

**LOS ANGELES POLICE DEPARTMENT**  
**RADAR-LASER OPERATOR (LIDAR)**  
**1850-23320**  
**Expanded Course Outline**

- I. INTRODUCTION 1 hour
- A. Instructors
1. Name, Assignment
  2. Experience
- B. Administration
1. Restrooms
  2. Dress Attire
  3. Court
  4. POST Attendance Requirements
  5. Class Contact Information
- C. Goals
1. To improve the effectiveness of speed enforcement through the proper and efficient use of LASER speed measurement devices.
  2. The purpose of improved speed enforcement is to prevent traffic collisions, save lives and reduce injuries.
- D. Objectives
1. Describe the basic principles of LASER speed measurement.
  2. Identify the specific LASER instrument(s) used by your department and describe their major components and functions.
  3. Acquire and demonstrate basic skills in testing and operating specific LASER instrument(s)
  4. Identify and describe the laws, court rulings, regulations, policies, and procedures affecting LASER speed measurement and speed enforcement.

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5. Acquire and demonstrate basic skills in preparing and presenting records and courtroom testimony relating to laser speed measurement and enforcement.

II. PRINCIPLES OF LASER 2 hours

A. LASER Fundamentals

1. Definition of LASER
2. Definition of LIDAR
3. Comparison of RADAR vs. LASER
4. LASER Energy
5. Signal Speed
6. Wavelength
7. Frequency
8. LASER Wavelength
9. Comparison of Wavelengths
  - a) X Band
  - b) K Band
  - c) Ka Band
  - d) LASER
10. Comparison of Frequencies
  - a) X Band
  - b) K Band
  - c) Ka Band
  - d) LASER

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11. Uses for LASER
  - a) Semi-Conductor
  - b) Gas
  - c) Chemical
  - d) Excimer
  - e) Free Electron
12. LASER Operations
13. LASER Beam Effects
  - a) Reflected
  - b) Refracted
  - c) Absorbed
14. LASER Beam
  - a) Shape
  - b) Size
  - c) Target Selective
15. LASER Effects
  - a) Panning
  - b) Sweep Effect
  - c) Atmospheric Conditions
  - d) Cosine Effect
16. Reflective Capability
  - a) Size

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- b) Shape
- c) Composition
- 17. Location Set Up
- 18. Tracking History
  - a) Visual Observation
  - b) Identify Target
  - c) Estimate Speed
  - d) In Range
  - e) Check Environment
  - f) Audio Observation
  - g) Confirmation and Tracking Tone
  - h) Audio
  - i) Lidar Confirmation
  - j) Stable Reading (one second)
  - k) Lock/No Lock
  - l) 3 to 5 Seconds
- 19. Speed Measurement
  - a) No Doppler Involved
  - b) Each Pulse of Light is Transmitted at the Speed of Light
  - c) Speed Measured by Method of Least Squares

III. Set-Up and Test

1 hour

- 1. Kustom Signals Pro Laser III

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2. LTI Ultra Lyte
3. LTI TruSpeed

IV. LAW 1 hour

A. California Vehicle Code

1. 40802 California Vehicle Code (CVC)
  - a) Officer has completed 24-hour RADAR Operator School
  - b) Officer has completed an additional two-hour LASER Operator School
  - c) Survey is within requirements
  - d) RADAR or LASER device meets HHTSA minimum requirements
  - e) The RADAR or LASER device has been calibrated within 3 years
  - f) The speed was proven unsafe by the officer
2. 22350 CVC – Basic Speed Law
3. 22349 CVC – Absolute Speed Limit

B. Case Law

1. Boulder Municipal Court Decision (1998)
2. Series of Fryre Hearings for LASER technology

V. JAMMERS AND DETECTORS 1 hour

- A. 28150 CVC – Jamming Devices
- B. Senate Bill 1964
- C. Jamming device
- D. Buying, possessing, manufacturing, selling, Jamming device
- E. Legality of RADAR detectors

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- F. FCC license
  - G. Required to operate a Jamming License
  - H. Exceptions
- VI. TRAFFIC STOP, PERSONAL SERVICE CITATION AND TRAFFIC COURT 1 hour
- A. Traffic Stop
    - 1. Officer/Violator Contact
    - 2. The Greeting
    - 3. Identify Yourself
    - 4. The Reason for the Stop
    - 5. Justifications
    - 6. Documents
    - 7. State Intention on Citing
    - 8. Notice to Appear
    - 9. Explanation of Citation
    - 10. Signature
    - 11. Departure
  - B. Personal Service Citation
    - 1. Do Not Offer Advice
    - 2. Refer to Back of Notice to Appear
    - 3. Citing Techniques
    - 4. Citation Book
    - 5. Abbreviations

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6. Pertinent Information
  7. Note Taking
  8. BWV
- C. Traffic Court
1. Documentation
    - a) Source Document
    - b) Speed Estimation Sheet
    - c) Radar Certificate
    - d) Laser Certificate
    - e) Device Certificate
    - f) Any additional Evidence (i.e. BWV)
  2. Testimony
    - a) Introduction of the Survey or exception
    - b) State Qualifications
    - c) Uniform and Vehicle
    - d) Set-Up and Test
    - e) Tracking History
    - f) Explain Prima Facie Elements
    - g) Clear and Unobstructed View
    - h) Occurred in the City and County of Los Angeles
    - i) No Further

VII. FINAL EXAM

1 hour