(WO.L1.3) Practice Stage

Thursday, March 29, 2018 8:34 PM

Wave Optics (WO)

Practice Stage:

Post-lecture 1: Young's Double Slit Experiment

Reading
1. none

Lecture Videos
1. none

Example Problems
1. none

Simulations
1. none

Other Suggested Content
1. none

Practice
1. none

Homework

WO.L1.3-01

Description: x

Learning Objectives: [x]

Problem Statement: The 3rd bright fringe of a double slit interference pattern is 30.0 cm above the central bright fringe. If the angle from the horizontal to this 3rd bright fringe is 12.0 degrees, what is the distance between the double slits and the viewing screen?

Answer: 1.41 meters

WO.L1.3-02

Description: x

Learning Objectives: [x]

Problem Statement: A 500 nm laser illuminates a double slit apparatus with a slit separation distance of 7.73 μm. What is tha angle from the horizontal to the 4th bright fringe?

Answer: 15.0 degrees

WO.L1.3-03

Description: x

Learning Objectives: [x]

Problem Statement: A 680 nm laser illuminates a double slit apparatus with a slit separation distance of 7.83 µm. On the viewing screen, you measure the distance from the central bright fringe to the 2nd bright fringe to be 88.2 cm. How far away is the viewing screen from the double slits?

Answer: 5.00 meters

WO.L1.3-04a

Description: x

Learning Objectives: [x]

Problem Statement: A 600 nm laser illuminates a double slit apparatus with a slit separation distance of 3.55 µm. The viewing screen is 1.50 meters behind the double slits. What is the distance from the central bright fringe to the 3nd dark fringe?

Answer: 0.699 meters

WO.L1.3-04b

Description: x

Learning Objectives: [x]

Problem Statement: A 600 nm laser illuminates a double slit apparatus with a slit separation distance of 3.55 µm. The viewing screen is 1.50 meters behind the double slits. What is the distance between the 2nd and 3rd dark finges?

Answer: 30.6 cm