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**SFF-8201**

Specification for

**2.5" Form Factor Drive Dimensions**

Rev 3.4

January 19, 2018

Secretariat: SFF TA TWG

Abstract: This specification defines the dimensions for 2.5" magnetic disk drives.

This specification provides a common reference for systems manufacturers, system integrators, and suppliers.

This specification is made available for public review, and written comments are solicited from readers. Comments received by the members will be considered for inclusion in future revisions of this specification.

The description of a connector in this specification does not assure that the specific component is actually available from connector suppliers. If such a connector is supplied it must comply with this specification to achieve interoperability between suppliers.

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### Change History

Rev 2.6 (July 18, 2012):

- Added 5.00 A1 dimension and associated text to make side mounting holes mandatory and bottom mounting holes optional.

Rev 2.7 (October 25, 2012):

- Changed < 7.00 mm to = 7.00 mm.

Rev 2.8 (January 9, 2013):

- Added height of 7.20 mm to Table 4-1.

Rev 2.9 (April 22 2013):

- Removed height of 7.20 mm from Table 4-1.
- Added note to require labeling of 7.20 mm drives.
- Changed note under Figures 4-1 and 4-2 to include 7.20 mm.
- Identified Figures 4-1, 4-2, and 4-3 to be replaced when redrawn without obsolete mounting holes.

Rev 3.0 (May 24 2013)

- Remove note requiring the labeling of 7.20 mm drives.

Rev 3.1 (July 8 2013)

- Replaced Figures 4-1, 4-2, and 4-3

Rev 3.2 (October 25, 2013)

- Corrected note on A1 7.0 mm to read A2=0.20 mm (0.008")
- Notes under Figures 4-1, 4-2, 4-3 revised to read as 7 mm

Rev 3.3 (August 30, 2014)

- Editorial changes for consistency between specifications in revised EIA-720.

Rev 3.3.1 (December 19, 2017)

- Updated to SNIA-TA SFF format.
- Added lead in requirement for mounting holes.
- Clarified mounting screw penetration.
- Moved notes into Table 3-1 cell structure.
- Changed font in Figure 3-4.

Rev 3.4 January 19, 2018

- Publication of revision 3.4.

**Foreword**

The development work on this specification was done by the SNIA SFF TWG, an industry group. Since its formation as the SFF Committee in August 1990, the membership has included a mix of companies which are leaders across the industry.

When 2 1/2" diameter disk drives were introduced, there was no commonality on external dimensions e.g. physical size, mounting locations, connector type, connector location, between vendors. The SFF Committee provided a forum for system integrators and vendors to define the form factor of disk drives.

During their definition, other activities were suggested because participants in SFF faced more challenges than the form factors. In November 1992, the charter was expanded to address any issues of general interest and concern to the storage industry. The SFF Committee became a forum for resolving industry issues that are either not addressed by the standards process or need an immediate solution.

In July 2016, the SFF Committee transitioned to SNIA (Storage Networking Industry Association), as a TA (Technology Affiliate) TWG (Technical Work Group).

Industry consensus is not a requirement to publish a specification because it is recognized that in an emerging product area, there is room for more than one approach. By making the documentation on competing proposals available, an integrator can examine the alternatives available and select the product that is felt to be most suitable.

SFF meets during the T10 (see [www.t10.org](http://www.t10.org)) and T11 (see [www.t11.org](http://www.t11.org)) weeks, and SSWGs (Specific Subject Working Groups) are held at the convenience of the participants.

Many of the specifications developed by SFF have either been incorporated into standards or adopted as standards by ANSI, EIA, JEDEC and SAE.

For those who wish to participate in the activities of the SFF TWG, the signup for membership can be found at:

<http://www.snia.org/sff/join>

The complete list of SFF Specifications which have been completed or are currently being worked on by the SFF Committee is contained in the document SFF-8000 which can be found at:

<http://www.snia.org/sff/specifications>

Suggestions for improvement of this specification will be welcome, they should be submitted to:

<http://www.snia.org/feedback>

**CONTENTS**

1. Scope	5
1.1 Application Environment	5
1.2 Copyright	5
1.3 Disclaimer	5
2. References	6
2.1 Industry Documents	6
2.2 Sources	6
2.3 Conventions	6
2.4 Definitions	6
3. General Description	7

**FIGURES**

Figure 3-1 Form Factor of 2.5" Disk Drive	9
Figure 3-2 Detail Views of 2.5" Disk Drive Form Factor	10
Figure 3-3 Required Mounting Holes of 2.5" Disk Drive	11
Figure 3-4 Length of 2.5" Disk Drive with Connector	12

**TABLES**

Table 3-1 Disk Drive Dimensions	8
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## 1. Scope

This specification defines the dimensions of 2.5" disk drives.

### 1.1 Application Environment

The environment for the 2.5" Drive Form Factor is any computer, cabinet, or enclosure connecting to one or more drives in a restricted packaging environment.

The purpose of this Specification is to provide information that will assist vendors to design products that can fit the same packaging envelope.

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Suggestions for revisions should be directed to <http://www.snia.org/feedback/>

## 2. References

### 2.1 Industry Documents

- ASME Y14.5M Geometric Dimensioning and Tolerancing

### 2.2 Sources

There are several projects active within the SFF TWG. The complete list of specifications which have been completed or are still being worked on is contained in the document SFF-8000 which can be found at <http://www.snia.org/sff/specifications>.

Copies of ANSI standards may be purchased from the InterNational Committee for Information Technology Standards (<http://www.techstreet.com/incitsgate.tpl>).

### 2.3 Conventions

The dimensioning conventions are described in ANSI-Y14.5M, Geometric Dimensioning and Tolerancing. All dimensions are in millimeters, which are the controlling dimensional units (if inches are supplied, they are for guidance only).

The ISO convention of numbering is used i.e., the thousands and higher multiples are separated by a space and a period is used as the decimal point. This is equivalent to the English/American convention of a comma and a period.

American	French	ISO
0.6	0,6	0.6
1,000	1 000	1 000
1,323,462.9	1 323 462,9	1 323 462.9

### 2.4 Definitions

For the purpose of SFF Specifications, the following definitions apply:

**Obsolete:** Dimensions identified as obsolete are for reference and may apply to existing 2.5" form factor disk drives. New 2.5" form factor disk drives are to be designed to dimensions that are not identified as obsolete.

**Optional:** This term describes features which are not required by the SFF Specification. However, if any feature defined by the SFF Specification is implemented, it shall be done in the same way as defined by the Specification. Describing a feature as optional in the text is done to assist the reader. If there is a conflict between text and tables on a feature described as optional, the table shall be accepted as being correct.

### 3. General Description

Table 3-1 specifies the dimensions for 2.5" disk drives and correlates them to the figures. Dimensions identified as obsolete are for reference and may apply to existing device features. New devices are to be designed to dimensions that are not identified as obsolete.

Figure 3-1 defines the dimensions for 2.5" disk drives and shows relationships among the dimensions.

Figure 3-2 contains detail views of the form factor.

Figure 3-3 defines the required mounting holes.

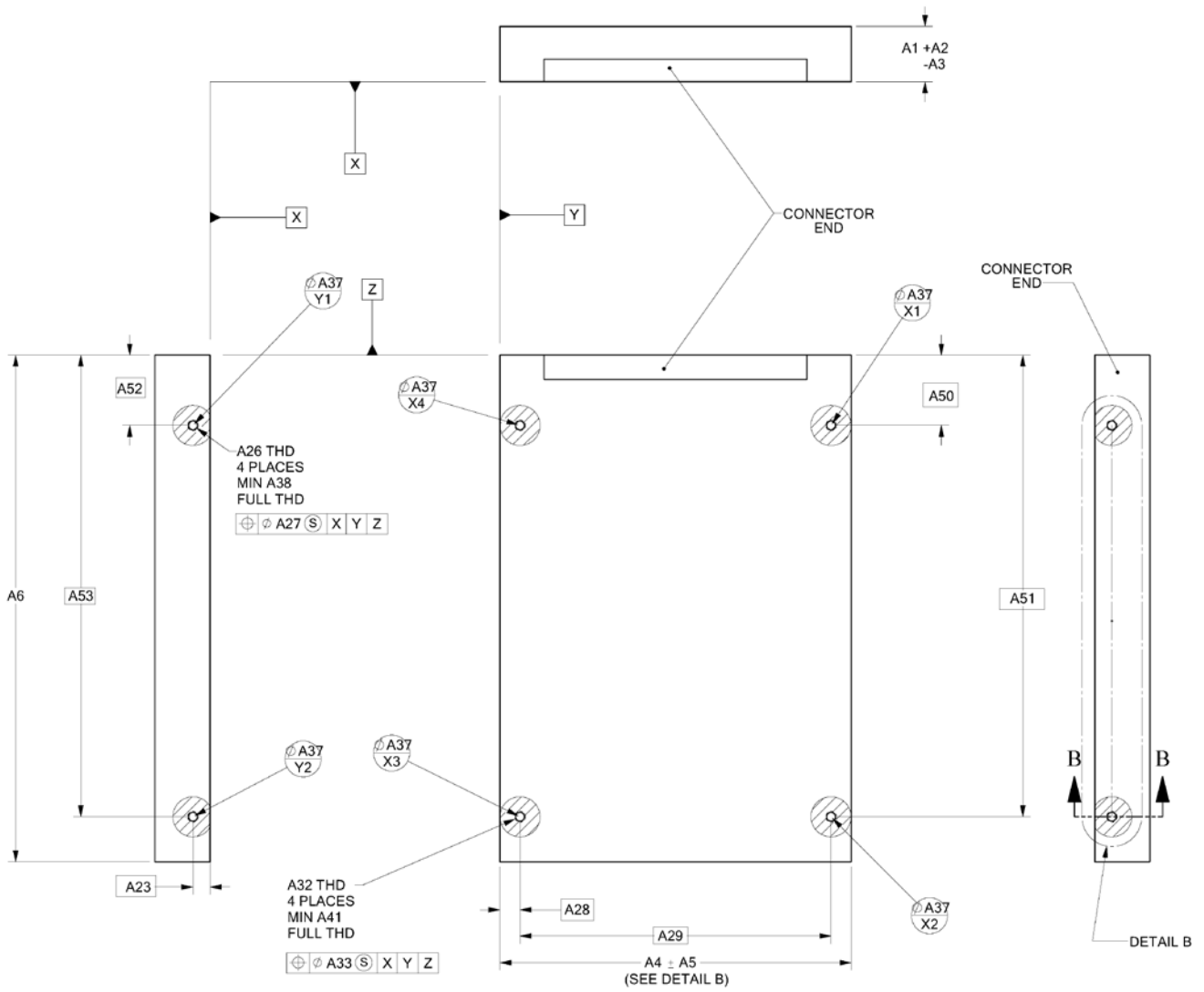
Figure 3-4 defines the length of the form factor and connector that complies with revision 2.0 or higher of this specification. See the referenced specification for connector location requirements.

Threaded holes on the form factor shall include a lead in feature. Exact configuration of the lead in is not defined since the implementation of the form factor is beyond the scope of this specification. An example lead in for a cast aluminum implementation is a countersink of 3.75 mm diameter x 90° (0.138" diameter x 90°). Appropriate information regarding recommended screw type and torque should be included in the product data sheet to enable proper mounting of the device without damaging threads.

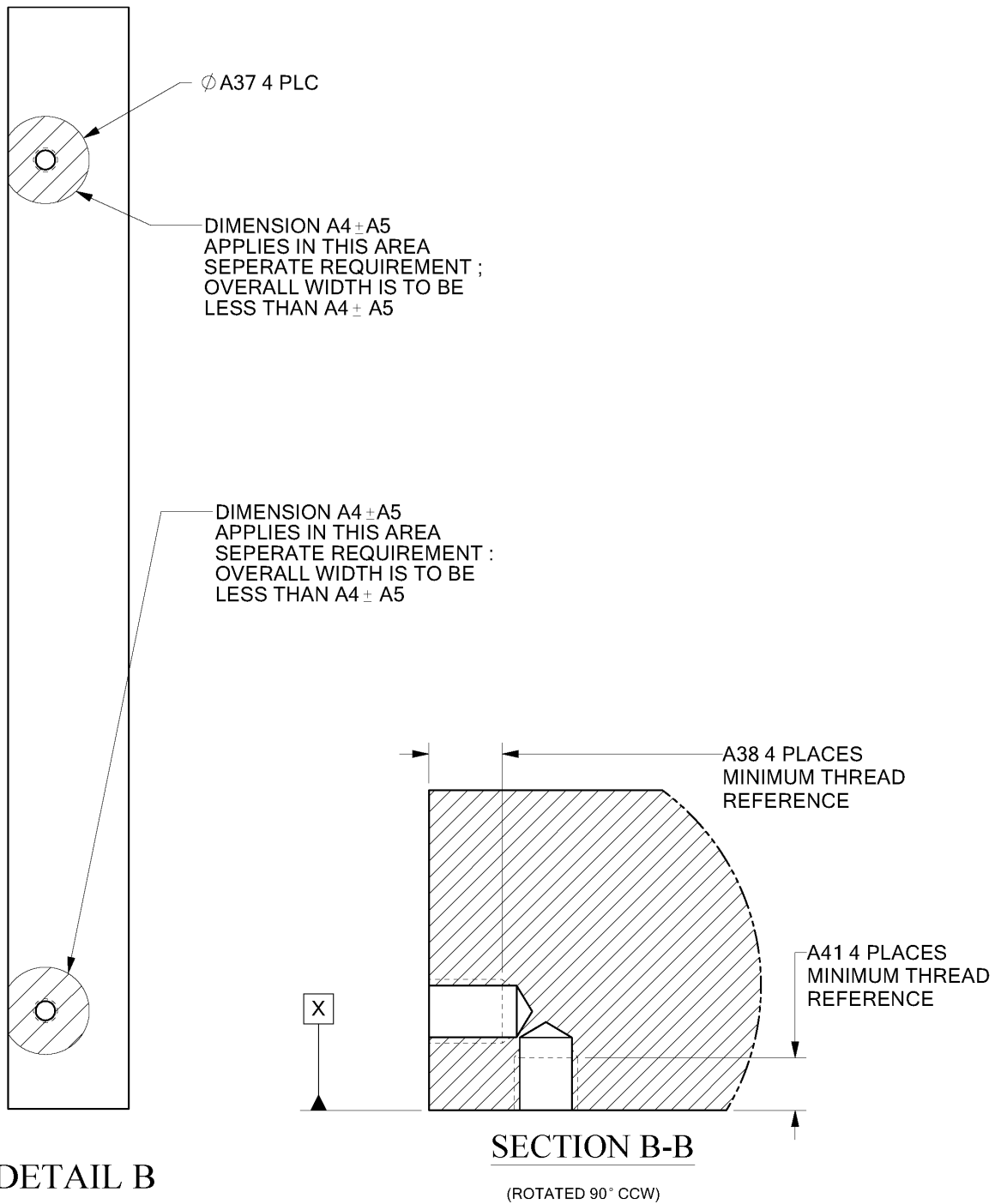
TABLE 3-1 DISK DRIVE DIMENSIONS

Dimension		Millimeters	Inches	Comments
A 1		19.05	0.750	
A 1		17.00	0.669	
A 1		15.00	0.591	
A 1		12.70	0.500	
A 1		10.50	0.413	
A 1		9.50	0.374	A2=A3=0.20 mm
A 1		8.47	0.333	
A 1		7.00	0.276	A2=0.20 mm
A 1		5.00	0.197	A2=A3=0.20 mm
A 2		0.00	0.000	
A 3		0.50	0.020	
A 4		69.85	2.750	
A 5		0.25	0.010	
A 6	Max	101.85	4.010	Obsolete
A 6	Max	100.45	3.955	New requirement
A10		100.20	3.945	SFF-8212
A11		100.50	3.957	SFF-8223
A12		110.20	4.339	SFF-8222
A23		3.00	0.118	
A24		34.93	1.375	Obsolete
A25		38.10	1.500	Obsolete
A26		M3	N/A	
A27		0.50	0.020	
A28		4.07	0.160	
A29		61.72	2.430	
A30		34.93	1.375	Obsolete
A31		38.10	1.500	Obsolete
A33		0.50	0.020	
A37		8.00	0.315	
A50		14.00	0.551	
A51		90.60	3.567	
A52		14.00	0.551	
A53		90.60	3.567	
<b>Threads</b>				
A32		M3		Thread size
A38		2.00	0.079	Maximum fastener penetration for A1 ≤ 7 mm
A38		3.00	0.118	Maximum fastener penetration for A1 > 7 mm
A41		2.50	0.098	Maximum fastener penetration
<b>NOTES:</b>				
1. (A4+A5) represents the maximum width of the drive, 70.10 mm.				
2. Dimensions A10, A11, and A12 are based on a nominal form factor length of 100.20 mm.				
3. Unless diameter targets indicate specific areas, dimensions for a surface apply to a single point minimum. If a surface is not flat, the dimension applies to the highest raised location on that surface.				
4. Information in Comments column take precedence over the stated dimensions.				
5. Dimensions A38 and A41 apply to fasteners used to mount the device. The device shall accept the maximum fastener penetration.				

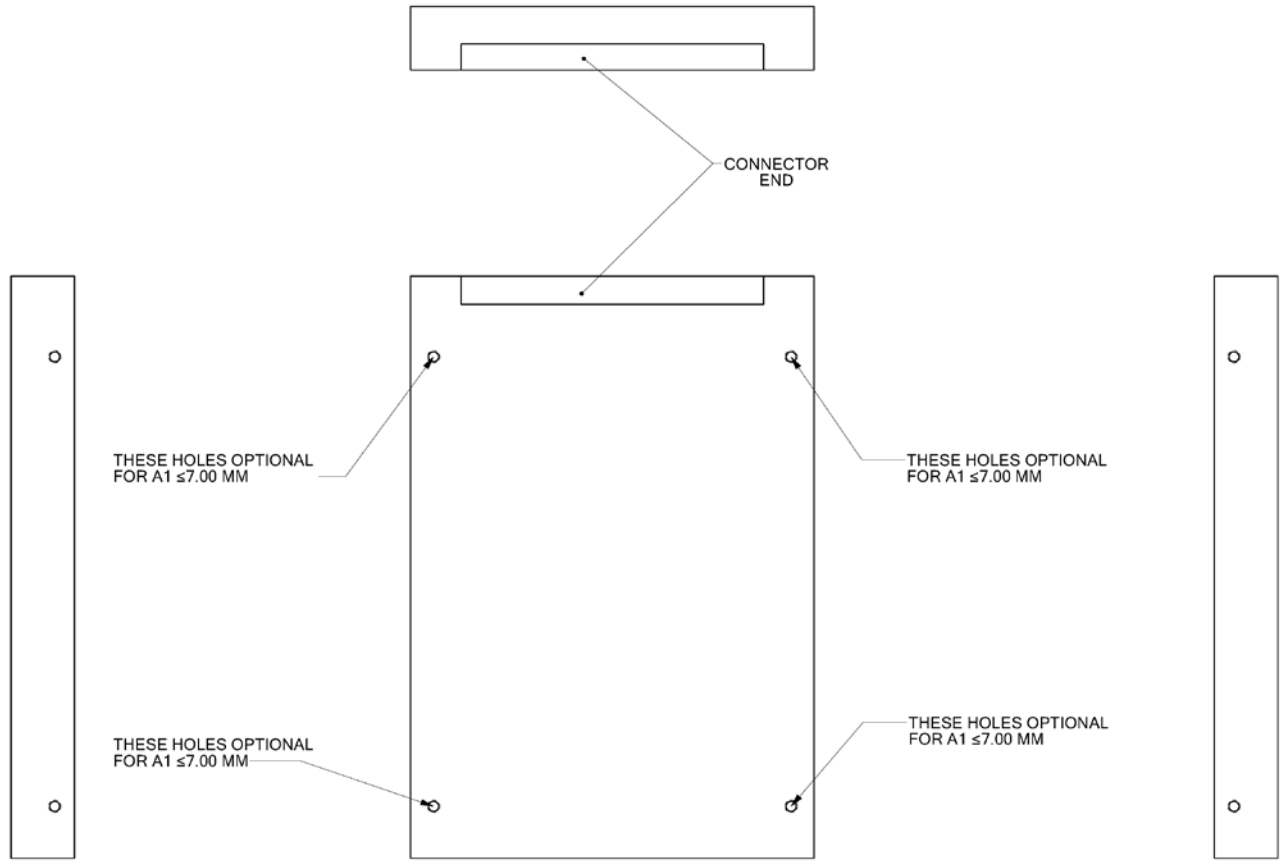




Note: Bottom mounting holes are optional on form factors with  $A1 \leq 7$  mm  
**FIGURE 3-1 FORM FACTOR OF 2.5" DISK DRIVE**

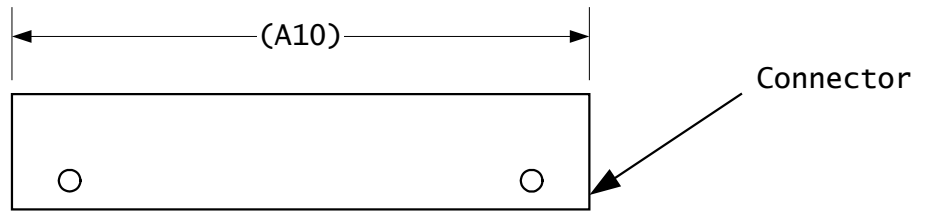


Note: Bottom mounting holes are optional on form factors with  $A1 \leq 7$  mm  
**FIGURE 3-2 DETAIL VIEWS OF 2.5" DISK DRIVE FORM FACTOR**

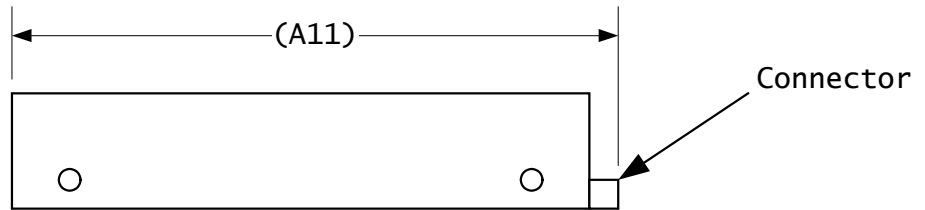


Note: Bottom mounting holes are optional on form factors with  $A1 \leq 7$  mm

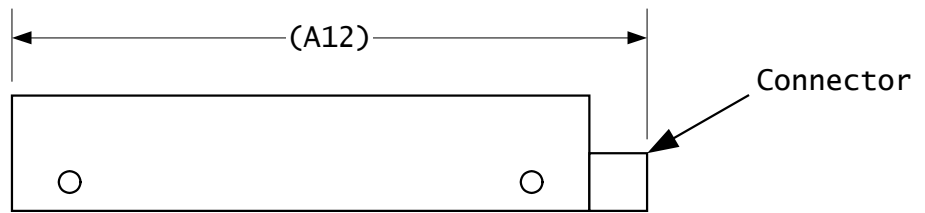
**FIGURE 3-3 REQUIRED MOUNTING HOLES OF 2.5" DISK DRIVE**



Form factor overall length with 50-pin connector  
Ref. SFF-8212



Form factor overall length with Serial ATA or Serial  
Attached SCSI connector  
Ref. SFF-8223



Form factor overall length with SCA-2 connector  
Ref. SFF-8222

**FIGURE 3-4 LENGTH OF 2.5" DISK DRIVE WITH CONNECTOR**