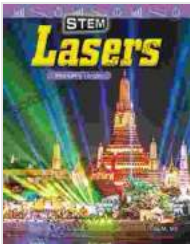


Stem Lasers Measuring Length Mathematics Readers

Stem lasers are a type of laser that is used to measure length. They are often used in construction, engineering, and surveying. Stem lasers work by emitting a beam of light that is reflected off of a target. The time it takes for the light to travel to the target and back is then used to calculate the distance to the target.



STEM: Lasers: Measuring Length (Mathematics Readers) by Bob Graham

★★★★☆ 4.8 out of 5

Language : English

File size : 9085 KB

Print length: 32 pages



Stem lasers are a very accurate way to measure length. They can measure distances up to several hundred meters with an accuracy of a few millimeters. Stem lasers are also very easy to use. They simply need to be pointed at the target and the distance will be displayed on the laser's display.

How Stem Lasers Work

Stem lasers work by emitting a beam of light that is reflected off of a target. The time it takes for the light to travel to the target and back is then used to calculate the distance to the target.

The following equation is used to calculate the distance to the target:

$$\text{distance} = (\text{speed of light} * \text{time of flight}) / 2$$

where:

* distance is the distance to the target in meters * speed of light is the speed of light in meters per second (299,792,458 meters per second) * time of flight is the time it takes for the light to travel to the target and back in seconds

Types of Stem Lasers

There are two main types of stem lasers:

* **Rotating stem lasers:** Rotating stem lasers emit a beam of light that rotates around the laser's body. This type of laser is often used for construction and engineering applications. * **Line stem lasers:** Line stem lasers emit a beam of light that is projected in a straight line. This type of laser is often used for surveying applications.

Applications of Stem Lasers

Stem lasers are used in a wide variety of applications, including:

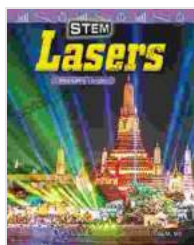
* **Construction:** Stem lasers are used to level foundations, align walls, and lay out roads. * **Engineering:** Stem lasers are used to measure the dimensions of objects, inspect equipment, and align machinery. * **Surveying:** Stem lasers are used to measure the distance between points, create maps, and determine elevations.

Benefits of Stem Lasers

Stem lasers offer a number of benefits over traditional methods of measuring length, including:

* **Accuracy:** Stem lasers are very accurate, with an accuracy of a few millimeters. * **Ease of use:** Stem lasers are very easy to use. They simply need to be pointed at the target and the distance will be displayed on the laser's display. * **Speed:** Stem lasers are very fast. They can measure distances in a matter of seconds. * **Versatility:** Stem lasers can be used in a wide variety of applications.

Stem lasers are a powerful tool for measuring length. They are accurate, easy to use, fast, and versatile. Stem lasers are used in a wide variety of applications, including construction, engineering, and surveying.



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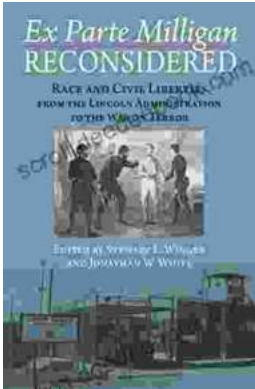
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