

用於LED照明系統的先進自由曲面光學原件 Advanced Freeform Optics for LED Illumination

能夠提高LED照明系統效能的新型光學部件

Novel optical components that can improve the efficiency of LED lighting systems

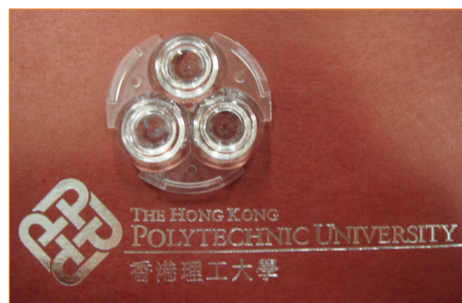
節能是21世紀一個非常重要的問題，由於LED具有非常優秀的節能、壽命長、環保等特點，隨著LED輸出光功率的不斷提高及價格的下降，綠色環保的LED照明受到越來越多的關注。獨特設計的LED自由曲面二次光學原件，將極大地提高LED輸出的光效率，效率比傳統照明可提高50%，能源需求只是傳統照明的十分之一。這個專案的目的是要建立一個整合了創新光學設計，超精密加工技術，精密測量技術和精密注塑技術的技術平台，研發用於LED照明系統的先進自由曲面光學原件。



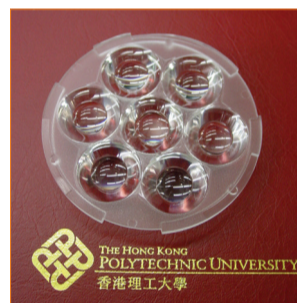
汽車照明
Automotive lighting



用於LED路燈的自由曲面反光杯
Freeform reflector for LED road lamp



LED 準直鏡 — 三單元
LED Collimator – 3 units

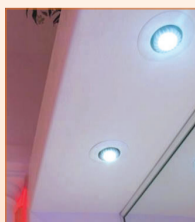


LED 準直鏡 — 七單元
LED Collimator – 7 units



路燈
Road Lamp

With the advantages of energy saving, long life, environmentally friendly characteristics, steadily enhancement of output flux, and decreasing LED prices, green energy LED lighting systems will gradually replace the traditional light sourced lighting systems. With the fast growing development of advanced optical components, freeform secondary LED optics can improve the light output and increase it to the maximum required. In comparison with traditional lighting, the efficiency can be increased by 50% and the energy required is only one tenth. The aim of this project is to establish a technological platform integrating innovative optics design, ultra-precision machining technology, precision measurement technology and precision injection moulding for the development of advanced freeform optics for LED illumination.



室內外照明
Indoor & outdoor lighting



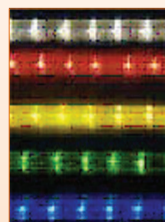
舞台照明
Stage illumination



背光模組
Back light module



用於醫療儀器的
照明
Lighting system for
medical application



裝飾照明
Decorative illumination

特色與優點

- 高效節能
- 超長壽命，大約10萬小時
- 持久耐用
- 高可控性
- 安全低電壓工作
- 動態，可調的頻譜及RGB飽和色調
- 靈活性封裝
- 沒有IR或UV輻射
- 環保型（無有害金屬汞）

應用

- 汽車照明
- LED路燈
- 室內外照明
- 舞台照明
- 背光模組
- 用於醫療儀器的照明
- 裝飾照明

Special Features and Advantages

- High efficiency
- Extremely long lifetimes
- Excellent durability
- High controllability
- Low voltage operation
- Dynamic, tuneable spectra & saturated colours
- Flexible packaging
- No IR or UV emission
- Environmentally friendly (e.g. no mercury)

Applications

- Automotive lighting
- LED road lamps
- Indoor & outdoor lighting
- Stage illumination
- Back light modules
- Lighting system for medical applications
- Decorative illumination

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