

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

LASER USE REGISTRATION

Manufactured On-loan Built In-House Modified

LUR No. 1096 PI Base LUR ? No Last Inspection Date Aug 20, 2015

Principal Investigator (PI) Orlando, Donald Phone 642-5328

Department Physics Laser Location (Bldg) LeConte Hall (Rm) 283

Contact Person Donald Orlando Phone 642-5599

Laser Users
Don Orlando
Students in Physics 111 laboratory course.

Laser Specifications and Characteristics:

Laser Classification 3B DOE Funding? NO

Make EOSI Model 2010 Serial No 00229

LASER TYPE: Argon, Ruby, etc.	Diode	
	<input type="checkbox"/> PULSED	<input checked="" type="checkbox"/> CONTINUOUS WAVE
Wavelength(s)	nm	780 nm
LASER OUTPUT		
Power or Energy	J/pulse	10 milli(max) W
Irradiance	W/cm ²	26 mlli W/cm ²
Pulse Repetition Frequency	Hz	
Pulse Duration	sec	

Operation Status active Is the laser tunable? multiline

Beam Diameter (mm) 1 (est) Beam Divergence (milliradians) 1 (est)

ANSI MPE 2.55 milli W/cm²

Description of Laser Use:

Detailed description of Laser Use (include Schematic Diagram), use another sheet of paper if needed
Used as a teaching tool. Used for Nonlinear spectroscopy and magneto-optics experiments.

UNIVERSITY OF CALIFORNIA, BERKELEY
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Make EOSI Model 2010 Serial No 00229

SPECIAL HAZARD:

- | | | | |
|--|--|---|--|
| <input checked="" type="checkbox"/> 1. Invisible Beam | <input type="checkbox"/> 6. Chemicals | <input type="checkbox"/> 11. Explosion | <input type="checkbox"/> 16. Other |
| <input checked="" type="checkbox"/> 2. Open Beam | <input type="checkbox"/> 7. Cryogenics | <input type="checkbox"/> 12. Fire | <input type="checkbox"/> 17. Skin Hazard |
| <input type="checkbox"/> 3. Collateral Radiation | <input type="checkbox"/> 8. Compressed Gases | <input checked="" type="checkbox"/> 13. Multiple Use Room | |
| <input type="checkbox"/> 4. High Pressure Arc Lamp | <input type="checkbox"/> 9. High Voltage | <input type="checkbox"/> 14. Repair Service | |
| <input checked="" type="checkbox"/> 5. Reflective Surfaces | <input checked="" type="checkbox"/> 10. Electrical | <input type="checkbox"/> 15. Q Switched/Mode Locked | |

SAFETY CONTROLS REQUIRED FOR OPERATION:

- | | | |
|---|--|---|
| <input type="checkbox"/> 18. Laser Warning Light on Door | <input checked="" type="checkbox"/> 25. Housing Interlock | 32. Safety Training |
| <input checked="" type="checkbox"/> 19. Door Signs | <input checked="" type="checkbox"/> 26. Master Switch Key | <input checked="" type="checkbox"/> Certificate/Quiz |
| <input type="checkbox"/> 20. Entry/Door Interlock | <input checked="" type="checkbox"/> R1 27. Enclosures/Barriers | <input checked="" type="checkbox"/> Formal Lecture |
| <input checked="" type="checkbox"/> 21. Emergency Procedures Posted | <input checked="" type="checkbox"/> 28. Beam Stops | <input checked="" type="checkbox"/> R2 Operating Procedures |
| <input checked="" type="checkbox"/> 22. Laser "On" Indicator | <input type="checkbox"/> 29. Viewing Optics or Windows | <input checked="" type="checkbox"/> Manufacturer's Manual |
| <input checked="" type="checkbox"/> 23. Equipment Warning Labels | <input type="checkbox"/> 30. Exhaust Ventilation | <input checked="" type="checkbox"/> R3 33. Other |
| <input checked="" type="checkbox"/> 24. Protective Housing | <input checked="" type="checkbox"/> 31. Eye Exam | |

EYE PROTECTION REQUIRED YES NO

Eyewear Specifications

O.D. 1.55(R4) Wavelength 780 nm

O.D. 1.26(R4) Wavelength 780 nm

O.D. _____ Wavelength _____ nm

SOP Required YES NO

SOP Received YES NO

SOP Version Date

SPECIAL REQUIREMENTS:

R1) Optical table laser barrier must be drawn close prior to operating any laser and should remain during normal operation.

R2) Alignments must be performed by PI or authorized and trained lab instructor.

R2) Laser users perform and document safety inspections of the laser system prior to each use. Each use is defined as any change to the optics, change in laser user, or if laser user is away from experiment for extended period of time. 1) Prior to use, laser users need to perform and document safety inspections of the laser system and associated optics.

R3) All suspected laser incidents shall be reported to the PI and to EH&S-Laser Safety.

R4) Personnel protective equipment (PPE) shall be worn as needed in accordance with the campus laser safety policy and laboratory safety procedure.

Safety precautions and control measures specified are required for operation under this LUR. Please contact the Laser Safety Officer regarding any questions.

<u>Signature on File</u>	<u>Feb 20, 1998</u>	<u>Signature on File</u>	<u>Feb 20, 1998</u>
Laser Safety Officer	Signature Date	Non-Ionizing Radiation Safety Committee Chair	Date

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

LASER USE REGISTRATION

Manufactured On-loan Built In-House Modified

LUR No. 1187 PI Base LUR ? No Last Inspection Date Aug 20, 2015

Principal Investigator (PI) Orlando, Donald Phone 642-5328

Department Physics Laser Location (Bldg) LeConte Hall (Rm) 282F

Contact Person Donald Orlando Phone 642-5328

Laser Users
Don Orlando
Students in Physics 111 laboratory course.

Laser Specifications and Characteristics:

Laser Classification 3B DOE Funding? NO

Make New Focus Model 7013 Serial No ST0414

LASER TYPE: Argon, Ruby, etc.	Diode	
	<input type="checkbox"/> PULSED	<input checked="" type="checkbox"/> CONTINUOUS WAVE
Wavelength(s)	nm	780 nm
LASER OUTPUT		
Power or Energy	J/pulse	70 milli W
Irradiance	W/cm ²	185 milli W/cm ²
Pulse Repetition Frequency	Hz	
Pulse Duration	sec	

Operation Status Active Is the laser tunable? No

Beam Diameter (mm) 1(est) Beam Divergence (milliradians) 1(est)

ANSI MPE 1.45 milli W/cm²

Description of Laser Use:

Detailed description of Laser Use (include Schematic Diagram), use another sheet of paper if needed
Laser is used for Boise-Einstein (MOT) experiment. Laser beam is split into three beams.

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OFFICE OF ENVIRONMENT HEALTH AND SAFETY

Make New Focus Model 7013 Serial No ST0414

SPECIAL HAZARD:

- | | | | |
|--|--|---|--|
| <input checked="" type="checkbox"/> 1. Invisible Beam | <input type="checkbox"/> 6. Chemicals | <input type="checkbox"/> 11. Explosion | <input type="checkbox"/> 16. Other |
| <input checked="" type="checkbox"/> 2. Open Beam | <input checked="" type="checkbox"/> 7. Cryogenics | <input type="checkbox"/> 12. Fire | <input type="checkbox"/> 17. Skin Hazard |
| <input type="checkbox"/> 3. Collateral Radiation | <input type="checkbox"/> 8. Compressed Gases | <input checked="" type="checkbox"/> 13. Multiple Use Room | |
| <input type="checkbox"/> 4. High Pressure Arc Lamp | <input type="checkbox"/> 9. High Voltage | <input type="checkbox"/> 14. Repair Service | |
| <input checked="" type="checkbox"/> 5. Reflective Surfaces | <input checked="" type="checkbox"/> 10. Electrical | <input type="checkbox"/> 15. Q Switched/Mode Locked | |

SAFETY CONTROLS REQUIRED FOR OPERATION:

- | | | |
|---|--|---|
| <input type="checkbox"/> 18. Laser Warning Light on Door | <input checked="" type="checkbox"/> 25. Housing Interlock | 32. Safety Training |
| <input checked="" type="checkbox"/> 19. Door Signs | <input checked="" type="checkbox"/> 26. Master Switch Key | <input type="checkbox"/> Certificate/Quiz |
| <input type="checkbox"/> 20. Entry/Door Interlock | <input checked="" type="checkbox"/> R4 27. Enclosures/Barriers | <input checked="" type="checkbox"/> X Formal Lecture |
| <input checked="" type="checkbox"/> 21. Emergency Procedures Posted | <input checked="" type="checkbox"/> 28. Beam Stops | <input checked="" type="checkbox"/> R2 Operating Procedures |
| <input checked="" type="checkbox"/> 22. Laser "On" Indicator | <input type="checkbox"/> 29. Viewing Optics or Windows | <input checked="" type="checkbox"/> X Manufacturer's Manual |
| <input checked="" type="checkbox"/> 23. Equipment Warning Labels | <input type="checkbox"/> 30. Exhaust Ventilation | <input checked="" type="checkbox"/> R3 33. Other |
| <input checked="" type="checkbox"/> 24. Protective Housing | <input checked="" type="checkbox"/> 31. Eye Exam | |

EYE PROTECTION REQUIRED YES NO

Eyewear Specifications

O.D. 2.1 Wavelength 780(R4) nm
O.D. _____ Wavelength _____ nm
O.D. _____ Wavelength _____ nm

SOP Required YES NO
SOP Received YES NO
SOP Version Date

SPECIAL REQUIREMENTS:

- R1) Optical table laser barrier must be drawn close prior to operating any laser and should remain during normal operation.
- R2) Alignments must be performed by PI or authorized and trained lab instructor.**
- R2) Laser users perform and document safety inspections of the laser system prior to each use. Each use is defined as any change to the optics, change in laser user, or if laser user is away from experiment for extended period of time. 1) Prior to use, laser users need to perform and document safety inspections of the laser system and associated optics.
- R3) All suspected laser incidents shall be reported to the PI and to EH&S-Laser Safety.
- R4) Personnel protective equipment (PPE) shall be worn as needed in accordance with the campus laser safety policy and laboratory safety procedure.

Safety precautions and control measures specified are required for operation under this LUR. Please contact the Laser Safety Officer regarding any questions.

Signature on File Oct 31, 2007 Signature on File Oct 31, 2007
Laser Safety Officer Signature Date Non-Ionizing Radiation Safety Committee Chair Date

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

LASER USE REGISTRATION

Manufactured On-loan Built In-House Modified

LUR No. 1188 PI Base LUR ? No Last Inspection Date Aug 20, 2015

Principal Investigator (PI) Orlando, Donald Phone 642-5328

Department Physics Laser Location (Bldg) LeConte Hall (Rm) 285

Contact Person Donald Orlando Phone 642-5328

Laser Users
Don Orlando
Students in Physics 111 laboratory course.

Laser Specifications and Characteristics:

Laser Classification 3B DOE Funding? NO

Make Roither Laser Technik Model RLV4212 Serial No _____

LASER TYPE: Argon, Ruby, etc.	Diode	
	<input type="checkbox"/> PULSED	<input checked="" type="checkbox"/> CONTINUOUS WAVE
Wavelength(s)	nm	405 nm
LASER OUTPUT		
Power or Energy	J/pulse	0.12 (max) W
Irradiance	W/cm ²	0.13 W/cm ²
Pulse Repetition Frequency	Hz	
Pulse Duration	sec	

Operation Status active Is the laser tunable? Yes (BBO crystal)

Beam Diameter (mm) 1 Beam Divergence (milliradians) 1.0

ANSI MPE 2.55 milli W/cm²

Description of Laser Use:

Detailed description of Laser Use (include Schematic Diagram), use another sheet of paper if needed
Diode laser will be used for Quantum Interference and entanglement experiment. the 405 nm beam will be split into three (2 x 810 nm, 1x405nm) via BBO crystal. Beam power for all wavelengths past the BBO crystal is less than 1 mW (calculated).

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

Make Roither Laser Technik Model RLV4212 Serial No _____

SPECIAL HAZARD:

- | | | | |
|--|--|---|--|
| <input checked="" type="checkbox"/> 1. Invisible Beam | <input type="checkbox"/> 6. Chemicals | <input type="checkbox"/> 11. Explosion | <input type="checkbox"/> 16. Other |
| <input checked="" type="checkbox"/> 2. Open Beam | <input type="checkbox"/> 7. Cryogenics | <input type="checkbox"/> 12. Fire | <input type="checkbox"/> 17. Skin Hazard |
| <input type="checkbox"/> 3. Collateral Radiation | <input type="checkbox"/> 8. Compressed Gases | <input type="checkbox"/> 13. Multiple Use Room | |
| <input type="checkbox"/> 4. High Pressure Arc Lamp | <input type="checkbox"/> 9. High Voltage | <input type="checkbox"/> 14. Repair Service | |
| <input checked="" type="checkbox"/> 5. Reflective Surfaces | <input checked="" type="checkbox"/> 10. Electrical | <input type="checkbox"/> 15. Q Switched/Mode Locked | |

SAFETY CONTROLS REQUIRED FOR OPERATION:

- | | | |
|---|---|---|
| <input type="checkbox"/> 18. Laser Warning Light on Door | <input checked="" type="checkbox"/> 25. Housing Interlock | 32. Safety Training |
| <input checked="" type="checkbox"/> 19. Door Signs | <input checked="" type="checkbox"/> 26. Master Switch Key | <input checked="" type="checkbox"/> Certificate/Quiz |
| <input type="checkbox"/> 20. Entry/Door Interlock | <input checked="" type="checkbox"/> 27. Enclosures/Barriers | <input checked="" type="checkbox"/> Formal Lecture |
| <input checked="" type="checkbox"/> 21. Emergency Procedures Posted | <input checked="" type="checkbox"/> 28. Beam Stops | <input checked="" type="checkbox"/> R2 Operating Procedures |
| <input checked="" type="checkbox"/> 22. Laser "On" Indicator | <input type="checkbox"/> 29. Viewing Optics or Windows | <input checked="" type="checkbox"/> Manufacturer's Manual |
| <input checked="" type="checkbox"/> 23. Equipment Warning Labels | <input type="checkbox"/> 30. Exhaust Ventilation | <input checked="" type="checkbox"/> R3 33. Other |
| <input checked="" type="checkbox"/> 24. Protective Housing | <input checked="" type="checkbox"/> 31. Eye Exam | |

EYE PROTECTION REQUIRED YES NO

Eyewear Specifications

O.D. 2.1 Wavelength 405 nm

O.D. 0 Wavelength 810 nm

O.D. _____ Wavelength _____ nm

SOP Required YES NO

SOP Received YES NO

SOP Version Date

SPECIAL REQUIREMENTS:

R1) Optical table laser barrier must be drawn close prior to operating any laser and should remain during normal operation.

R2) Alignments must be performed by PI or authorized and trained lab instructor.

R2) Laser users perform and document safety inspections of the laser system prior to each use. Each use is defined as any change to the optics, change in laser user, or if laser user is away from experiment for extended period of time. 1) Prior to use, laser users need to perform and document safety inspections of the laser system and associated optics.

R3) All suspected laser incidents shall be reported to the PI and to EH&S-Laser Safety.

R4) Personnel protective equipment (PPE) shall be worn as needed in accordance with the campus laser safety policy and laboratory safety procedure.

Safety precautions and control measures specified are required for operation under this LUR. Please contact the Laser Safety Officer regarding any questions.

Laser Safety Officer

Signature Date

Non-Ionizing Radiation Safety Committee Chair

Date

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

LASER USE REGISTRATION

Manufactured On-loan Built In-House Modified

LUR No. 1189 PI Base LUR ? No Last Inspection Date Aug 20, 2015

Principal Investigator (PI) Orlando, Donald Phone 642-5328

Department Physics Laser Location (Bldg) LeConte Hall (Rm) 287

Contact Person Donald Orlando Phone 642-5328

Laser Users
Don Orlando
Students in Physics 111 laboratory course.

Laser Specifications and Characteristics:

Laser Classification 4 DOE Funding? NO

Make UCB Model DO-1 Serial No #1

LASER TYPE: Argon, Ruby, etc.	CO ₂	
	<input type="checkbox"/> PULSED	<input checked="" type="checkbox"/> CONTINUOUS WAVE
Wavelength(s)	nm	10600 nm
LASER OUTPUT		
Power or Energy	J/pulse	11 (max) W
Irradiance	W/cm ²	114 W/cm ²
Pulse Repetition Frequency	Hz	
Pulse Duration	sec	

Operation Status Active Is the laser tunable? Yes

Beam Diameter (mm) 8 Beam Divergence (milliradians) 0.5

ANSI MPE 0.1 W/cm²

Description of Laser Use:

Detailed description of Laser Use (include Schematic Diagram), use another sheet of paper if needed
Used as a teaching tool to study lasers. Class use includes alignment and output studies.

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

Make UCB Model DO-1 Serial No #1

SPECIAL HAZARD:

- | | | | |
|--|---|---|---|
| <input checked="" type="checkbox"/> 1. Invisible Beam | <input type="checkbox"/> 6. Chemicals | <input type="checkbox"/> 11. Explosion | <input type="checkbox"/> 16. Other |
| <input checked="" type="checkbox"/> 2. Open Beam | <input checked="" type="checkbox"/> 7. Cryogenics | <input checked="" type="checkbox"/> 12. Fire | <input checked="" type="checkbox"/> 17. Skin Hazard |
| <input type="checkbox"/> 3. Collateral Radiation | <input checked="" type="checkbox"/> 8. Compressed Gases | <input type="checkbox"/> 13. Multiple Use Room | |
| <input type="checkbox"/> 4. High Pressure Arc Lamp | <input checked="" type="checkbox"/> 9. High Voltage | <input type="checkbox"/> 14. Repair Service | |
| <input checked="" type="checkbox"/> 5. Reflective Surfaces | <input checked="" type="checkbox"/> 10. Electrical | <input type="checkbox"/> 15. Q Switched/Mode Locked | |

SAFETY CONTROLS REQUIRED FOR OPERATION:

- | | | |
|---|---|---|
| <input type="checkbox"/> 18. Laser Warning Light on Door | <input checked="" type="checkbox"/> 25. Housing Interlock | 32. Safety Training |
| <input checked="" type="checkbox"/> 19. Door Signs | <input checked="" type="checkbox"/> 26. Master Switch Key | <input checked="" type="checkbox"/> Certificate/Quiz |
| <input type="checkbox"/> 20. Entry/Door Interlock | <input type="checkbox"/> 27. Enclosures/Barriers | <input checked="" type="checkbox"/> Formal Lecture |
| <input checked="" type="checkbox"/> 21. Emergency Procedures Posted | <input checked="" type="checkbox"/> 28. Beam Stops | <input checked="" type="checkbox"/> R1 Operating Procedures |
| <input checked="" type="checkbox"/> 22. Laser "On" Indicator | <input type="checkbox"/> 29. Viewing Optics or Windows | <input type="checkbox"/> Manufacturer's Manual |
| <input checked="" type="checkbox"/> 23. Equipment Warning Labels | <input type="checkbox"/> 30. Exhaust Ventilation | <input checked="" type="checkbox"/> R2 33. Other |
| <input checked="" type="checkbox"/> 24. Protective Housing | <input checked="" type="checkbox"/> 31. Eye Exam | |

EYE PROTECTION REQUIRED YES NO

Eyewear Specifications

O.D. 3.0(R3) Wavelength 10,600 nm

O.D. _____ Wavelength _____ nm

O.D. _____ Wavelength _____ nm

SOP Required YES NO

SOP Received YES NO

SOP Version Date

SPECIAL REQUIREMENTS:

R1) Optical table laser barrier must be drawn close prior to operating any laser and should remain during normal operation.

R2) Alignments must be performed by PI or authorized and trained lab instructor.

R2) Laser users perform and document safety inspections of the laser system prior to each use. Each use is defined as any change to the optics, change in laser user, or if laser user is away from experiment for extended period of time. 1) Prior to use, laser users need to perform and document safety inspections of the laser system and associated optics.

R3) All suspected laser incidents shall be reported to the PI and to EH&S-Laser Safety.

R4) Personnel protective equipment (PPE) shall be worn as needed in accordance with the campus laser safety policy and laboratory safety procedure.

NOTE: This laser system is not to be used for instructional use until an engineered safety lock out system is installed to prevent the HV from being turned on while "valve #1" is open.

Avoid prolonged skin exposure to UV lamp used to activate IF imaging cards.

Safety precautions and control measures specified are required for operation under this LUR. Please contact the Laser Safety Officer regarding any questions.

<u>Signature on File</u>	<u>Dec 2, 1994</u>	<u>Signature on File</u>	<u>Dec 5, 1994</u>
Laser Safety Officer	Signature Date	Non-Ionizing Radiation Safety Committee Chair	Date

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

LASER USE REGISTRATION

Manufactured On-loan Built In-House Modified

LUR No. 1201 PI Base LUR ? No Last Inspection Date Aug 20, 2015

Principal Investigator (PI) Orlando, Donald Phone 642-5328

Department Physics Laser Location (Bldg) LeConte Hall (Rm) 286E

Contact Person Donald Orlando Phone 642-5328

Laser Users
Don Orlando
Students in Physics 111 laboratory course.

Laser Specifications and Characteristics:

Laser Classification 3B DOE Funding? NO

Make Axcel Model 619083 Serial No BF-979-0300-P50

LASER TYPE: Argon, Ruby, etc.	Diode	
	<input type="checkbox"/> PULSED	<input checked="" type="checkbox"/> CONTINUOUS WAVE
Wavelength(s)	nm	975 nm
LASER OUTPUT		
Power or Energy	J/pulse	0.3 W
Irradiance	W/cm ²	0.78 W/cm ²
Pulse Repetition Frequency	Hz	
Pulse Duration	sec	

Operation Status Active Is the laser tunable? multiline

Beam Diameter (mm) 1 (est) Beam Divergence (milliradians) 1 (est)

ANSI MPE 0.00355 W/cm²

Description of Laser Use:

Detailed description of Laser Use (include Schematic Diagram), use another sheet of paper if needed
Laser will be used for a optical tweezer set-up.

12/6/11 - This LUR has been transferred to newer Lumics laser (845nm, 200mW, serial # 0026147(maybe, hard to read)), as the Avanex laser formerly listed here has been decommissioned and salvaged (laser "blew up").

1/23/14 - This LUR has been transferred to Axcel laser (975nm, 300mW, model 619083, serial #BF-979-0300-P50)

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

Make Axcel Model 619083 Serial No BF-979-0300-P50

SPECIAL HAZARD:

- | | | | |
|--|--|---|--|
| <input checked="" type="checkbox"/> 1. Invisible Beam | <input type="checkbox"/> 6. Chemicals | <input type="checkbox"/> 11. Explosion | <input type="checkbox"/> 16. Other |
| <input checked="" type="checkbox"/> 2. Open Beam | <input type="checkbox"/> 7. Cryogenics | <input type="checkbox"/> 12. Fire | <input type="checkbox"/> 17. Skin Hazard |
| <input type="checkbox"/> 3. Collateral Radiation | <input type="checkbox"/> 8. Compressed Gases | <input type="checkbox"/> 13. Multiple Use Room | |
| <input type="checkbox"/> 4. High Pressure Arc Lamp | <input type="checkbox"/> 9. High Voltage | <input type="checkbox"/> 14. Repair Service | |
| <input checked="" type="checkbox"/> 5. Reflective Surfaces | <input checked="" type="checkbox"/> 10. Electrical | <input type="checkbox"/> 15. Q Switched/Mode Locked | |

SAFETY CONTROLS REQUIRED FOR OPERATION:

- | | | |
|---|---|---|
| <input type="checkbox"/> 18. Laser Warning Light on Door | <input checked="" type="checkbox"/> 25. Housing Interlock | 32. Safety Training |
| <input checked="" type="checkbox"/> 19. Door Signs | <input checked="" type="checkbox"/> 26. Master Switch Key | <input checked="" type="checkbox"/> Certificate/Quiz |
| <input type="checkbox"/> 20. Entry/Door Interlock | <input checked="" type="checkbox"/> 27. Enclosures/Barriers | <input checked="" type="checkbox"/> Formal Lecture |
| <input checked="" type="checkbox"/> 21. Emergency Procedures Posted | <input checked="" type="checkbox"/> 28. Beam Stops | <input checked="" type="checkbox"/> R2 Operating Procedures |
| <input checked="" type="checkbox"/> 22. Laser "On" Indicator | <input type="checkbox"/> 29. Viewing Optics or Windows | <input checked="" type="checkbox"/> Manufacturer's Manual |
| <input checked="" type="checkbox"/> 23. Equipment Warning Labels | <input type="checkbox"/> 30. Exhaust Ventilation | <input checked="" type="checkbox"/> R3 33. Other |
| <input checked="" type="checkbox"/> 24. Protective Housing | <input checked="" type="checkbox"/> 31. Eye Exam | |

EYE PROTECTION REQUIRED YES NO

Eyewear Specifications

O.D. 2.3 (R4) Wavelength 975 nm
O.D. _____ Wavelength _____ nm
O.D. _____ Wavelength _____ nm

SOP Required YES NO
SOP Received YES NO
SOP Version Date

SPECIAL REQUIREMENTS:

- R1) Optical table laser barrier must be drawn close prior to operating any laser and should remain during normal operation.
- R2) Alignments must be performed by PI or authorized and trained lab instructor.**
- R2) Laser users perform and document safety inspections of the laser system prior to each use. Each use is defined as any change to the optics, change in laser user, or if laser user is away from experiment for extended period of time. 1) Prior to use, laser users need to perform and document safety inspections of the laser system and associated optics.
- R3) All suspected laser incidents shall be reported to the PI and to EH&S-Laser Safety.
- R4) Personnel protective equipment (PPE) shall be worn as needed in accordance with the campus laser safety policy and laboratory safety procedure.

Safety precautions and control measures specified are required for operation under this LUR. Please contact the Laser Safety Officer regarding any questions.

Signature on File Oct 31, 2007 Signature on File Oct 31, 2007
Laser Safety Officer Signature Date Non-Ionizing Radiation Safety Committee Chair Date

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

LASER USE REGISTRATION

Manufactured On-loan Built In-House Modified

LUR No. 1222 PI Base LUR ? No Last Inspection Date Aug 20, 2015

Principal Investigator (PI) Orlando, Donald Phone 642-5328

Department Physics Laser Location (Bldg) LeConte Hall (Rm) 283

Contact Person Donald Orlando Phone 642-2843

Laser Users
Students in Physics 111 laboratory course.

Laser Specifications and Characteristics:

Laser Classification 3B DOE Funding? No

Make Russian Model _____ Serial No 2010/000352

LASER TYPE: Argon, Ruby, etc.	Diode	
	<input type="checkbox"/> PULSED	<input checked="" type="checkbox"/> CONTINUOUS WAVE
Wavelength(s)	nm	780 nm
LASER OUTPUT		
Power or Energy	J/pulse	0.04 W
Irradiance	W/cm ²	0.104 W/cm ²
Pulse Repetition Frequency	Hz	
Pulse Duration	sec	

Operation Status Active Is the laser tunable? No

Beam Diameter (mm) 1 (est) Beam Divergence (milliradians) 1 (est)

ANSI MPE 0.00145 W/cm²

Description of Laser Use:

Detailed description of Laser Use (include Schematic Diagram), use another sheet of paper if needed
Laser is used for Non-linear spectroscopy and magneto-optics experiments.

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

Make Russian Model _____ Serial No 2010/000352

SPECIAL HAZARD:

- | | | | |
|--|--|---|--|
| <input type="checkbox"/> 1. Invisible Beam | <input type="checkbox"/> 6. Chemicals | <input type="checkbox"/> 11. Explosion | <input type="checkbox"/> 16. Other |
| <input type="checkbox"/> 2. Open Beam | <input type="checkbox"/> 7. Cryogenics | <input type="checkbox"/> 12. Fire | <input type="checkbox"/> 17. Skin Hazard |
| <input type="checkbox"/> 3. Collateral Radiation | <input type="checkbox"/> 8. Compressed Gases | <input type="checkbox"/> 13. Multiple Use Room | |
| <input type="checkbox"/> 4. High Pressure Arc Lamp | <input type="checkbox"/> 9. High Voltage | <input type="checkbox"/> 14. Repair Service | |
| <input type="checkbox"/> 5. Reflective Surfaces | <input type="checkbox"/> 10. Electrical | <input type="checkbox"/> 15. Q Switched/Mode Locked | |

SAFETY CONTROLS REQUIRED FOR OPERATION:

- | | | |
|---|---|--|
| <input type="checkbox"/> 18. Laser Warning Light on Door | <input type="checkbox"/> 25. Housing Interlock | <input type="checkbox"/> 32. Safety Training |
| <input checked="" type="checkbox"/> 19. Door Signs | <input checked="" type="checkbox"/> 26. Master Switch Key | <input checked="" type="checkbox"/> Certificate/Quiz |
| <input type="checkbox"/> 20. Entry/Door Interlock | <input checked="" type="checkbox"/> 27. Enclosures/Barriers | <input type="checkbox"/> Formal Lecture |
| <input checked="" type="checkbox"/> 21. Emergency Procedures Posted | <input type="checkbox"/> 28. Beam Stops | <input checked="" type="checkbox"/> Operating Procedures |
| <input checked="" type="checkbox"/> 22. Laser "On" Indicator | <input type="checkbox"/> 29. Viewing Optics or Windows | <input type="checkbox"/> Manufacturer's Manual |
| <input checked="" type="checkbox"/> 23. Equipment Warning Labels | <input type="checkbox"/> 30. Exhaust Ventilation | <input checked="" type="checkbox"/> 33. Other |
| <input checked="" type="checkbox"/> 24. Protective Housing | <input checked="" type="checkbox"/> 31. Eye Exam | |

EYE PROTECTION REQUIRED YES NO

Eyewear Specifications

O.D. 1.86 Wavelength 780 nm

O.D. _____ Wavelength _____ nm

O.D. _____ Wavelength _____ nm

SOP Required YES NO

SOP Received YES NO

SOP Version Date

SPECIAL REQUIREMENTS:

R1) Optical table laser barrier must be drawn close prior to operating any laser and should remain during normal operation.

R2) Alignments must be performed by PI or authorized and trained lab instructor.

R2) Laser users perform and document safety inspections of the laser system prior to each use. Each use is defined as any change to the optics, change in laser user, or if laser user is away from experiment for extended period of time. 1) Prior to use, laser users need to perform and document safety inspections of the laser system and associated optics.

R3) All suspected laser incidents shall be reported to the PI and to EH&S-Laser Safety.

R4) Personnel protective equipment (PPE) shall be worn as needed in accordance with the campus laser safety policy and laboratory safety procedure.

Safety precautions and control measures specified are required for operation under this LUR. Please contact the Laser Safety Officer regarding any questions.

Signature on File _____ Aug 19, 2010 _____ Signature on File _____ Mar 20, 2011
Laser Safety Officer Signature Date Non-Ionizing Radiation Safety Committee Chair Date

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

LASER USE REGISTRATION

Manufactured On-loan Built In-House Modified

LUR No. 1011 PI Base LUR ? Yes Last Inspection Date Aug 20, 2015

Principal Investigator (PI) Orlando, Donald Phone 642-5328

Department Physics Laser Location (Bldg) LeConte Hall (Rm) 285

Contact Person Donald Orlando Phone 642-5328

Laser Users
Don Orlando

Laser Specifications and Characteristics:

Laser Classification 3B DOE Funding? NO

Make Power Technology Inc Model LDC U5/5642 Serial No M021K12

LASER TYPE: Argon, Ruby, etc.	diode	
	<input type="checkbox"/> PULSED	<input checked="" type="checkbox"/> CONTINUOUS WAVE
Wavelength(s)	nm	658 nm
LASER OUTPUT		
Power or Energy	J/pulse	46 milli(max) W
Irradiance	W/cm ²	0.026 milli W/cm ²
Pulse Repetition Frequency	Hz	
Pulse Duration	sec	

Operation Status storage Is the laser tunable? No

Beam Diameter (mm) 1 Beam Divergence (milliradians) 1

ANSI MPE 2.55 milli W/cm²

Description of Laser Use:

Detailed description of Laser Use (include Schematic Diagram), use another sheet of paper if needed
Used to teach holography.

8/21/2012 - Holography experiment has been replaced. Laser is in storage.

1/23/14 - Laser not seen, Don says probably stored in room 184

UNIVERSITY OF CALIFORNIA, BERKELEY
OFFICE OF ENVIRONMENT HEALTH AND SAFETY

Make Power Technology Inc Model LDC U5/5642 Serial No M021K12

SPECIAL HAZARD:

- | | | | |
|--|--|---|--|
| <input type="checkbox"/> 1. Invisible Beam | <input type="checkbox"/> 6. Chemicals | <input type="checkbox"/> 11. Explosion | <input type="checkbox"/> 16. Other |
| <u>1</u> 2. Open Beam | <input type="checkbox"/> 7. Cryogenics | <input type="checkbox"/> 12. Fire | <input type="checkbox"/> 17. Skin Hazard |
| <input type="checkbox"/> 3. Collateral Radiation | <input type="checkbox"/> 8. Compressed Gases | <input type="checkbox"/> 13. Multiple Use Room | |
| <input type="checkbox"/> 4. High Pressure Arc Lamp | <input type="checkbox"/> 9. High Voltage | <input type="checkbox"/> 14. Repair Service | |
| <u>X</u> 5. Reflective Surfaces | <input type="checkbox"/> 10. Electrical | <input type="checkbox"/> 15. Q Switched/Mode Locked | |

SAFETY CONTROLS REQUIRED FOR OPERATION:

- | | | |
|--|--|--------------------------------|
| <input type="checkbox"/> 18. Laser Warning Light on Door | <u>X</u> 25. Housing Interlock | 32. Safety Training |
| <u>X</u> 19. Door Signs | <u>X</u> 26. Master Switch Key | <u>X</u> Certificate/Quiz |
| <input type="checkbox"/> 20. Entry/Door Interlock | <u>R1</u> 27. Enclosures/Barriers | <u>x</u> Formal Lecture |
| <u>X</u> 21. Emergency Procedures Posted | <u>X</u> 28. Beam Stops | <u>R2</u> Operating Procedures |
| <u>X</u> 22. Laser "On" Indicator | <input type="checkbox"/> 29. Viewing Optics or Windows | <u>X</u> Manufacturer's Manual |
| <u>X</u> 23. Equipment Warning Labels | <input type="checkbox"/> 30. Exhaust Ventilation | <u>R3</u> 33. Other |
| <u>X</u> 24. Protective Housing | <input type="checkbox"/> 31. Eye Exam | |

EYE PROTECTION REQUIRED YES NO

Eyewear Specifications

O.D. 1.66(R4) Wavelength 633 nm

O.D. _____ Wavelength _____ nm

O.D. _____ Wavelength _____ nm

SOP Required YES NO

SOP Received YES NO

SOP Version Date

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<u>Signature on File</u>	<u>Dec 22, 1994</u>	<u>Signature on File</u>	<u>Jan 9, 1995</u>
Laser Safety Officer	Signature Date	Non-Ionizing Radiation Safety Committee Chair	Date