

X- and T-Type Integrated Diffusing Reflectors

Brighter, easier-to-read displays make mobile phones more useful in a wider variety of environments. One way to improve the brightness of a display is to increase the reflective qualities of its pixels.

Philips uses a unique technology, called Integrated Diffusing Reflector (IDR) to improve the reflective brightness of its color TFT displays. X- and T-type IDR profiles generate maximum light reflection in North/South and East/West viewing directions, increasing the light output by as much as 40%.

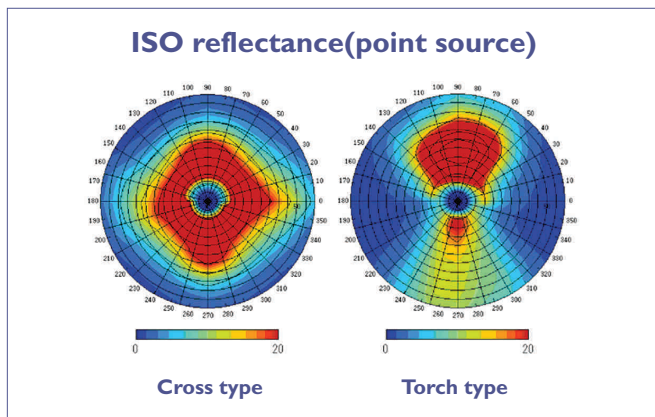


Figure 1: ISO reflectance performance of test modules with X-type & T-type IDR design

Advantages

- Customizable Reflector Designs for maximum light-output in desired 1, 2 or 4 directions
- Up to 40% more light-output and contrast in reflective mode in preferred directions
- Rainbow-free reflection design build-in

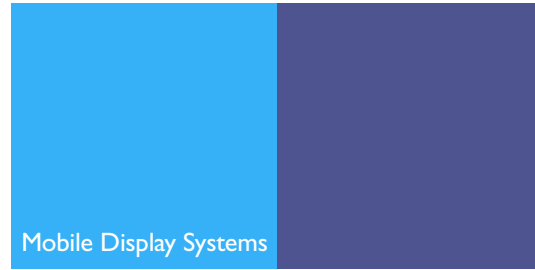
Maturity level

- Ready for Mass Production (X-type IDR)
- Design Rules are available

Applications

- Transflective Displays in Mobile Phones, PDAs
- TFT sub displays in clam-shell phones

Customizable reflectors for up to 40% increase in display brightness



Principle of the technology

The X-type reflector delivers a reflective image in portrait and landscape modes that is 40% brighter outdoors. It has scattering profiles for all four directions and offers sufficient randomness for low interference reflection. X-type reflectors are also appropriate for ISO-CR performance with an X-shape.

The T-type reflector is a new IDR structure that dramatically improves reflective brightness in a single direction. It offers the right level of randomness and a center shifted slope distribution to create a brightness increase that can be measured in the hundreds of percent. For added flexibility, the scattering profile is fully adjustable.

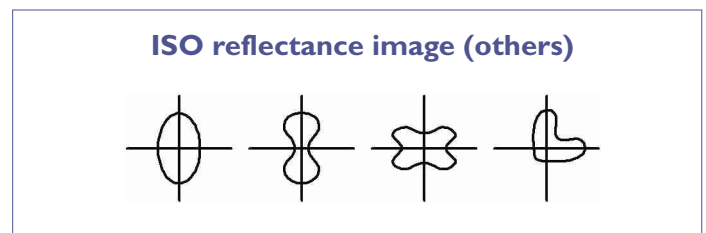


Figure 2: Available ISO reflectance image (example). We can customize directivity for application.

PHILIPS

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