



## **Princeton Industrial Solid State Disk Drive Princeton Lynx Solid State Disk Drive**

**SSD Version Code: C2**

### **Specifications**

#### **Document Revision History**

Rev 1.0, Dec 2009 – Initial release.

Rev 1.1, Jan 2010 – Fixed various typos.

Rev 1.2, Feb 2010 – Minor formatting changes.

## Product Overview

The Princeton Technology Solid-State Disk (SSD) drive is a non-volatile, high capacity data storage device. It utilizes advanced NAND-type flash memory technology to emulate the functionality of traditional mechanical hard disk drives while offering the advantages of solid-state data storage. Princeton SSD drives can be used in a wide variety of commercial and industrial applications.

## Features

- Fully compatible with devices and operating systems that support the SATA II 3.0 Gbps standard.
- Supports BCH ECC of 8 bits in 512 bytes.
- Integrated 1-port USB 2.0, 1-port SATA II, and 8-channel flash controller.
- Reliable wear-leveling algorithm for maximum flash endurance.
- Auto standby and sleep mode supported.
- Supports dynamic power management.

## Specifications

General			
Compatibility	Serial ATA 2.0 specification		
Flash Technology	NAND-type flash memory (Single Level Cell or Multi Level Cell)		
Form Factor	Standard 2.5" disk drive		
Connector Types	Standard 7+15-pin Serial ATA connector Standard mini 5-pin female USB connector		
Performance			
Interface		Serial ATA	Mini USB
Sequential Read	SLC Flash (Industrial)	170 MB/sec max.	30 MB/sec max.
	MLC Flash (Lynx)	145 MB/sec max.	30 MB/sec max.
Sequential Write	SLC Flash (Industrial)	140 MB/sec max.	25 MB/sec max.
	MLC Flash (Lynx)	90 MB/sec max.	25 MB/sec max.
Access Time	0.2 ms		
Environmental			
Standard Temp.	Operation	0°C ~ +70°C	
	Non-operation	-20°C ~ +80°C	
Wide Temp.	Operation	-40°C ~ +85°C	
	Non-operation	-50°C ~ +95°C	
Vibration	Operation max	20 G	
	Non-operation max	20 G	
Humidity	5% ~ 95% non-condensing		
Shock	1,500 G		
Reliability			
MTBF	> 2,000,000 hours		
Error Correction Code	BCH8 can correct up to 8 random error bits within 512 data bytes		

Endurance	SLC Flash (Industrial)	> 1,000,000 cycles logically determined by wear-leveling and advanced bad sector management algorithms
	MLC Flash (Lynx)	> 100,000 cycles logically determined by wear-leveling and advanced bad sector management algorithms
Data Reliability	< 1 non-recoverable error in $10^{14}$ bits read	
Data Retention	10 years	
<b>Power Consumption</b>		
Voltage	+5V $\pm$ 10%	
Read	550 mA	
Write	500 mA	
Sleep Mode	210 mA	

## Part Numbering

M<sup>1</sup>SSD<sup>2</sup>XXXXX<sup>3</sup>X<sup>4</sup>X<sup>5</sup>U<sup>6</sup>2<sup>7</sup> – C2<sup>8</sup>

1: Memory

2: Solid-State Disk

3: Capacity

004GB: 4 Gigabytes  
 008GB: 8 Gigabytes  
 016GB: 16 Gigabytes  
 032GB: 32 Gigabytes  
 064GB: 64 Gigabytes  
 128GB: 128 Gigabytes  
 256GB: 256 Gigabytes

4: Flash Type

C: MLC (Princeton Lynx)  
 I: SLC (Princeton Industrial)

5: Operating Temperature

S: Standard (0°C ~ +70°C)  
 W: Wide (-40°C ~ +85°C)

6: Interface

U: SATA + Mini USB

7: Form Factor

2: Standard 2.5" disk drive

8: Product Version Code

C2: These specifications

### Example Part Numbers

128GB, SLC (Industrial), Wide Temp, SATA + Mini USB, 2.5"	MSSD128GBIWU2-C2
64GB, MLC (Lynx), Standard Temp, SATA + Mini USB, 2.5"	MSSD064GBCSU2-C2