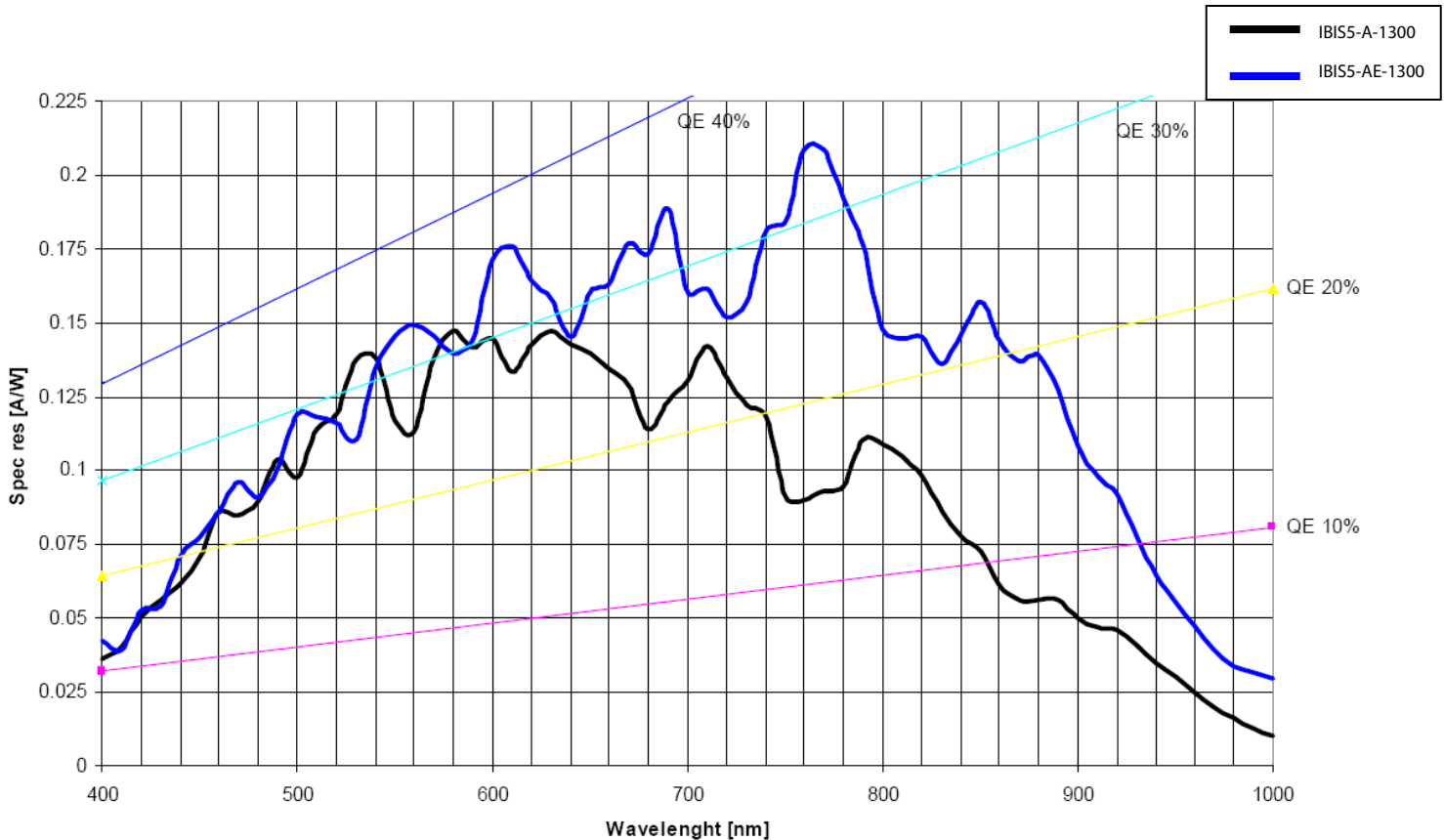


Spectral response characteristics of IBIS5-A-1300 and IBIS5-AE-1300 sensors

The IBIS5-AE-1300 is processed on a thicker epitaxial Si layer featuring a superb sensitivity in the NIR (Near Infra Red) wavelengths (700-900 nm). The curve is measured directly on the pixels. It includes effects of non-sensitive areas in the pixel, e.g., interconnection lines. The sensor is light sensitive between 400 and 1000 nm. The peak QE * FF is 30% approximately around 650 nm. In view of a fill factor of 40%, the QE is thus close to 75% between 500 and 700 nm.

The IBIS5-AE-1300 has superior response in the NIR region (700-900 nm). The spectral response characteristic for the IBIS5-A-1300 and the IBIS5-AE-1300 is shown below:



The IBIS5-A-1300 and IBIS5-AE-1300 sensor comparison

The IBIS5-AE-1300 is processed on a thicker epitaxial Si layer featuring a superb sensitivity in the NIR (Near Infra Red) wavelengths (700-900 nm). The spectral response curves of the two IBIS5-A-1300 image sensors are shown at the image above. As many machine vision applications use light sources in the NIR, the IBIS5-AE-1300 sensor has a significant sensitivity advantage in the NIR. A drawback of the thicker epitaxial layer is a slight performance decrease in MTF (Modular Transfer Function or electrical pixel to pixel cross-talk) as indicated in the table below.

| MTF comparison | | | |
|----------------|------------|--------------|---------------|
| Direction | Wavelength | IBIS5-A-1300 | IBIS5-AE-1300 |
| Horizontal | 600 | 0,58 | 0,37 |
| Horizontal | 700 | | 0,18 |
| Horizontal | 800 | | 0,16 |
| Horizontal | 900 | | 0,07 |
| Vertical | 600 | 0,53 | 0,26 |
| Vertical | 700 | | 0,16 |
| Vertical | 800 | | 0,13 |
| Vertical | 900 | | 0,11 |

The resulting image sharpness is hardly affected by this decreased MTF value. Both IBIS5-A-1300 and IBIS5-AE-1300 sensor versions are fully pin compatible and have identical timing and biasing.