



US 20220369439A1

(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2022/0369439 A1**  
(43) **Pub. Date: Nov. 17, 2022**(54) **DRIVER FOR LED DEVICE, LED SYSTEM,  
AND ADAPTATION METHOD FOR LED  
DEVICE**(52) **U.S. Cl.**  
CPC ..... *H05B 45/37* (2020.01); *H05B 45/345*  
(2020.01); *H05B 45/305* (2020.01)(71) Applicant: **CURRENT LIGHTING  
SOLUTIONS, LLC**, East Cleveland,  
OH (US)(57) **ABSTRACT**(72) Inventors: **Qiang Zou**, Xian, ShaanXi (CN);  
**Zhichao Liu**, Shanghai (CN); **Qi Yan**,  
Xian, ShaanXi (CN)

A driver for a light-emitting diode (LED) device comprises: a rectifier, a current regulator and a detecting module. The rectifier is coupled to a ballast and configured to convert an alternating current from the ballast into a direct current. The current regulator is coupled between the rectifier and the LED device, and configured to receive the direct current from the rectifier and output a driving current to the LED device. The detecting module is configured to detect a signal indicating an output characteristic of the ballast, during a startup stage of the LED device. The current regulator is configured to convert the direct current from the rectifier into the driving current with a value equal to or less than a preset current threshold when the signal meets a preset condition, and the preset current threshold is less than a maximum current the LED device is able to carry without damage.

(21) Appl. No.: **17/761,258**(22) PCT Filed: **Sep. 17, 2019**(86) PCT No.: **PCT/CN2019/106175**

§ 371 (c)(1),

(2) Date: **Mar. 17, 2022****Publication Classification**(51) **Int. Cl.**  
*H05B 45/37* (2006.01)  
*H05B 45/345* (2006.01)  
*H05B 45/305* (2006.01)