**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 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 57.3 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 | -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], 10 G acceleration (3 Hz to 600 Hz), 1 G acceleration (500 Hz to 2000 Hz)
AMBIENT LIGHT | 0 lux to 100,000 lux (total darkness to bright sunlight)
MEAN TIME BETWEEN FAILURE (MTBF) | 3,750,000 hr (with laser aimer), 2,500,000 hr (with LED aimer)

TABLE 4. PERFORMANCE
Characteristic | Parameter
--- | ---
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 PDF 417 (2D stacked)
WARRANTY | 15-month limited warranty; the warranty period begins at date of shipment from Honeywell to customer

TABLE 5. SYMBOLOGIES
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, Chinese Post, Korean Post, Netherlands Post, Planet Code, Postnet

TABLE 6. N670XS SR READ RANGES (TYPICAL, WHITE ILLUMINATION)*
<table>
<thead>
<tr>
<th>Symbology</th>
<th>Near Distance (mm [in])</th>
<th>Far Distance (mm [in])</th>
<th>Delta (mm [in])</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 MIL UPC</td>
<td>44 (1.73)</td>
<td>573 (22.5)</td>
<td>529 (20.77)</td>
</tr>
<tr>
<td>5 MIL C39</td>
<td>70 (2.76)</td>
<td>301 (11.85)</td>
<td>231 (9.09)</td>
</tr>
<tr>
<td>10 MIL C39</td>
<td>40 (1.57)</td>
<td>517 (20.3)</td>
<td>477 (18.73)</td>
</tr>
<tr>
<td>20 MIL C39</td>
<td>44 (1.73)</td>
<td>800 (31.5)</td>
<td>756 (29.77)</td>
</tr>
<tr>
<td>15 MIL C128</td>
<td>42 (1.65)</td>
<td>650 (25.6)</td>
<td>608 (23.95)</td>
</tr>
<tr>
<td>10 MIL DM</td>
<td>72 (2.84)</td>
<td>297 (11.7)</td>
<td>225 (8.86)</td>
</tr>
<tr>
<td>6.7 MIL PDF417</td>
<td>84 (3.3)</td>
<td>244 (9.6)</td>
<td>160 (6.3)</td>
</tr>
<tr>
<td>15 MIL QR</td>
<td>39 (1.54)</td>
<td>414 (16.3)</td>
<td>375 (14.76)</td>
</tr>
</tbody>
</table>

TABLE 7. N670XHD READ RANGES (TYPICAL, WHITE ILLUMINATION)*
<table>
<thead>
<tr>
<th>Symbology</th>
<th>Near Distance (mm [in])</th>
<th>Far Distance (mm [in])</th>
<th>Delta (mm [in])</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 MIL UPC</td>
<td>38 (1.5)</td>
<td>405 (15.9)</td>
<td>367 (14.4)</td>
</tr>
<tr>
<td>3 MIL C39</td>
<td>66 (2.6)</td>
<td>183 (7.2)</td>
<td>117 (4.6)</td>
</tr>
<tr>
<td>5 MIL C39</td>
<td>53 (2.1)</td>
<td>265 (10.4)</td>
<td>212 (8.3)</td>
</tr>
<tr>
<td>6.7 MIL DM</td>
<td>72 (2.8)</td>
<td>180 (7.1)</td>
<td>108 (4.3)</td>
</tr>
<tr>
<td>10 MIL DM</td>
<td>59 (2.3)</td>
<td>248 (9.8)</td>
<td>189 (7.5)</td>
</tr>
<tr>
<td>5 MIL PDF</td>
<td>74 (2.9)</td>
<td>186 (7.3)</td>
<td>179 (7.1)</td>
</tr>
<tr>
<td>6.7 MIL PDF</td>
<td>59 (2.3)</td>
<td>238 (9.4)</td>
<td>179 (7.1)</td>
</tr>
<tr>
<td>6.7 MIL QR</td>
<td>72 (2.8)</td>
<td>163 (6.4)</td>
<td>91 (3.6)</td>
</tr>
<tr>
<td>15 MIL QR</td>
<td>27 (1.1)</td>
<td>308 (12.1)</td>
<td>281 (11.1)</td>
</tr>
</tbody>
</table>

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.
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
9680 Old Bailes Road
Fort Mill, SC 29707
honeywell.com