EnduroSLC™ Technology
Superior Data Retention and Endurance

EnduroSLC™ is a proprietary 3D NAND management technology developed by Greenliant for high reliability applications requiring superior data retention and endurance in extreme temperature, high stress environments. With advanced hardware ECC capabilities and NAND flash management algorithms, EnduroSLC Technology significantly extends the write endurance of 1-bit-per-cell (SLC) SSDs reaching industry leading 250K+ program-erase (P/E) cycles. EnduroSLC enabled products meet robust data retention requirements under complex temperature conditions and support high cross-temperature ranges between data programming and reading. Due to its substantially lower bit error rate, an EnduroSLC SSD provides better consistency in read/write performance throughout product lifetime.

EnduroSLC™ Advantage

EnduroSLC SSDs offer a high reliability flash storage solution with ultra-robust data retention and ultra-high write endurance that exceeds capabilities of legacy, planar SLC NAND based products. Available in industry standard mSATA, M.2, CFast, 2.5”, U.2 and BGA form factors, Greenliant’s EX Series ArmourDrive™, NANDrive™ and Enterprise SSDs with EnduroSLC Technology are ideal for embedded and enterprise systems operating in extreme temperature environments and requiring ultra-high endurance at a lower cost per GByte.

In contrast to pseudo-SLC (pSLC) products that typically do not exceed 30K P/E cycles, EnduroSLC SSDs offer a minimum endurance of 50K followed by 100K and unparalleled 250K+ endurance options (ultra-high endurance of 300K and above is available upon request). NANDrive BGA SSDs with EnduroSLC Technology can withstand multiple passes of SMT high temperature process without losing data. System designers can take advantage of the variety of the most popular form factors supported by Greenliant’s EnduroSLC SSDs that will meet and exceed the needs of their mission critical applications.

Endurance Comparison

EX Series endurance (P/E cycles) compared to MX Series with 3D MLC NAND

Applications

- Industrial automation and control
- Telematics
- Data recorder
- Industrial gaming
- Transportation
- HMI panel
- Point-of-Sale terminal
- VoIP gateway
- Wireless base station
- Router / Switch
- Aerospace
- Industrial PC / Single-board computer
- Medical equipment
- Security system
- Test and measurement equipment
- Robotics

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## EX Series SSDs Enabled by EnduroSLC Technology

### NANDrive™ — Small Form Factor BGA SSDs
Ideal for Write Intensive Applications and Space Constrained Designs

<table>
<thead>
<tr>
<th>NANDrive</th>
<th>eMMC</th>
<th>SATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>GLS85VM1xxxG/Q/E</td>
<td>GLS85LS1xxxG/Q/E</td>
</tr>
<tr>
<td>Interface / Endurance</td>
<td>eMMC 5.1 / 50 / 100 / 250K+*</td>
<td>SATA 6Gb/s / 50 / 100 / 250K+*</td>
</tr>
<tr>
<td>Capacity</td>
<td>2GB, 4GB (100-ball) 2GB, 4GB, 8GB, 16GB, 32GB, 64GB (153-ball)</td>
<td>2GB, 4GB, 8GB, 16GB, 32GB, 64GB, 128GB</td>
</tr>
<tr>
<td>Package Type / Dimensions (mm)</td>
<td>100-ball LBGA / 14 x 18 x 1.40 153-ball LFBGA / 11.5 x 13 x 1.35</td>
<td>145-ball BGA / 14 x 24 x 1.50</td>
</tr>
</tbody>
</table>

*Program-erase cycles: 250K, or higher, offered up to 16GB for eMMC and 64GB for SATA NANDrive

### ArmourDrive™ — High Reliability Removable SSDs
Industrial SSDs Optimized for Ultra High Write Endurance

<table>
<thead>
<tr>
<th>ArmourDrive</th>
<th>mSATA</th>
<th>SATA M.2 2242</th>
<th>SATA M.2 2280</th>
<th>SATA 2.5&quot;</th>
<th>CFast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>GLS86FCxxxGx</td>
<td>GLS87CAxxxGx</td>
<td>GLS87AAXxxGx</td>
<td>GLS89AAXxxGx</td>
<td>GLS91CAxxxGx</td>
</tr>
<tr>
<td>Interface / Endurance</td>
<td>SATA 6Gb/s / 50 / 100 / 250K+**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity</td>
<td>8GB, 16GB, 32GB, 64GB, 128GB</td>
<td>8GB, 16GB, 32GB, 64GB, 128GB</td>
<td>8GB, 16GB, 32GB, 64GB, 128GB, 256GB</td>
<td>16GB, 32GB, 64GB, 128GB, 256GB</td>
<td>8GB, 16GB, 32GB, 64GB, 128GB</td>
</tr>
<tr>
<td>Form Factor / Dimensions (mm)</td>
<td>JEDEC MO-300 / 29.85 x 50.80 x 4.85</td>
<td>M.2 2242 SS / 22 x 42 x 2.38</td>
<td>M.2 2280 SS / 22 x 80 x 2.38</td>
<td>2.5-inch / 100 x 69.85 x 7.00</td>
<td>CFast / 36.40 x 42.85 x 3.30</td>
</tr>
</tbody>
</table>

**Program-erase cycles: 250K, or higher, offered up to 128GB

### Industrial Enterprise — High Capacity SSDs
Designed for High Performance, High Reliability Computing Systems

<table>
<thead>
<tr>
<th>Industrial Enterprise</th>
<th>SATA 2.5&quot;</th>
<th>NVMe U.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>G32UxxxP</td>
<td>G72UxxxP</td>
</tr>
<tr>
<td>Interface / Endurance</td>
<td>SATA 6Gb/s / 30 DWPD for 5 years***</td>
<td>PCIe Gen3x4 / 30 DWPD for 5 years***</td>
</tr>
<tr>
<td>Capacity</td>
<td>800GB, 960GB, 1.6TB, 1.92TB</td>
<td></td>
</tr>
<tr>
<td>Form Factor / Dimensions (mm)</td>
<td>2.5-inch / 100.5 x 68.5 x 9.5</td>
<td></td>
</tr>
</tbody>
</table>

***Drive Writes Per Day (DWPD)

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**NANDrive FAQs:** [www.greenliant.com/nandrive-faqs](http://www.greenliant.com/nandrive-faqs)

**ArmourDrive FAQs:** [www.greenliant.com/armourdrive-faqs](http://www.greenliant.com/armourdrive-faqs)

**Long-Term Availability:** [www.greenliant.com/support/#LTA-program](http://www.greenliant.com/support/#LTA-program)

For more information, contact your Greenliant representative: [www.greenliant.com/sales](http://www.greenliant.com/sales)