

## Press information

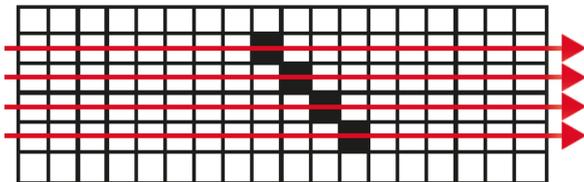
### Kyocera's MIP Displays open up new applications

#### Fast switching with minimal power consumption and excellent visibility

**Kyoto/London, July 30<sup>th</sup>, 2020.** Kyocera launches with the latest MIP Technology (Memory in Pixel) a new solution for LCDs on the market. The Japanese ceramic expert combines three essential factors: The displays are outstanding with low power consumption, excellent image quality and fast switching times. The technology allows new applications, like smart watches, healthcare devices, sub displays of DSLR or IC recorders.

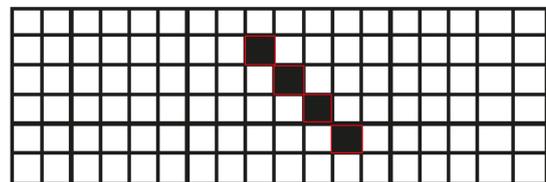
#### Low Power consumption due to built-in bit pixel memory and direct addressing.

To expand the battery lifetime all pixels include a SRAM memory. This results in a low power consumption for static image down to 5 $\mu$ W. By the power saving pixel selection method, only the selected pixel were driven. Which is different to the line selection method.



Line selection method:

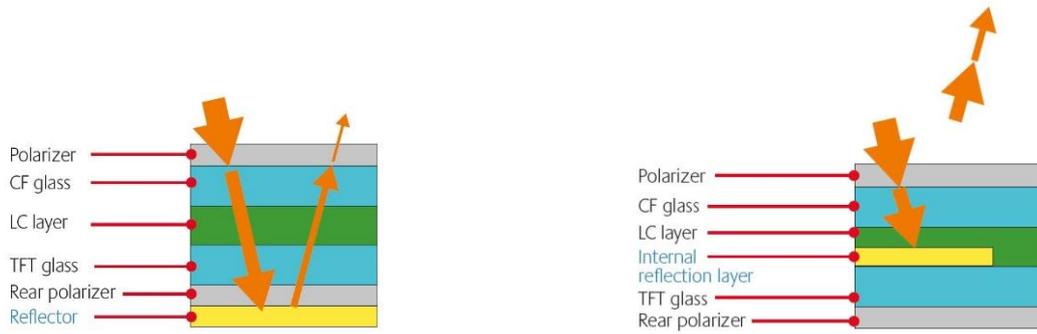
Power consumption based on the number  
of lines



Pixel selection method:

Power consumption based on the number  
of pixel

With wide viewing angle, high contrast and the avoidance of parallax shadows an excellent visibility and readability is achieved. Compared to conventional displays the reflection layer is integrated inside. Therefore, the light must only pass twice times a polarizer. This is an advantage for readability at bright sunlight and outdoor usage.



Passive Display



MIP Display

### Technical Data

Parts No.	TN010AANVNANN	TN0103ANVNANN	TN0181ANVNANN	TN0216ANVNANN
Image				
Display size [Inch]	1.04	1.03	1.81	2.16
Shape	octagon	rectangle	rectangle	rectangle
Display Mode	black/white	black/white	black/white	black/white
Resolution [Pixel]	176 x 176	128 x 128	256 x 256	320 x 176
Dot Pitch [μm]	150.5 x 150.5	145 x 145	127 x 127	150 x 150
Outline [mm]	29.5 x 31.0	22.0 x 24.3	35.9 x 38.2	51.1 x 31.9
Thickness [mm]	1.42	1.41	1.41	1.35
Voltage [V]	3.0 ± 0.3	3.3 ± 0.3	3.3 ± 0.3	3.3 ± 0.3
Power Consumption typ. [μW] (fixed screen)	5	10	10	12
Power consumption typ. [μW] (Rewriting)	10	35	75	95
Operating Temperature	-20 ~ 70°C	-20 ~ 70°C	-20 ~ 70°C	-20 ~ 70°C



For more information on Kyocera: [www.kyocera.co.uk](http://www.kyocera.co.uk)

## About Kyocera

Headquartered in Kyoto, Japan, Kyocera Corporation is one of the world's leading manufacturers of fine ceramic components for the technology industry. The strategically important divisions in the Kyocera Group, which is comprised of 298 subsidiaries (as of March 31, 2020), are information and communications technologies, products which increase quality of life, and environmentally friendly products. The technology group is also one of the most experienced producers of smart energy systems worldwide, with more than 40 years of know-how in the industry.

The company is ranked #549 on Forbes magazine's 2020 "Global 2000" listing of the world's largest publicly traded companies. With a global workforce of over 75,500 employees, Kyocera posted sales revenue of approximately €13,33 billion in fiscal year 2019/2020. The products marketed by the company in Europe include printers, digital copying systems, semiconductor-, fine ceramic-, automotive- and electronic components as well as printing devices and ceramic kitchen products. The Kyocera Group has two independent companies in the United Kingdom: Kyocera Fineceramics Ltd. and Kyocera Document Solutions.

The company also takes an active interest in cultural affairs. The Kyoto Prize, a prominent international award, is presented each year by the Inamori Foundation — established by Kyocera founder Dr. Kazuo Inamori — to individuals worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (converted at approximately €828,000 per prize category).

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