CLAIMS

WHAT IS CLAIMED IS:

[Claim 1]

A display device comprising:

a circuit substrate;

light-emitting elements disposed on the circuit substrate and electrically connected to the circuit substrate, respectively;

a color conversion layer disposed on a first light-emitting element of the light-emitting elements; and

a bank comprising multiple strip structures extending along a first direction and arranged along a second direction intersecting the first direction, wherein a first strip structure of the multiple strip structures is disposed between the first light-emitting element and a second light-emitting element of the light-emitting elements, and there is a gap between the first strip structure and the color conversion layer,

wherein no color conversion layer is disposed on the second light-emitting element, and a gap between the first strip structure and a second strip structure of the multiple strip structures disposed respectively on two opposite sides of the second light-emitting element is less than a gap between the first strip structure and a third strip structure of the multiple strip structures disposed respectively on two opposite sides of the first light-emitting element.

[Claim 2]

The display device according to claim 1, wherein the gap between the first strip structure and the color conversion layer is greater than 0.1 μm.

[Claim 3]

The display device according to claim 1, wherein there are multiple second light-emitting

elements, and the second light-emitting elements are evenly distributed.

[Claim 4]

The display device according to claim 1, wherein the color conversion layer is a photoresistive color conversion layer.

[Claim 5]

The display device according to claim 1, wherein an angle between a sidewall of the color conversion layer and a surface of the circuit substrate is less than 90 degrees.

[Claim 6]

The display device according to claim 1, further comprising a light extraction layer disposed on the color conversion layer.

[Claim 7]

The display device according to claim 6, wherein a refractive index of the light extraction layer ranges from 1 to 1.8.

[Claim 8]

The display device according to claim 6, wherein the light extraction layer comprises a microlens structure.

[Claim 9]

A manufacturing method of a display device, comprising:

providing a circuit substrate;

forming light-emitting elements on the circuit substrate, wherein the light-emitting

elements are electrically connected to the circuit substrate, respectively;

forming a color conversion layer on a first light-emitting element of the light-emitting elements; and

forming a bank comprising multiple strip structures extending along a first direction and arranged along a second direction intersecting the first direction, wherein a first strip structure of the multiple strip structures is disposed between the first light-emitting element and a second light-emitting element of the light-emitting elements, and there is a gap between the first strip structure and the color conversion layer,

wherein no color conversion layer is disposed on the second light-emitting element, and a gap between the first strip structure and a second strip structure of the multiple strip structures disposed respectively on two opposite sides of the second light-emitting element is less than a gap between the first strip structure and a third strip structure of the multiple strip structures disposed respectively on two opposite sides of the first light-emitting element.

[Claim 10]

The manufacturing method according to claim 9, wherein the gap between the first strip structure and the color conversion layer is greater than 0.1 μm.

[Claim 11]

The manufacturing method according to claim 9, wherein the color conversion layer is a photoresistive color conversion layer.

[Claim 12]

The manufacturing method according to claim 9, wherein the step of forming the light-emitting elements on the circuit substrate is performed by a mass transfer process.

[Claim 13]

The manufacturing method according to claim 9, wherein the step of forming the color conversion layer on the first light-emitting element of the light-emitting elements is performed by a thin film deposition process, a lithography process, and an etching process.