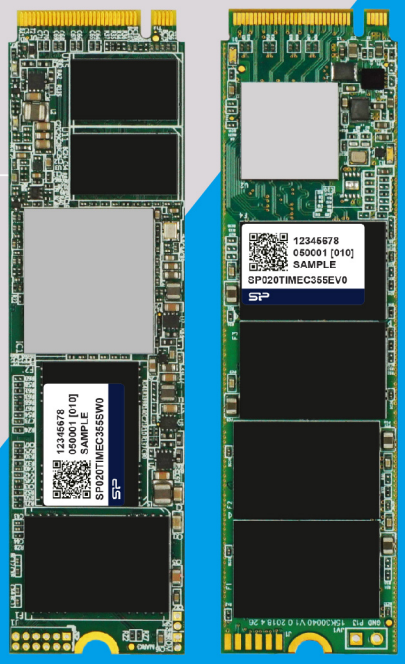
Silicon Power
INDUSTRIAL

Industrial 3D TLC NAND M.2 2280 NVMe SSD

MEC350 SERIES

PCIe Gen3x4	NVMe
3K PE Cycles	3D TLC NAND



PRODUCT FEATURES

- High-Quality 3D TLC NAND Flash Technology
- Industrial Standard NVMe 1.3 Compliant
- Global Wear Leveling and Early weak block retirement
- TRIM, NCQ, DEVSLP, Support PCIe Gen1/2/3 interface
- Lifetime Enhancements
  Direct-to-TLC and SLC Cache enhancement to ensure the optimized WAF
  Block/Page RAID function to ensure data recovery
  StaticDataRefresh to keep data integrity
- Reliable Industrial grade integrated Active PMU and complete protection design with OVP, OCP, Surge rejection and Short protection
- External DRAM to achieve the optimal sustained read/write performance (S Series)
- Power shielding firmware architecture to ensure power failure resilience
- AES256 Encryption and TCG Opal 2.0 compliant (by request)
- SP SMART Toolbox
- SP SMART Embedded and SMART IoT service (by request)

PRODUCT SUMMARY

- Capacities: 128GB, 256GB, 512GB, 1TB
- Form Factor: M.2 2280 Solid State Drive (80.0 x 22.0 x 3.5 mm)
- Compliance: Compliant with NVME1.3 Standard. Support PCIe Gen1/2/3 interface.
- Command Sets: Compliant NVMe1.3 3 standard command protocol.
- Performance:

	128GB	256GB	512GB	1TB
Sequential Read (MB/s max.)	1500	3000	3400	3300
Sequential Write (MB/s max.)	400	800	1600	2600
Random 4K Read (IOPS max.)	83000	163000	290000	320000
Random 4K Write (IOPS max.)	61000	115000	260000	298000

*Actual performance may vary based on the specific model and capacity

- Operating Temperature Range :

  Normal: 0 °C to 70 °C
  Extended: -15 °C to 85 °C (by request)
  Wide: -40 °C to 85 °C (by request)

- Storage Temperature Range: -55 °C to 95 °C
- Operating Voltage: 3.3 V ± 10%
- Power Consumption :

Unit: mA	128GB	256GB	512GB	1TB
Read (active)	1160	1790	1870	1920
Write (active)	1890	2240	2430	2430
Stand-by	230	230	230	230

*Actual performance may vary based on the specific model and capacity

(Unit: mA)

- Data Retention @40 °C: 10 Years @ Life Begin; 1 Year @ Life End
- Endurance in Tera Bytes Written (TBW)

  TBW is estimated by formula TBW= (Capacity x PE Cycles)/ (WAF x2). Assumption of guard band for the wear leveling is 2.

	128GB	256GB	512GB	1TB
TBW (guard band factor 2)	80	160	320	640

(Unit: TB)

- Mechanical (IEC-60068):

  Vibration: 15G, 10 ~ 2001Hz
  Drop: 76cm
  Shock: 1,500G@0.6ms

- LDPC ECC engine and Block/Page RAID
- Mean Time Between Failure: > =2,000,000 hours
- Data Reliability: Non-recover Read (UBER) ≤10 -16
- Serious quality control and assurance

  - 100% NAND Flash screening
  - High endurance product design with 3D TLC and pSLC product offerings
  - Implement high/low temperature dynamic burn-in in each lot production to monitor production quality to meet design specification
  - Reliability criteria compliant with international standards IEC-60068/61000

* Information might be changed or updated without notice.