

论文

一种LED汽车前照近光灯配光设计方案

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摘要:

从汽车前照近光灯GB4599-94标准出发,提出了一种LED近光灯的设计方案.该方案采用侧发光型LED为光源,以抛物面作为反射器设计的基础面,根据GB4599-94对近光灯的配光要求在ReflectorCAD中划分基础面,并合理调整各子面的面型数据,使光源经各子面反射后在配光屏上的光照分布满足配光要求.结果表明:采用400 lm侧发光LED和恰当的光学照明系统能完全满足GB4599-94标准对汽车前照近光灯光照分布的要求.限于400 lm侧发光LED尚未商品化,采用40.5 lm侧发光LED,通过10组LED-反射器模块叠加逼近此配光方案.

关键词: LED近光灯 前照系统 反射器 配光

A Light Distribution Proposal for Designing LED Dipped Headlight

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Abstract:

A light distribution scheme for designing LED dipped headlight is proposed,based on the GB4599-94 regulation.A side emitting LED is used and a paraboloid is chosen as the reference surface.The reference surface was divided into many subsurfaces.Data of these surfaces is adjusted reasonably,and light distributions of the LED on the filament shield are overlapped to meet the desired illumination distribution with ReflectorCAD.The results show that,when the right optical system and the side emitting LED with 400 lumens are introduced,illumination distributions on the filament shield meet requirements of GB4599-94 regulation for dipped headlight.Because side emitting LED with 400 lumens has not been commercialized,side emitting LED with 40.5 lumens is adopted in the design.Illumination distributions of ten LED-Reflector modules are overlapped to implement the light distribution scheme.

Keywords: LED dipped headlight Forward lighting system Reflector Light distribution

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