Novaled® Top Emission PIN OLED on Reflective Bottom Contact

Novaled provides for its customers top emission-type OLEDs with doped charge carrier transport layers, optically optimized device design and proprietary materials. Top Emission PIN OLEDs are especially suited for AM applications as they allow higher aperture ratios. Such OLEDs therefore operate at lower brightness, resulting in increased lifetime and power efficiency.

Novaled® Top Emission PIN OLEDs have the following advantages for customer applications:
> good injection and transport
> extremely low operating voltage
> high efficiency
> inverted and non-inverted stacks
> possible integration onto opaque substrates
> suitable for flexible displays based on metallic foils etc.
> tailored for active matrix environment

The top emission PIN OLEDs are especially suited for AM-application because of the high efficiency and long lifetime. Top emission AM-solutions allow for higher aperture ratios, therefore the OLED can be operated at a lower brightness and the lifetime and power efficiency are increased. We have achieved the following R&D results:

A high-efficiency deep green top-emission device with 108 cd/A and 82 lm/W at a brightness of 1,000 cd/m². The colour coordinates of 0.32/0.65 enable high-end display applications based on AM-OLED.
A high efficiency deep red top emission device with 31 cd/A and 19 lm/W at a brightness of 1,000 cd/m². The colour coordinates of 0.68/0.31 enable high-end display applications based on AM-OLED.

A high efficiency reddish orange top emission device with 65 cd/A and 44 lm/W at a brightness of 1,000 cd/m². The colour coordinates of 0.64/0.36 enable high-end display and signage applications.
A high efficiency deep blue top emission device with 7.1 cd/A and 5.8 lm/W at a brightness of 1,000 cd/m². The colour coordinates of 0.14/0.04 enable high-end display applications based on AM-OLED.