

CLAIMS

1. An LED traffic billboard, comprising a frame, a light emitting module and a lens hood, and the frame being sheathed on the light emitting module, and the lens hood being covered onto the light emitting module, characterized in that the light emitting module comprises a plurality of light emitting units arranged into a matrix, each having at least one surface-mount device (SMD) LED, and an external surface of the lens hood has a serrated structure; a lens tray is coupled to a side of the lens hood, and the lens tray is integrally formed with the lens hood, and the lens tray has a plurality of lens units corresponsive to the light emitting units and covered onto the LEDs respectively, and the external surface of each lens unit has a microstructure, such that each LED has an illumination range of a first angle and a second angle on a Y-axis and an X-axis of a surface of the lens hood respectively, and each microstructure is a serrated surface or a wavy surface disposed perpendicular to the serrated structure, wherein the external surface of each lens unit parallel to the X-axis forms a baseline, and the external surface of each lens unit is divided into two areas, and at least one area of the external surface of each lens unit is tilted from the baseline towards a surface of the lens tray or tilted with respect to a surface of the lens tray and has a predetermined thickness, and each microstructure has a cross-section substantially in a continuously bending conical shape or circular arc shape.
2. The LED traffic billboard of claim 1, wherein each lens unit has a spherical surface corresponsive to the LEDs, and after lights of the LEDs are projected onto the lens units, the tilted external surface of the lens units keeps the light within an illumination range of the first angle illumination range.
3. The LED traffic billboard of claim 2, wherein the light emitting units are equidistantly arranged with an interval apart from one another and formed into a matrix, and the interval is greater than or equal to 10 millimeters and smaller than or equal to 35 millimeters.
4. The LED traffic billboard of claim 3, wherein the first angle is equal to 15°, and the second angle is equal to 30°.

5. The LED traffic billboard of claim 4, wherein the frame has at least one waterproof plastic strip installed around the periphery of the frame, and the circuit board of the light emitting module is covered by a hydrophobic nano plastic layer.
6. The LED traffic billboard of claim 5, wherein the frame is coupled to the lens hood through a post-installation method, so that the surface of the lens hood is free of locking holes to enhance water resistance.
7. The LED traffic billboard of claim 6, wherein each light emitting unit is formed by three LEDs arranged into a substantially triangular shape, and the LEDs have a same color temperature or different color temperatures, and each lens unit is configured to be corresponsive to the light emitting unit and has three lenses arranged into a substantially triangular shape.