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REPORT

on

COMPONENT - Drivers for Light-emitting-diode Arrays, Modules and Controllers

ASTEC INTERNATIONAL LTD  
KOWLOON, HONGKONG

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## DESCRIPTION

## PRODUCT COVERED:

USR, CNR- Component LED Driver, see electrical ratings table for models.

## ELECTRICAL RATINGS:

Model No.	Input			Output	
	Voltage (Vac)	Frequency (Hz)	Current (A), Power Factor(PF)	Voltage (Vdc)	Current (A)
LCC600-48U-4P, LCC600-48U-9P, LCC600-48U-4XXX, LCC600-48U-9XXX	100-240	50/60	10A, >0.94PF	LED: 48V 5Vsb: 5V	LED: 12.5A 5Vsb: 1.5A
LCC600-48H-4P, LCC600-48H-9P, LCC600-48H-4XXX, LCC600-48H-9XXX	200-277	50/60	10A, >0.94PF	LED: 48V 5Vsb: 5V	LED: 12.5A 5Vsb: 1.5A

Where XXX can be any characters for commercial purposes, not affecting safety.

## DIFFERENCES BETWEEN MODELS:

Model LCC600-48U-4P and LCC600-48U-4XXX are same as each other except the model designation.

Model LCC600-48U-9P and LCC600-48U-9XXX are same as each other except the model designation.

Model LCC600-48H-4P and LCC600-48H-4XXX are same as each other except the model designation.

Model LCC600-48H-9P and LCC600-48H-9XXX are same as each other except the model designation.

Suffix = the connection method as below:

Suffix	connection method
4P, 4XXX	Cord-connected
9P, 9XXX	Connector

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

USR - Indicates investigation to the United States Standards for Light Emitting Diode (LED) Light Equipment for Use in Lighting Products, UL 8750.

CNR - Indicates investigation to the Canadian Standard for: Light emitting Diode (LED) Equipment for Lighting Applications, CAN/CSA-C22.2 No. 250.13.

These products been evaluated for the following characteristics.

Model No.	Input type	Output type	Environment	Type HL (a)	Type TL (b)
LCC600-48U-XX, LCC600-48H-XX	Branch Circuit (Mains)	Constant Current Isolated SELV output (c)	Damp	No	No

a- Evaluated per UL 8750 requirements for Type HL LED drivers

b- Evaluated per UL 8750 requirements for Type TL LED drivers

c- As defined in UL 60950, Clause 2.2 and CAN/CSA-C22.2 No. 60950-1-07, Clause 2.2

## and Report

## CONDITIONS OF ACCEPTABILITY:

Use - For use only in (or with) complete equipment where the acceptability of the combination is determined by UL LLC.

1. Rated output loading for these products was achieved using electronic loads. The temperature tests were performed at Tc=85°C.
2. During the temperature test of the end product, the temperature at Tc (on baseplate, near T204) is to be monitored. The absolute value at Tc cannot exceed 85°C. This value was calculated based on temperatures observed during testing and temperature ratings of the integral components including the electrical insulation system.
3. These products utilize a UL Recognized OBJY2 Class 155 (F) electrical insulation system.
4. These products provided with metal housing with min. 0.8 mm. Acceptability of the LED driver with respect to mounting, spacing, casualty, temperature and segregation is to be determined as part of the end device evaluation.
5. The Leakage Current test was not conducted for these models. Based on end use requirements and the construction presented, this test may need to be performed as part of the end product evaluation.
6. These products with Suffix 'XX'=4P are provided with SJTW type, 18 AWG x 3C, rated minimum 105°C, minimum 300V for input connection;  
2 sets of AVL2/8, 14 AWG x 2C, rated minimum 105°C, minimum 300V for LED output connection;  
AVL2/8, 26 AWG x 20C, rated minimum 105°C, minimum 300V for 5Vsb output connection.

Acceptability of the input lead wire being smaller than 18 AWG is to be determined as part of the end product evaluation. Acceptability of the leads relative to strain relief and secureness, is to be determined as part of the end device evaluation.

7. These products with Suffix 'XX'=9P are provided with connectors for supply connection; terminal blocks for load connection. These terminal blocks are suitable for field and factory wiring.
8. These products have multiple outputs. The LED outputs are at hazardous energy levels; the 5Vsb outputs are at non-hazardous energy levels. Interconnection of these outputs has not been evaluated. Acceptability of interconnection of these outputs (and the associated circuits) is to be considered as part of the end product evaluation.
9. These products are dimmable using a low voltage 0-10V interface. This interface is a sink, since the interface circuit operates from an external source of supply. The interface circuit has been evaluated for isolation from primary (input) and secondary (output) circuits with spacings based on the maximum rated branch supply, 277 Vac.

## CONDITIONS OF ACCEPTABILITY (CON'T):

10. These products are marked suitable for dry/ damp locations. Additional considerations will be necessary as these LED drivers are integrated into wet rated end devices (i.e. input and output supply connection means, accessibility of the output based on maximum voltage restrictions for wet rated Class 2 circuits, acceptability of markings, etc.).
11. The equipment has been evaluated for use in a Pollution Degree 2 environment.
12. Reinforced insulation is provided between primary circuit to secondary circuit and basic insulation is provided on primary circuit to Earth.

## Illustrations-

Ill. No.	Description
1	Top Cover Enclosure drawing of model LCC600-48U-9P.
2	PWB and Trace Layout (EMI) of model LCC600-48U-9P.
3	PWB and Trace Layout (PFC) of model LCC600-48U-9P.
4	PWB and Trace Layout (CAP) of model LCC600-48U-9P.
5	Heat sink (HTSKA102) drawing of model LCC600-48U-9P.
6	Insulator (EMI) drawing of model LCC600-48U-9P.
7	Insulator (CAP) drawing of model LCC600-48U-9P.
8	PWB and Trace Layout (MAIN) of model LCC600-48U-9P.
9	Insulator (MAIN) drawing of model LCC600-48U-9P.
10	Insulator (Cover) drawing of model LCC600-48U-9P.
11	Heat sink (HTSK101) drawing of model LCC600-48U-9P.
12	Heat sink (For HSK101) drawing of model LCC600-48U-9P.
13	Heat sink (For T204 top) drawing of model LCC600-48U-9P.
14	PWB and Trace Layout (CTRL) of model LCC600-48U-9P.
15	Inductor (L103) specification for model LCC600-48U-9P.
16	Transformer (T301) specification for model LCC600-48U-9P.
17	Transformer (T501) specification for model LCC600-48U-9P.
18	Transformer (T204) specification for model LCC600-48U-9P.
19	Top Cover Enclosure drawing of model LCC600-48U-4P.
20	Bushing (Input) drawing of model LCC600-48U-4P.
21	Bushing (Output) drawing of model LCC600-48U-4P.
22	Insulator (Cover) (Alternate) drawing of model LCC600-48U-4P.
23	PWB and Trace Layout (EMI) of model LCC600-48H-9P.
24	PWB and Trace Layout (CAP) of model LCC600-48H-9P.
25	Transformer (T204) specification for model LCC600-48H-9P.