAFETY INSTRUCTIONS (For Outdoor Use Units only)

When using electrical products, basic precautions should always be practiced including the following:

1. READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
2. Read and follow all instructions that are on the product or provided with the product.
3. Do not use an extension cord.
4. Reference the National Electrical Code, ANSI/NFPA 70, specifically for the installation of wiring and clearances from power and lighting conductors.
5. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
6. Do not install or use within 10 feet of a pool.
7. Do not use in a bathroom.
8. WARNING: Risk of Electric Shock. When used outdoors, install only to a covered Class A GFCI protected receptacle that is weatherproof with the power unit connected to the receptacle. If one is not provided, contact a qualified electrician for proper installation. Ensure that the power unit and cord do not interfere with completely closing the receptacle cover.
9. WARNING: Risk of Fire. Installation involves special wiring methods to run wiring through a building structure. Consult a qualified electrician.
10. WARNING: Not for use with receptacles that are weatherproof only when the receptacle is covered (attachment plug cap not inserted and receptacle cover closed).

SAVE THESE INSTRUCTIONS - This manual contains important safety and operating instructions for power units.