

Subject:	U13 Laser Interlock Test		
Number:	LS-PPS-0043	Revision:	A
		Effective:	5/1/07
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*Approval signatures on file with master copy.

[Revision Log](#)

Test Reason:	Test Result:	<input type="checkbox"/> Passed	<input type="checkbox"/> Failed
	Test Type:	<input type="checkbox"/> Full	<input type="checkbox"/> Partial
Test Date:	Start Time:	Finish Time:	
Tester 1:	Assistant 1:		
Tester 2:	Assistant 2:		

PREPARATION:

- Inform the experimenter that a test of the laser interlock is being performed.
- A qualified U13 laser operator must be available to assist during the test.

1. *[Search]*

Press the Start Search button located inside the hutch.

The start search indicator comes ON

Exit the hutch, close the door, and press the Complete Search Button.

Observe the steady audible warning is a minimum of 13 - 15 seconds.

Both "Laser Interlocked" signs come ON

Area secure indicator is ON

2. Open the door

Interlock drops out (Area secure interlock indicator is OFF)

Intermittent audible alarm sounds for 5 seconds.

Both "Laser Interlocked" signs turn OFF

Interlock fault indicator comes ON

Attempt to secure the hutch

Start search indicator does not latch

Complete search indicator does not latch

Laser interlock does not activate

Reset Interlock fault

3. Press the start search button. Exit the hutch, close the door and wait.

The Start Search indicator turns OFF in 30 seconds or less.

Press Complete Search Button.

Interlock does not activate

4. Press the Start Search button. Exit the hutch and close the door. Press the Complete Search Button. Open the door and close the door within the time-out period and press the Complete Search Button.

The interlock does not activate

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- | | | <u>Internal</u> | <u>External</u> |
|----|---|-----------------|-----------------|
| 5. | Search and interlock the hutch. Press the interlock OFF button
The laser interlock drops out | _____ | _____ |
| | Open the door. | | |
| | No audible warning sounds. | _____ | _____ |
| | Interlock fault indicator <u>does not</u> come ON | _____ | _____ |
| 6. | <i>[Laser Curtain]</i> | | |
| | Secure hutch for laser. Leave power supply OFF. | | _____ |
| | Open Curtain | | |
| | Interlock drops out. | | _____ |
| | The interlock fault LED comes ON | | _____ |
| | Intermittent audible alarm sounds for 5 seconds. | | _____ |
| | Interlock fault will only reset when F-300 key is turned | | _____ |
| | Remove the holders from the door switches. Stand inside the laser room and open and close the door. | | |
| 7. | <i>[Lockout Switch]</i> | | |
| | Secure hutch for laser. Power Supply remains OFF. | | |
| | Switch from “operate” mode to “Lockout” mode. | | |
| | Interlock drops out. | | _____ |
| | Interlock fault LED comes ON | | _____ |
| | Attempt to open shutter | | |
| | Shutter will not Open | | _____ |
| | Reset interlock fault | | |
| | Attempt to secure hutch | | |
| | Laser hutch security will not activate | | _____ |
| | Switch to “Operate” mode | | |
| 8. | <i>[Laser Shutter Operation]</i> | | |
| | Request that a U13 qualified laser operator assist in the completion of the laser interlock test. | | |
| | At this time the area should not be secured. | | _____ |
| | Verify the laser power supply is off. | | _____ |
| | The laser shutter is closed | | _____ |
| 9. | Attempt to open the shutter. | | |
| | The shutter does not Open | | _____ |

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14. Open the laser shutter.
 Press the External PASS-Through button and begin timing.
 The U13 laser shutter closes _____
 Open the curtain slightly.
 After no more than 30 seconds the following occurs: _____ seconds
- An audible warning sounds for 5 seconds _____
 - The interlock fault LED comes ON _____
 - Interlock drops out _____
 - The power supply remains ON in U6 laser hutch. _____
- Interlock fault will only reset when F-300 key is turned _____
15. [*Emergency Stops*]
 Secure hutch with one person remaining inside & turn ON power supply.
 Open laser shutter. Press the internal Emergency Stop button.
 The power Supply Turns OFF in U6 laser hutch. _____
 The shutter closes _____
 Interlock drops out _____
 Interlock fault is ON _____
 Intermittent audible alarm sounds for 5 seconds. _____
 Interlock fault will only reset when F-300 key is turned _____
- Attempt to search hutch.
 Laser security will not activate. _____
- Reset emergency stop.
16. Secure hutch & leave power supply OFF.
 Press the external Emergency Stop button.
 Interlock drops out _____
 Interlock fault is ON _____
 Interlock fault will only reset when F-300 key is turned _____
- Reset emergency stop.
17. [*Laser Curtain Reach-Back*]
 Secure hutch for laser and Turn Power Supply ON in U6 laser hutch.
 Open U13 laser shutter.
BLOCK U13 LASER SHUTTER IN OPEN POSITION.
 Open the laser curtain.
 Interlock drops out. _____
 Laser shutter Attempts to Close. _____
 Power Supply Turns OFF. _____
 The interlock fault LED comes ON _____
 Intermittent audible alarm sounds for 5 seconds. _____
 Interlock fault will only reset when F-300 key is turned _____