

N670X Series

Ultra-Slim, Undecoded 2D Imager, SR (Standard Range) and HD (High Density) Optics, Advanced Laser and LED Aimers

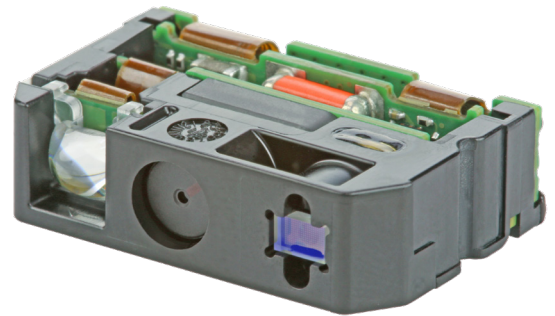
The N670X Series 2D barcode scan engine is Honeywell's slimmest 2D imager. It is designed to provide higher performance and reliability, simplify integration into mobile devices, and enable increased barcode scanning speeds to meet higher-volume application requirements.

Parallel or MIPI interface availability helps simplify integration into mobile devices that require the most current, as well as traditional, processor interfaces. Its compact dimensions (6,8 mm [0.27 in] height x 16,2 mm [0.64 in] depth) free up more room for other technology integration.

Read range and readability have been leveled up in the N670X Series. Based on a 1 Mpx global shutter sensor, it can read Code 39 20 mils at 0,8 m [31.5 in] distance (SR optics typical read range) and provides an increased read range by 40% compared to its predecessor. Its white LED illumination enhances image capture accuracy while the HD optics allow reading of higher resolution codes (down to 2.5 mils on Code 39 1D barcodes and down to 5 mils Data Matrix and QR barcodes). Equipped with its HD Optics, the N670X can read the new DotCode for tobacco products traceability down to a resolution of 5 mils.

With notable maximum motion tolerance of 6 m/s [236 in/s], the N670X Series can read moving barcodes, enabling increased scanning speed and productivity. The choice of high brightness LED (2X brighter than the current system) and laser aiming systems provides the flexibility to better suit customer application requirements and environments while further improving the aimer visibility for the users. The lower typical power consumption (210 mA at 3.6 V, maximum) increases the battery life provided by a single charge.

This product is electrically backward-compatible with Honeywell's N660X Series and N360X Series, which all use the same connector, reducing integration time and design costs while increasing design flexibility and choice. All three scan engine families are considerably slim and can fit in compact enclosures, enabling you to offer two different levels of barcode



N670X Series

scanning performance to your customers without a housing change or additional accessory design.

The N670X can help the enterprise mobility, tablet, sled and wearable device maker lead the way in offering products that may exceed general industry standards pertaining to scanning performance, reliability and integration flexibility. Built on Honeywell's latest decoding and imaging technology, this product is backed up by a savvy engineering team readily available to offer you support for your integration needs.

Potential applications include use in professional-grade mobile devices such as tablets, wearable scanners, mobile terminals, accessories in retail stores, warehouses, and healthcare facilities, as well as delivery, pick-up/drop-off, and field servicing.

FEATURES & BENEFITS

- At 6,8 mm, the slim height makes it easier to fit today's and tomorrow's compact devices.
- Wider operational temperature range increases potential applications.
- Available with two optics: SR optics read UPC codes up to 573 mm (22.5 in), and HD optics enable reading of DotCode, 2,5 mil C39, and 5 mil Data Matrix high resolution codes.
- Delivers motion tolerance of up to 6 m/s, enabling operational effectiveness.
- Lower power consumption increases battery life.
- Compatible with Honeywell's N660X Series and N360X Series for reduced integration time and increased design flexibility.
- Parallel or MIPI interface availability helps simplify integration.
- Choice of high brightness LED and laser aiming systems to better suit application requirements while improving aimer visibility.
- Supports Honeywell optional functionalities such as OCR, Easy Parse for driving licenses, boarding passes or automotive parts.

N670X Series Technical Specifications

| TABLE 1. MECHANICAL | |
|------------------------|---|
| Characteristic | Parameter |
| DIMENSIONS (H X W X D) | 6,8 mm x 23,5 mm x 16,2 mm [0.27 in x 0.93 in x 0.64 in] |
| WEIGHT | 3 g [0.11 oz] |
| INTERFACE | parallel or MIPI |

| TABLE 2. ELECTRICAL | |
|---------------------|--|
| Characteristic | Parameter |
| INPUT VOLTAGE | 3.0 V to 3.6 V |
| TYPICAL CURRENT | laser aimer: 210 mA LED aimer: 210 mA |

| TABLE 3. ENVIRONMENTAL | |
|---|---|
| Characteristic | Parameter |
| OPERATING TEMPERATURE ¹ | -30°C to 60°C [-22°F to 140°F] |
| STORAGE TEMPERATURE | -40°C to 70°C [-40°F to 158°F] |
| HUMIDITY (OPERATING AND STORAGE) | up to 95% RH, non-condensing at 60°C [140°F] |
| SHOCK | 3500 G for 0.4 ms at 23°C [73°F] |
| VIBRATION | 3 axes, 1 hour per axis: 2,54 cm [1 in] peak-to-peak displacement (5 Hz to 13 Hz), 10 G acceleration (13 Hz to 500 Hz), 1 G acceleration (500 Hz to 2,000 Hz) |
| AMBIENT LIGHT ² | 0 lux to 100,000 lux (total darkness to bright sunlight) |
| MEAN TIME BETWEEN FAILURE (MTBF) ³ | 375,000 hr (with laser aimer) >2,500,000 hr (with LED aimer) |

LASER LIGHT-DO NOT STARE INTO BEAM
RAYONNEMENT LASER-NE PAS REGARDER
DANS LE FAISCEAU. MAX. 1 mW: 650 nm.
 IEC 60825-1:2007 and IEC 60825-1:2014.
 Pulse duration of 16.8 mSec. Complies with 21CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.
CLASS 2 LASER PRODUCT.
APPAREIL À LASER DE CLASSE 2.




Figure 1. Advanced Red Laser Aimer



Figure 2. High Brightness Green LED Aimer



| TABLE 4. PERFORMANCE | |
|----------------------|--|
| Characteristic | Parameter |
| SENSOR | 1280 X 800 global shutter |
| ILLUMINATION | white or red LED: exempt risk group |
| OPTICS | SR (standard range), HD (high density) |
| AIMING | advanced red laser: cross target and framers high brightness green LED: cross target or straight line |
| TYPICAL FRAME RATE | up to 60 frames/s |
| MOTION TOLERANCE | 600 cm/s [236 in/s] maximum 400 cm/s [157 in/s] typical |
| FIELD OF VIEW | horizontal: 48°, vertical: 31° |
| SCAN ANGLES | tilt: 360°, pitch: ±60°, skew: ±60° |
| SYMBOL CONTRAST | 20% minimum print contrast ratio |
| RESOLUTION | SR optics: 3 mils C39 (1D), 7 mils Data Matrix (2D), 7 mils QR (2D), 4 mils PDF 417 (2D stacked) HD optics: 2,5 mils C39 (1D), 5 mils Data Matrix, 5 mils QR (2D), 4 mils PDF417 (2D stacked) |
| WARRANTY | 15-month limited warranty; the warranty period starts at date of shipment from Honeywell to customer |

| TABLE 5. SYMBOLOGIES | |
|----------------------|---|
| Linear: | Codabar, Code 11, Code 2 of 5, Code 39, Code 93 and 93i, EAN/JAN-13, EAN/JAN 8, IATA Code 2 of 5, Interleaved 2 of 5, Matrix 2 of 5, MSI, GS1 Databar, UPC-A, UPC E, UPC-A/EAN-13 with Extended Coupon Code, Coupon GS1 Code 32(PARAF), EAN-UCC Emulation, GS1 Data Bar |
| 2D Stacked: | Codablock A, Codablock F, PDF417, MicroPDF417 |
| 2D Matrix: | Aztec Code, Data Matrix, MaxiCode, QR Code, Chinese Sensible (Han Xin), Grid Matrix, Dot Code |
| Postal: | Australian Post, British Post, Canadian Post, China Post, Japanese Post, Korea Post, Netherlands Post, Planet Code, Postnet |

| TABLE 6. N670XSR READ RANGES (TYPICAL, WHITE ILLUMINATION) ⁴ | | | |
|---|-------------------------|------------------------|-----------------|
| Symbology | Near Distance (mm [in]) | Far Distance (mm [in]) | Delta (mm [in]) |
| 13 MIL UPC | 44 [1.73] | 573 [22.5] | 529 [20.77] |
| 5 MIL C39 | 70 [2.76] | 301 [11.85] | 231 [9.09] |
| 10 MIL C39 | 40 [1.57] | 517 [20.3] | 477 [18.73] |
| 20 MIL C39 | 44 [1.73] | 800 [31.5] | 756 [29.77] |
| 15 MIL C128 | 42 [1.65] | 650 [25.6] | 608 [23.95] |
| 10 MIL DM | 72 [2.84] | 297 [11.7] | 225 [8.86] |
| 6,7 MIL PDF417 | 84 [3.3] | 244 [9.6] | 160 [6.3] |
| 15 MIL QR | 39 [1.54] | 414 [16.3] | 375 [14.76] |

| TABLE 7. N670XHD READ RANGES (TYPICAL, WHITE ILLUMINATION) ⁴ | | | |
|---|-------------------------|------------------------|-----------------|
| Symbology | Near Distance (mm [in]) | Far Distance (mm [in]) | Delta (mm [in]) |
| 13 MIL UPC | 38 [1.5] | 405 [15.9] | 367 [14.4] |
| 3 MIL C39 | 66 [2.6] | 183 [7.2] | 117 [4.6] |
| 5 MIL C39 | 53 [2.1] | 265 [10.4] | 212 [8.3] |
| 6,7 MIL DM | 72 [2.8] | 180 [7.1] | 108 [4.3] |
| 10 MIL DM | 59 [2.3] | 248 [9.8] | 189 [7.5] |
| 5 MIL PDF | 74 [2.9] | 186 [7.3] | 112 [4.4] |
| 6,7 MIL PDF | 59 [2.3] | 238 [9.4] | 179 [7.1] |
| 6,7 MIL QR | 72 [2.8] | 163 [6.4] | 91 [3.6] |
| 15 MIL QR | 27 [1.1] | 308 [12.1] | 281 [11] |

- 1 Extreme temperatures will reduce the depth of field.
- 2 Extreme ambient light conditions will reduce the depth of field.
- 3 Based on MIL-HDBK-217F (released December 1, 1991). The calculation is based on the part count method for the Ground Benign (GB) environmental conditions.
- 4 Barcode quality and environmental conditions may affect performance.

ADDITIONAL INFORMATION

- Integration Manual is available upon request; contact your Honeywell representative
- For a listing of common compliance approvals and certifications, please visit <https://aidc.honeywell.com/Pages/product-certifications.aspx>

NOTICE

MISUSE OF DOCUMENTATION

- The information presented in this datasheet is for reference only. Do not use this document as a product installation guide.
- An installation Manual is available by request (<https://sensing.honeywell.com/>). Please contact your Honeywell sales representative.

Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items that Honeywell, in its sole discretion, finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer's sole responsibility to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, Honeywell assumes no responsibility for its use.

Find out more

To learn more about Honeywell's scan engines and barcode decoding software, visit sensing.honeywell.com.

Honeywell Sensing and Internet of Things

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