

## STANDARD INFORMATION

**This SUN establishes the Continuing Certification approach to Nonindustrial Photoelectric Switches for Lighting Control**

**Standard Number:** UL 773A

**Standard Name:** Nonindustrial Photoelectric Switches for Lighting Control

**Standard Edition and Issue Date:** 6<sup>th</sup> Edition Dated January 19, 2016

**Date of Revision:** May 25, 2018

**Date of Previous Revision of Standard:** January 19, 2016

## EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

**Effective Date:** **No action is required for currently certified products to maintain certification.**

**This SUN is being presented to assist users of the standard to appreciate the significance of the changes made to the standard that will apply should the product described be modified after June 26, 2021.**

## IMPACT, OVERVIEW, AND ACTION REQUIRED

**Impact Statement:** A review of all Listing Reports is necessary to determine which products comply with new/revise requirements and which products will require re-evaluation. **NOTE:** Effective immediately, this revised standard will be exclusively used for evaluation of new products unless the Applicant requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revise requirements.

### Overview of Changes:

- Markings and Instructions for devices that do not provide a grounding conductor.
- Requirements for e-ballast loads
- Added the abbreviation for electronic ballast "EFL"

Specific details of new/revise requirements are found in table below.

**If the applicable requirements noted in the table are not described in your report(s), these requirements will need to be confirmed as met and added to your report(s) such as markings, instructions, test results, etc. (as required).**

### Client Action:

**Information** – To assist our Engineer with review of your Listing Reports, please submit technical information in response to the new/revise paragraphs noted in the attached or explain why these new/revise requirements do not apply to your product (s).

***Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.***



## STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		<i>Additions to existing requirements are underlined and deletions are shown lined out below.</i>

20	Info	<b>Overload Test</b>
<b>Methods for determining currents for overload / endurance tests by types of loads</b>		

Table 20.1		<b>Load Type</b>	<b>Overload (a)</b>	<b>Endurance (a, b)</b>	<b>Marking example</b>
	5	AC Externally ballasted Fluorescent and LED Lamps (electronic )	Amp = 1.5 x rated Load = Tungsten lamp	See Table 21.5 below	“Elect Bal”; “e-ballast”; “Electronic Ballast”; “E.BAL.” “EL. BAL.” <u>“EFL”</u>

21	Info	<b>Endurance Test</b>
<b>Electronic ballast</b>		

Table 21.5		<b>Steady state current (A)</b>	<b>Peak current (A) 120 Vac</b>	<b>Pulse Width 120 Vac (ms) See Note 2</b>	<b>I2t (A2 sec) 120 Vac See Note 1</b>	<b>Peak current (A) 277 Vac</b>	<b>Pulse Width 277 Vac (ms) See Note 2</b>	<b>I2t (A2 sec) 277 Vac See Note 1</b>
		0.5	75	0.34	11	77	<del>0.07</del> <u>0.50</u>	11

***New clause added;***

21.10 The synthetic load described in 21.11 and 21.12 shall be used as the load for testing. The endurance test shall be completed with that load.

***New clause added;***

21.11 The series coil values shall be adjusted based on the input line characteristics to achieve the peak currents listed in Table 21.5, Electronic ballast, and Table 21.6, Controls rated 347 VAC. The series coil shall be sized such that it does not saturate during testing and shall be able to handle the resulting power dissipation with less than 10°C temperature rise. Peak current and pulse width are illustrated in Figure 21.1.

***New clause added;***

21.12 The circuit shall provide a method to discharge the capacitor bank in between test cycles without influencing the performance of the device under test. This is accomplished by S2 and R2 in Figure 21.2. S2 should be switched alternately with S1 and R2 should be sized to allow for complete discharge of C during the period that S1 is open.



CLAUSE	VERDICT	COMMENT
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*New table added;*

**Controls rated 347 VAC**

Table 21.6

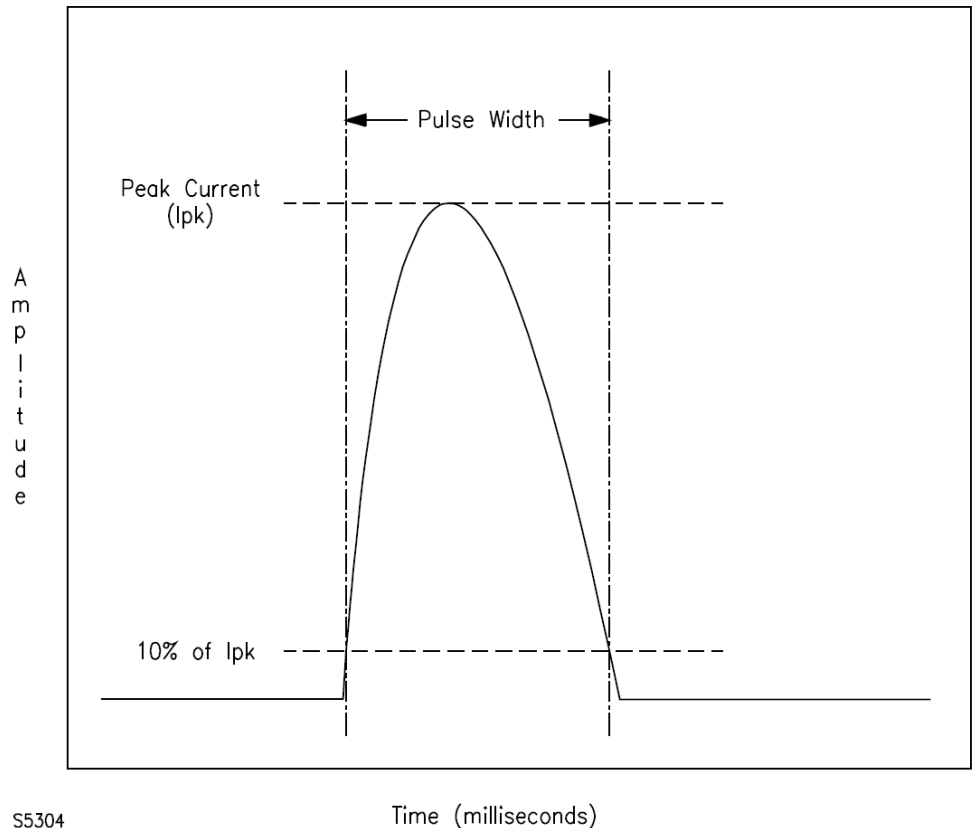
Steady State Current (A)	Peak Current (A) 347 VAC	Pulse Width 347 VAC (ms)	I2t (A2 sec) 347 VAC See Note 1
0.5	198	0.34	92
1	270	0.47	173
2	354	0.70	294
3	296	0.86	369
5	450	1.15	476
8	492	1.50	569
10	508	1.67	606
12	529	1.66	658
15	550	2.05	711
16	552	2.10	716

Note 1 – The values used to calculate I2t are the peak current shown in the table above and pulse duration of 2.35ms (t).

*New figure added;*

**Waveform per synthetic measurement of pulse width and peak current**

Figure 21.1



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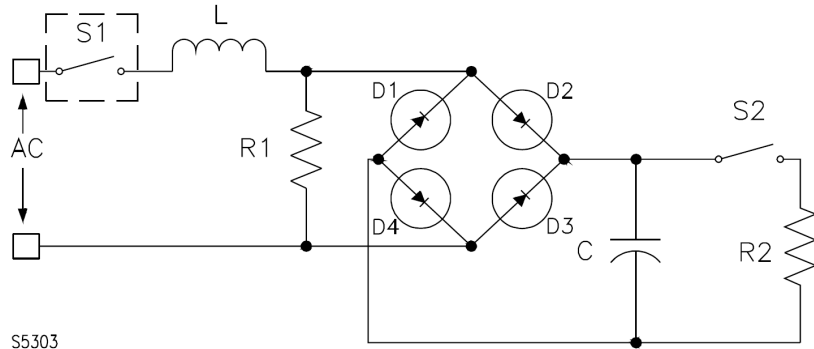
Time (milliseconds)



CLAUSE	VERDICT	COMMENT
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*New figure added;*

**Typical test circuit diagram**



S5303

Figure 21.2

Reference	Description
AC	Test voltage is either 347 VAC, 277 VAC or 120 VAC
S1	Device Under Test
L	Series Inductor, its value of inductance (L) and resistance (R) are selected. When combined with the AC line source impedance it provides the specified Reference Waveforms
R1	AC synthetic load resistor, value to provide desired continuous current. (e.g., 5A, 8A, [mldr ]16A)
D1 through D4	Bridge rectifier
C	Capacitor load bank, design value to provide 125 mF for each continuous amp of load current at a test voltage of 347 VAC or 277 VAC, and 175 mF for each continuous amp of load current at a test voltage of 120 VAC.
S2	Capacitor discharge switch
R2	Bleeder resistor, value to provide appropriate capacitor load bank discharge rate

42 Info **Details**

**Markings and instructions**

Table 42.1

Ref	Type of devices	Statement	Marking	Location
13	Load type	Devices intended to control Electronic Ballast	“Elect Bal” “e-ballast” “Electronic Ballast”; “El. Bal”; “E.Bal” “EFL”	On the product and instructions
25	Devices requiring connection to ground which introduce current on the equipment-grounding conductor (see 14.1.11)	Devices evaluated according to requirements	“Device will not function if it is not grounded” and “To be installed only in replacement or retrofit applications where the grounded conductor (neutral) is not present in the outlet box” or equivalent wording	On the product and instruction sheet

**CUSTOMERS PLEASE NOTE:** This Table and column “Verdict” can be used in determining how your current or future production is or will be in compliance with new/revised requirements.