

Kyle F. Sunden

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yaq - Yet Another Acquisition

A modular approach to spectroscopy software and instrumentation

Kyle F. Sunden

University of Wisconsin-Madison

2022-10-10



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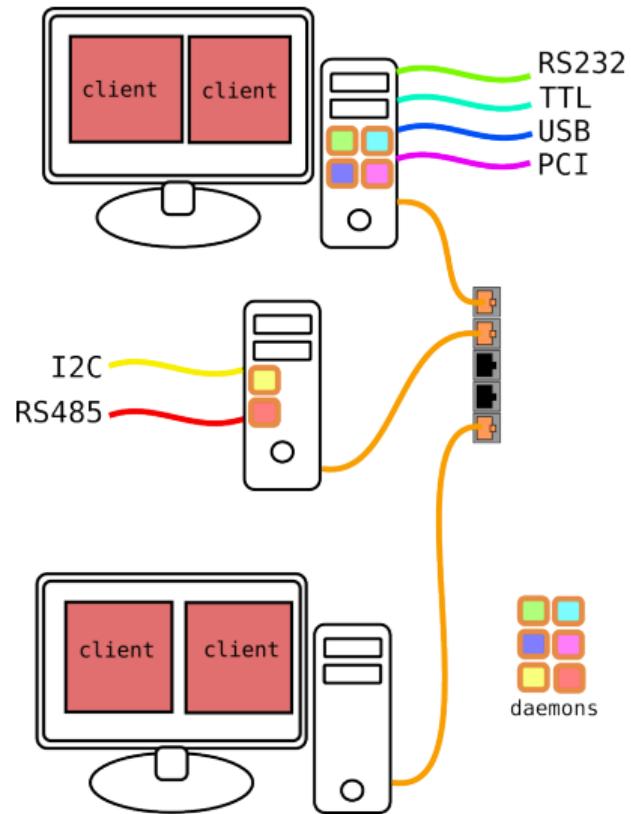
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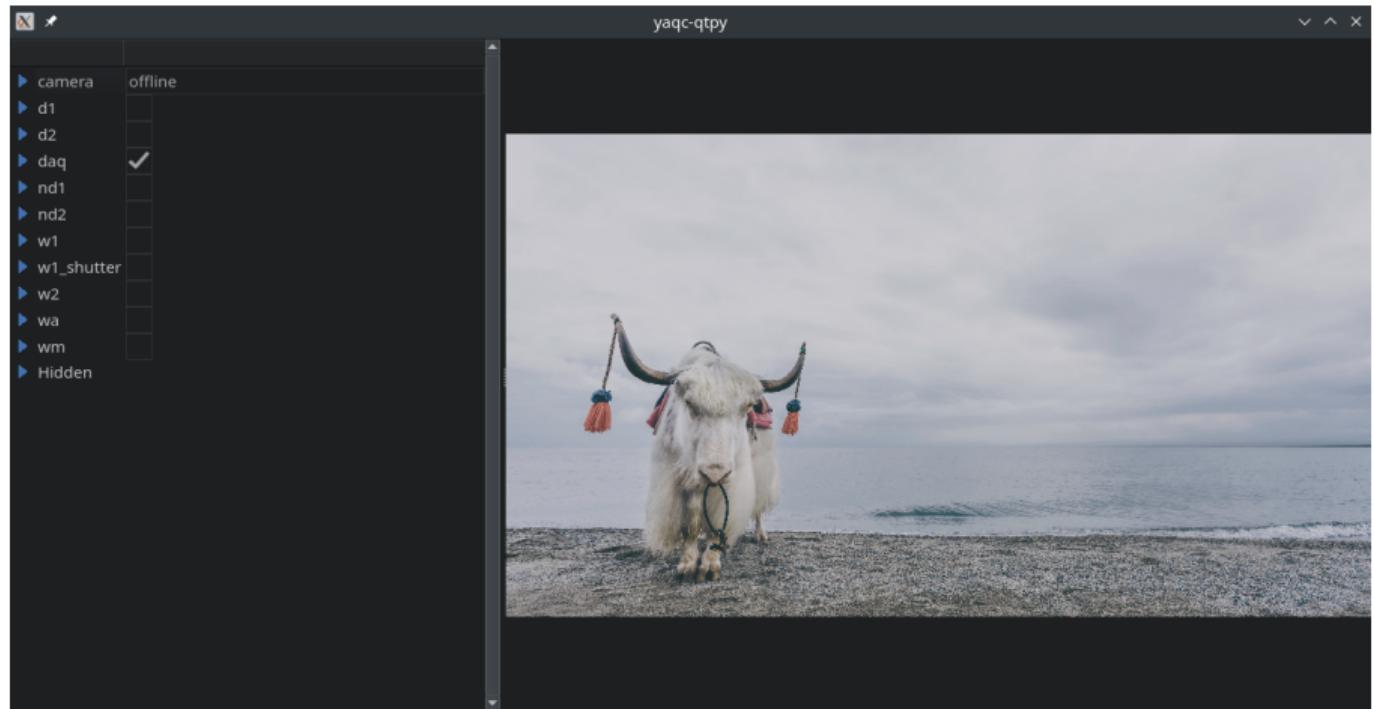
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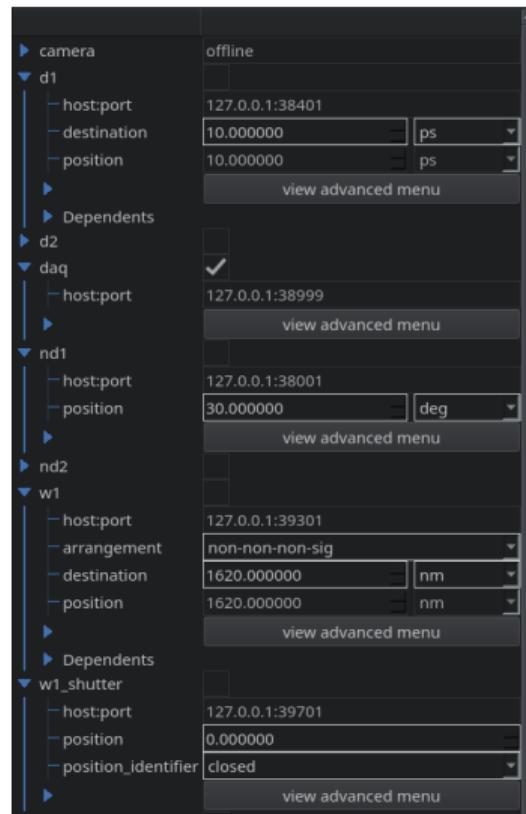
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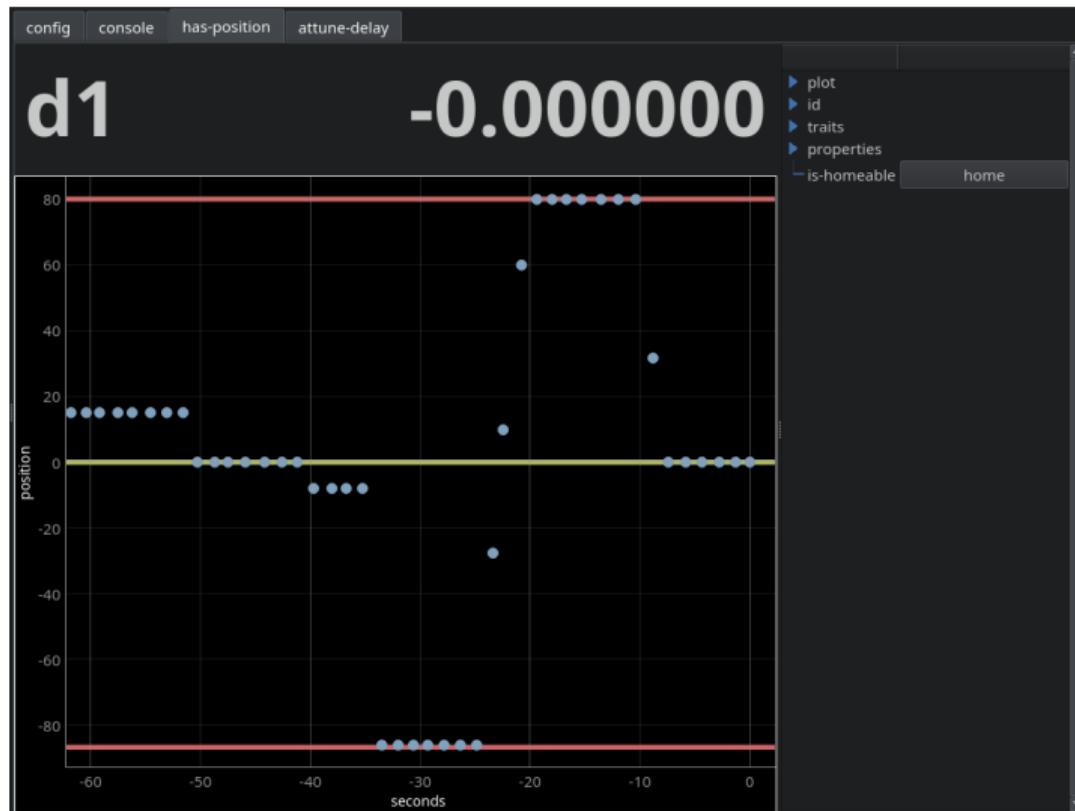
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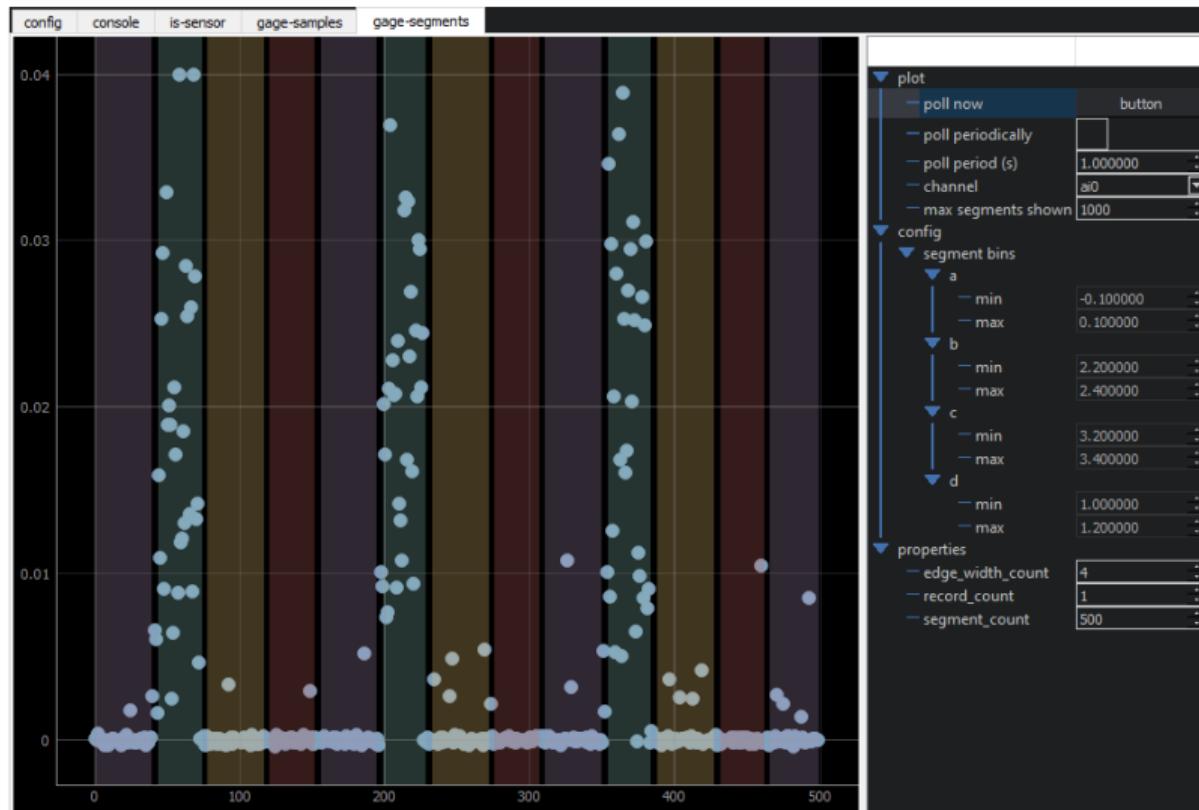
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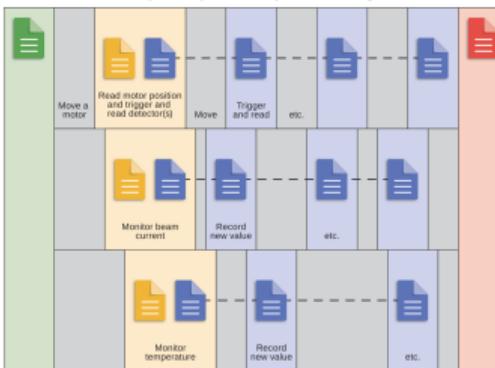
Example 1: Simplest Possible Run



Example 2: A Simple Scan



Example 3: Asynchronously Monitor During a Scan



Run Start: Metadata about this run, including everything we know in advance: time, type of experiment, sample info., etc.

Event Descriptor: Metadata about the readings in the event (units, precision, etc.) and the relevant hardware

Event: Readings and timestamps

Run Stop: Additional metadata known at the end: what time it completed and its exit status (success, aborted, failed)

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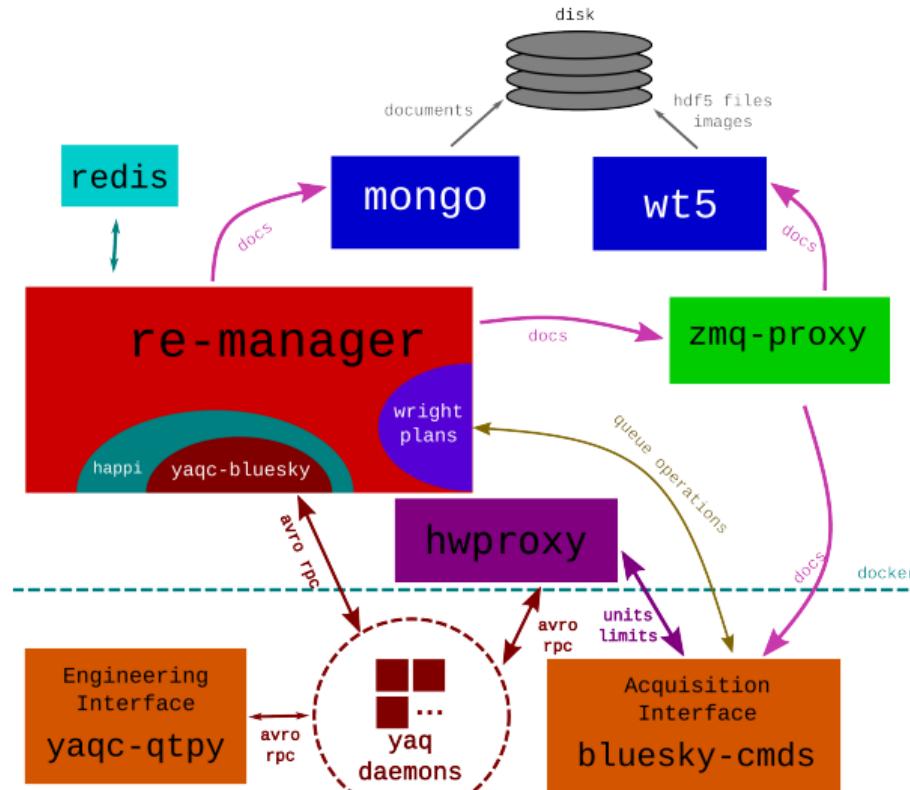
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bluesky-cmds 2022.7.0+fix_issues_39_40

Index	Type	Status	Description	REMOVE	LOAD
2	run_intensity	enqueued	[[{"daq": "w1", "w1": "delay_2"}]](width: 3.0, 'npts': 31, 'spectrometer': {"device": 'wm', 'method': 'static', 'center': 200.0})		
1	run_intensity	enqueued	[[{"daq": "w1", "w1": "delay_2"}]](width: 3.0, 'npts': 31, 'spectrometer': {"device": 'wm', 'method': 'track"})		
0	run_intensity	enqueued	[[{"daq": "w1", "w1": "delay_2"}]](width: 3.0, 'npts': 31, 'spectrometer': {"device": 'wm', 'method': 'scan", "width": -350.0, 'npts': 33})		
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	run_intensity	completed	[[{"wa": "w1", "w1": "crystal_2"}]](width: 3.0, 'npts': 31, 'spectrometer': {"device": 'wm', 'method': 'zero"})		
	run_intensity	completed	[[{"wa": "w1", "w1": "crystal_1"}]](width: 1, 'npts': 11, 'spectrometer': None)		
	grid_scan_wp	completed	[[{"daq": "w1", "d0": 0, "-1.0, 61, "ps": "d2", "d1": 0, "-1.0, 51, "ps": "d1", "d2": 0, "-1.0, 25, "ps"}]](constants: [])		
	grid_scan_wp	completed	[[{"daq": "w1", "d0": 0, "-1.0, 61, "ps": "d2", "d1": 0, "-1.0, 51, "ps": "d1", "d2": 0, "-1.0, 25, "ps"}]](constants: [])		
	grid_scan_wp	completed	[[{"daq": "w1", "d0": 0, "-1.0, 11, "ps": "d2", "d1": 0, "-1.0, 11, "ps"}]](constants: [])		
	grid_scan_wp	failed	[[{"daq": "w1", "d0": 0, "-1.0, 61, "ps": "d2", "d1": 0, "-1.0, 51, "ps": "d1", "d2": 0, "-1.0, 25, "ps"}]](constants: [])		
	grid_scan_wp	completed	[[{"daq": "w1", "d0": 0, "-1.0, 11, "ps": "d2", "d1": 0, "-1.0, 11, "ps"}]](constants: [])		
	grid_scan_wp	completed	[[{"daq": "w1", "d0": 0, "-1.0, 61, "ps": "d2", "d1": 0, "-1.0, 51, "ps": "d1", "d2": 0, "-1.0, 25, "ps"}]](constants: [])		
	grid_scan_wp	unknown	[[{"daq": "w1", "d0": 0, "-1.0, 61, "ps": "d2", "d1": 0, "-1.0, 51, "ps": "d1", "d2": 0, "-1.0, 25, "ps"}]](constants: [])		
	grid_scan_wp	stopped	[[{"daq": "w1", "d0": 0, "-1.0, 61, "ps": "d2", "d1": 0, "-1.0, 51, "ps": "d1", "d2": 0, "-1.0, 25, "ps"}]](constants: [])		
	grid_scan_wp	completed	[[{"daq": "w1", "w1": "delay_2"}]](width: 3.0, 'npts': 31, 'spectrometer': {"device": 'wm', 'method': 'track"})		
	grid_scan_wp	failed	[[{"daq": "w1", "w1": "delay_2"}]](width: 3.0, 'npts': 31, 'spectrometer': {"device": 'wm', 'method': 'scan", "width": -350.0, 'npts': 33})		
	grid_scan_wp	failed	[[{"daq": "w1", "w1": "delay_2"}]](width: 3.0, 'npts': 31, 'spectrometer': {"device": 'wm', 'method': 'track"})		
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	count	completed	[[{"daq": "w1", "w1": "delay_2"}]](width: 3.0, 'npts': 31, 'spectrometer': {"device": 'wm', 'method': 'track"})		

APPEND TO QUEUE

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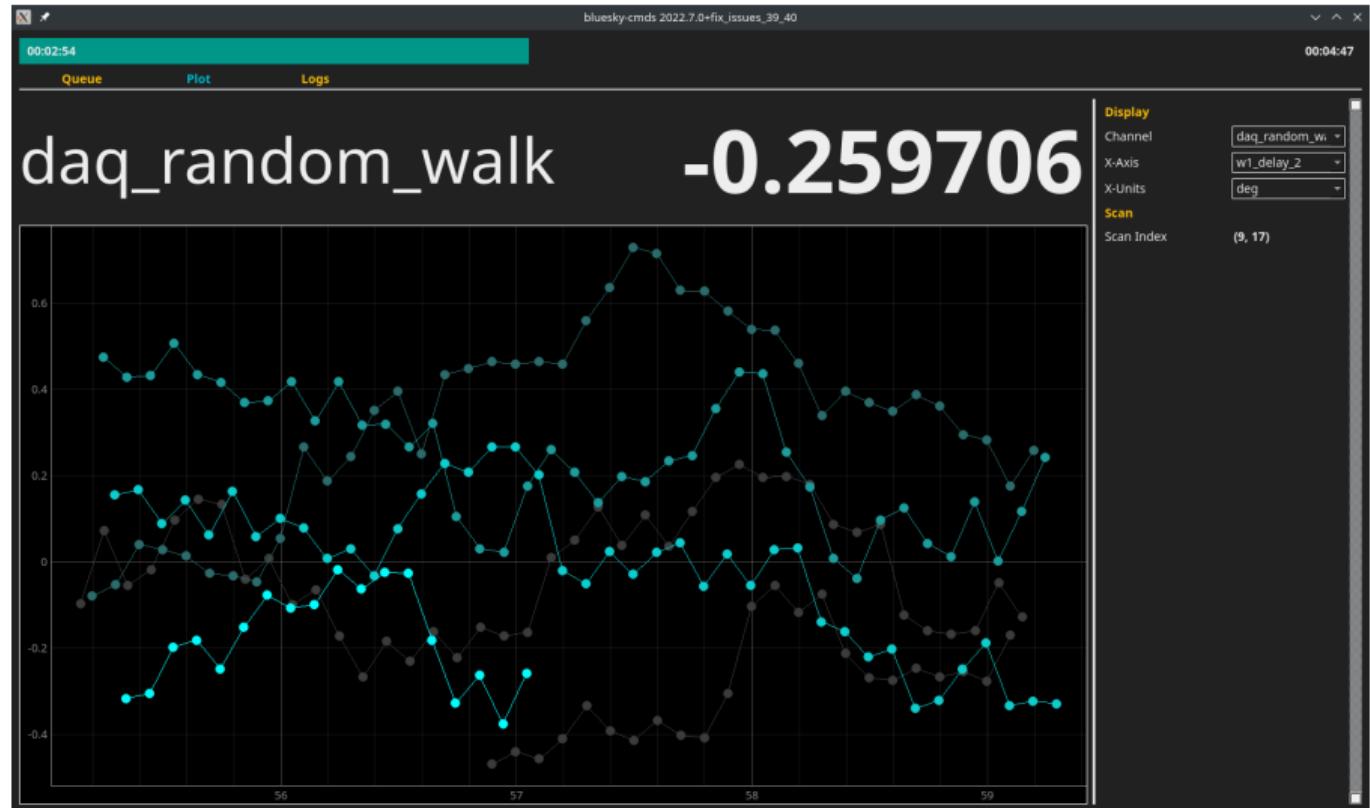
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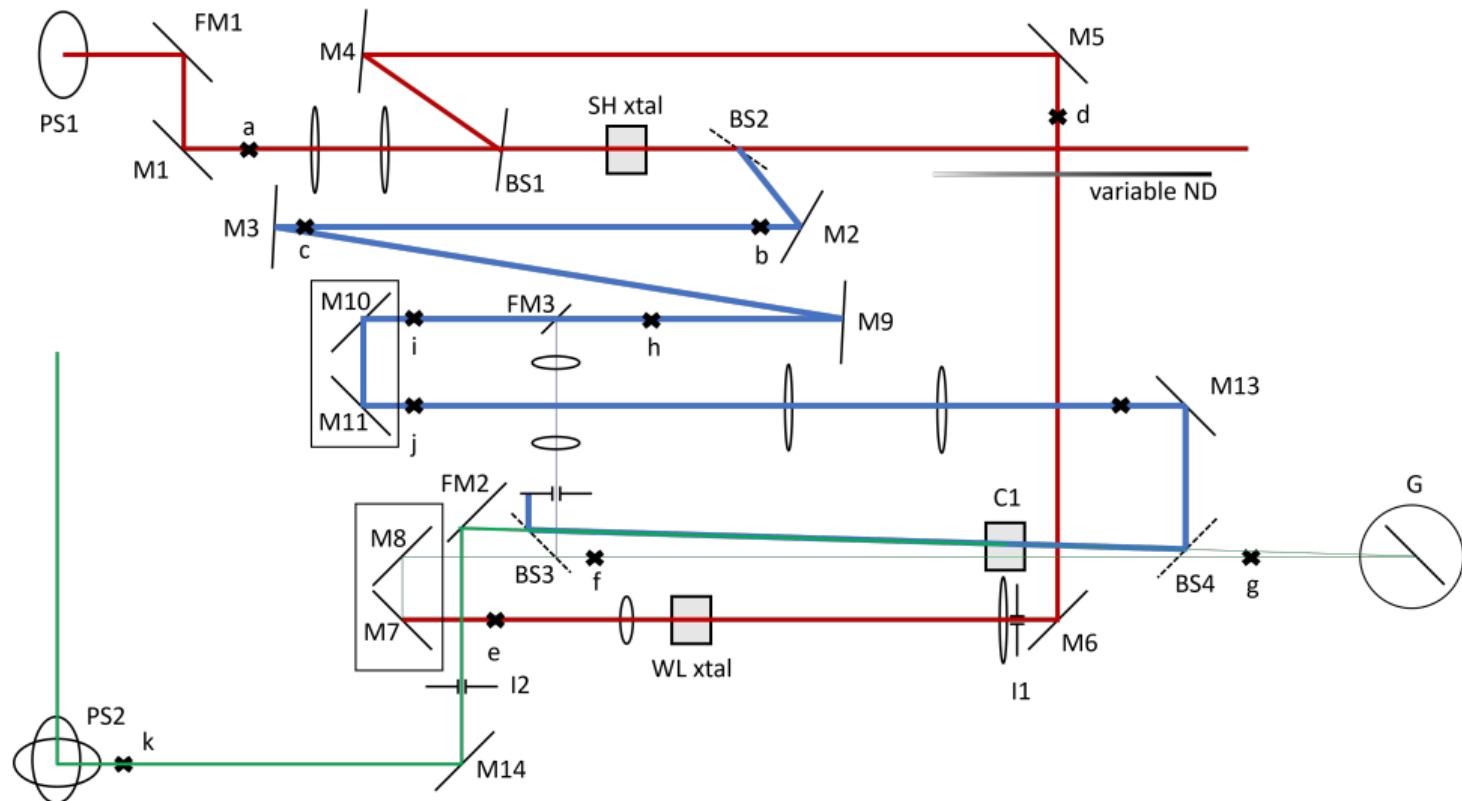
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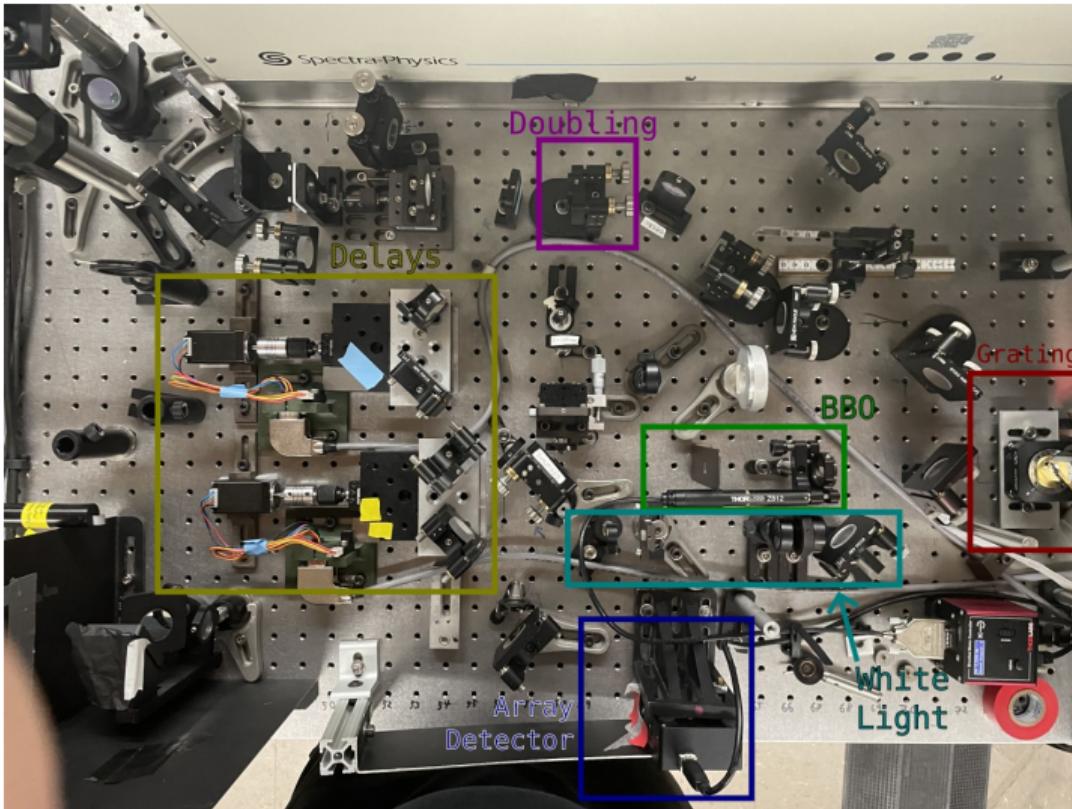
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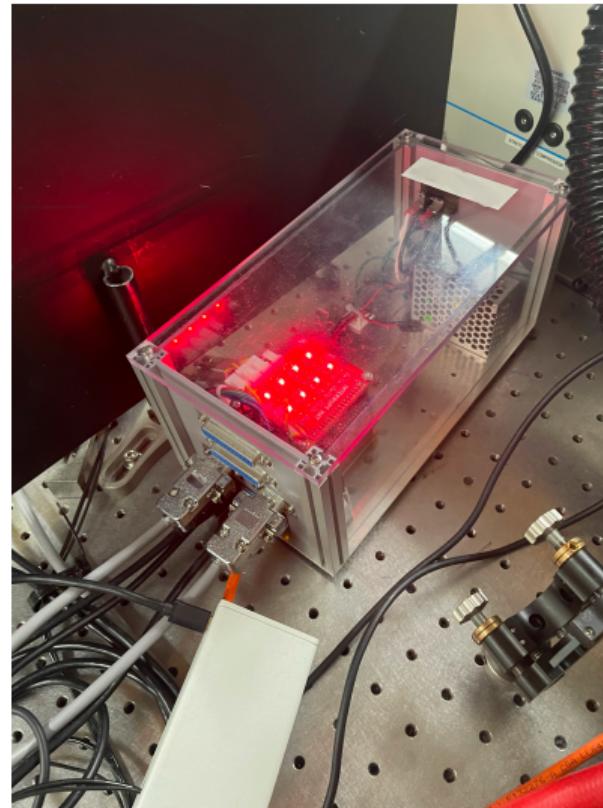
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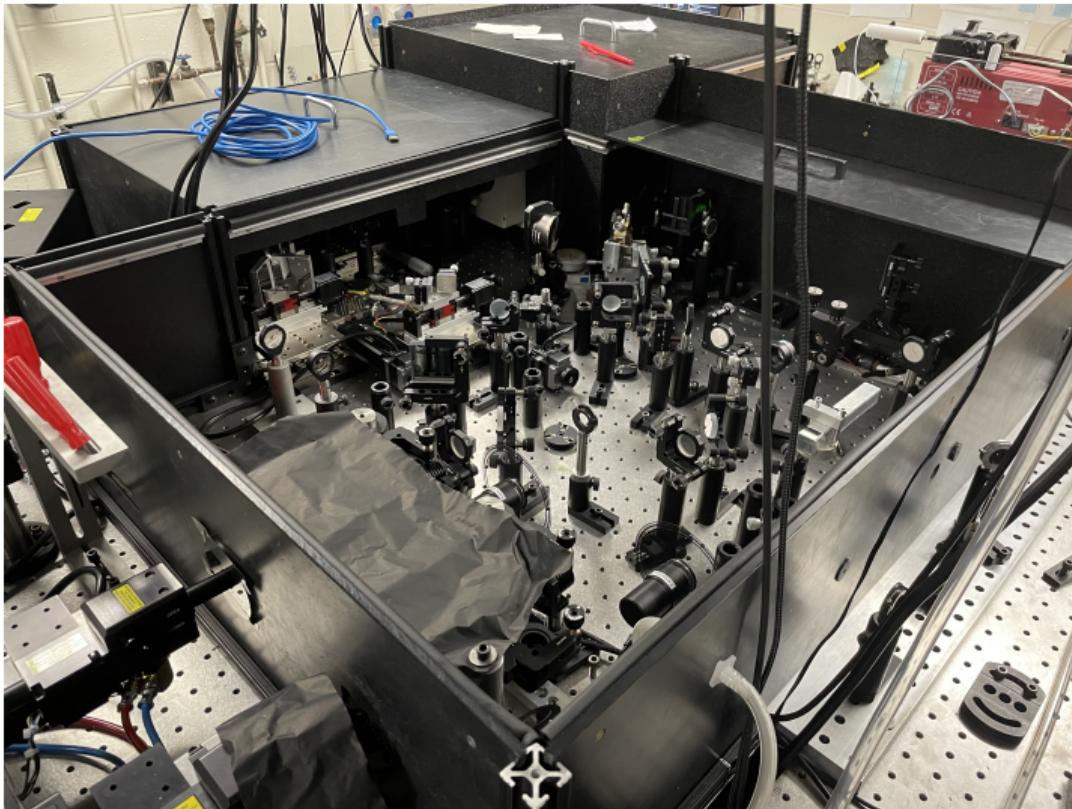
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