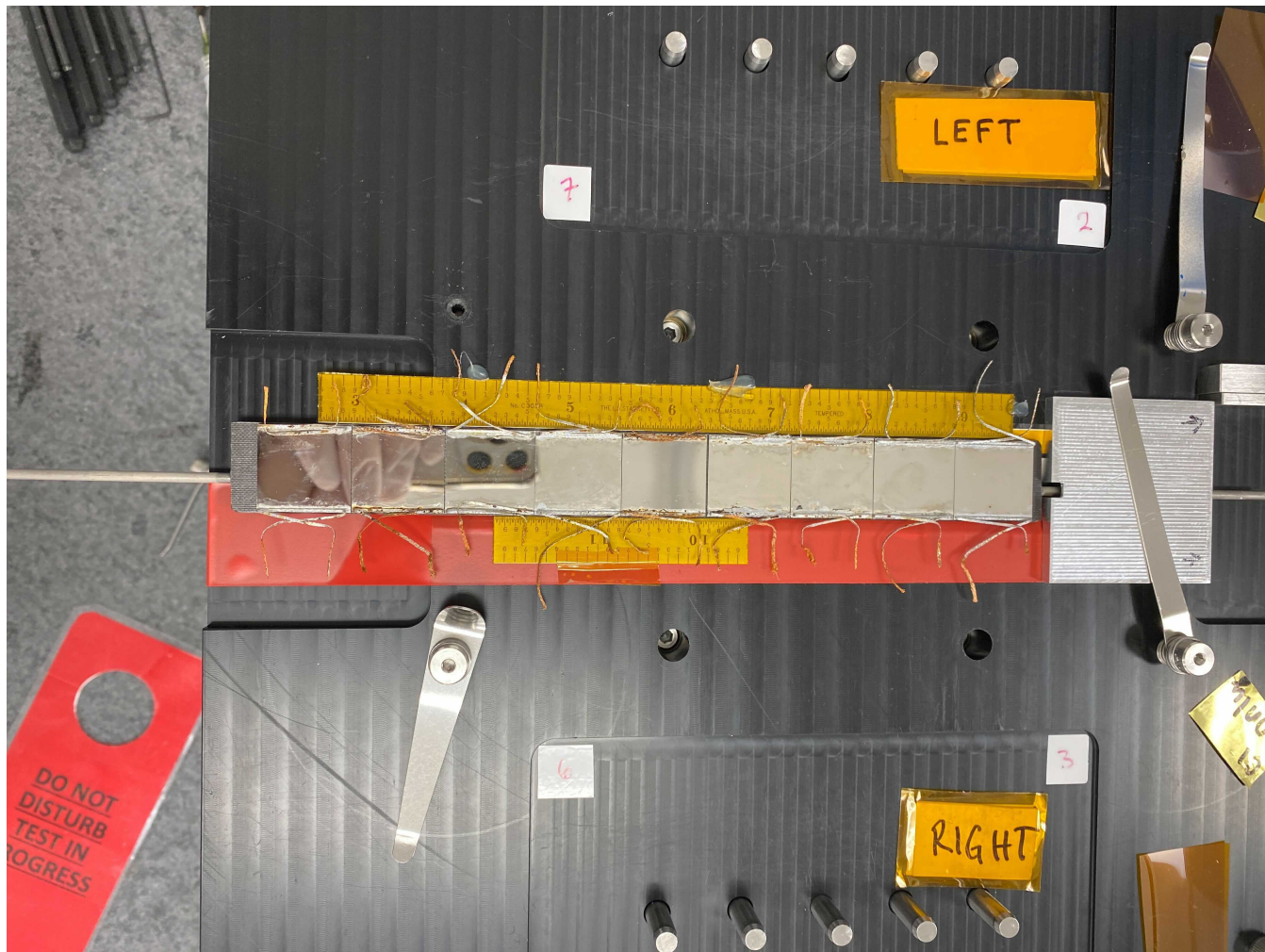


p19-0 stave anatomy

All heaters are from batch "19-0 stave singlets" (see [Heaters.xlsx](#)). Heaters were selected to fit together. Heater soldering information is available here: [Dummy Heaters#SolderingProcedures](#). Please see the PDF attached to that page.

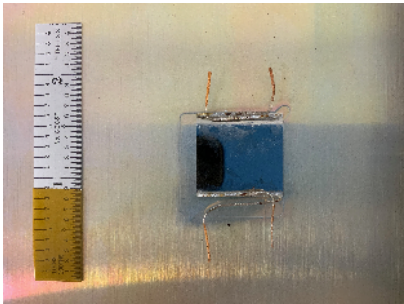
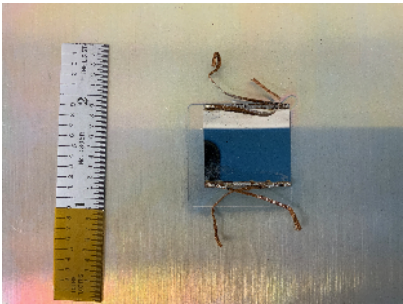
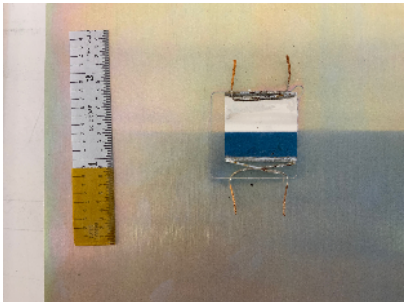
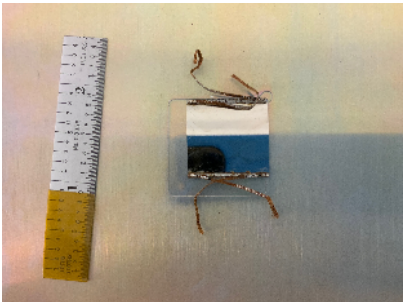
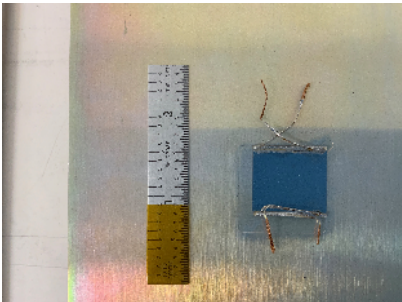
Fully loaded stave, 16 Sep 2021

Module positions: We number the modules 1-9 from left to right in this image



Observations, properties, and measurements by loaded position

Stave position	1	2	3
Loading date	14 Sep 2021		
Configuration	1		
Syringe ID	2021-A-24		
Loading position	C1 S1	C1 S2	C1 S3
Heater ID	#11	#13	#6
Properties	C1 S1 (#11)	C1 S2 (#13)	C1 S3 (#6)
Carton ID	2	2	1
Heater ID in carton	4	6	7
Length (mm)	21.26	21.26	21.3

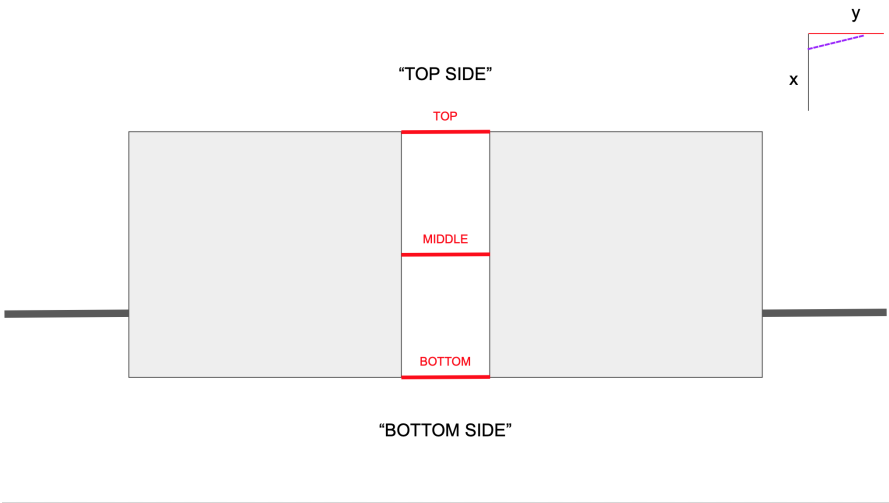
Width (mm)	20.48	20.48	20.47
Thickness (mm)	0.26	0.26	0.26
Mass before soldering (g)	0.3	0.3	0.3
Mass after soldering (g)	0.6	0.6	0.5
Resistance (Ω) 01 Sep 2021	1.8	1.9	2.0
Resistance (Ω) 13 Sep 2021	2.1	1.9	2.2
Resistance (Ω) (loaded heater, top left to bottom right) 20 Sep 2021	2.4	2.0	2.0
Resistance (Ω) (loaded heater, top right to bottom left) 20 Sep 2021	2.1	2.0	1.9
Visual inspection	C1 S1 (#11)	C1 S2 (#13)	C1 S3 (#6)
Before IPA wash	 • ethanol wash!		
After IPA wash	 • ethanol wash!		 Wires too sensitive for more cleaning
Pre-loading checks	C1 S1 (#11)	C1 S2 (#13)	C1 S3 (#6)
Expected glue layer thickness (m)	100-200	100-200	~200? Higher?
Dispensing & Mounting	C1 S1 (#11)	C1 S2 (#13)	C1 S3 (#6)
Dispense time	11:59 AM	12:27 PM	12:54 PM
Mount time	Noon, 12:00 PM	12:28 PM	12:55 PM
Estimated glue mass per star (mg)	77.5	73.3	75.3
Averaged mass tests	#6-9	#10-16	#19-21
Time elapsed since syringe fully thawed (minutes)	75	103	130

Hold time (minutes)	20	20	95
Comments			Stave moved so there is a large gap between C1 S2 and C1 S3. S3 also seems to be very high (probably glue was too old)

Loading experience

Date	Personnel	Syringe ID	Modules	Photos	Records
14 Sep 2021	Josh (loader), Hannah (robot operation)	2021-A-24 2021-A-25	All configuration 1	https://photos.app.goo.gl/5Shzj4EU5zfVos8M8	https://atlas.cr.slac.stanford.edu:8080/Clean+Room+Activities/91  2021-09-14 p19-...ading day 1.pdf
15 Sep 2021	Josh (loader), Hannah (robot operation)	2021-A-26 2021-A-27	All configuration 2	https://photos.app.goo.gl/rSAu5qn5jbhXpMFN7	https://atlas.cr.slac.stanford.edu:8080/Clean+Room+Activities/92  2021-09-15 p19-...ding day 2 .pdf
20 Sep 2021	Inspecting the loaded stave			https://photos.app.goo.gl/bU55sQPxWB8Gz5DPA	
23 Sep 2021	Preparing the stave for testing			https://photos.app.goo.gl/fRg8cn8186zqXjuR9	

Metrology results with the CMM



DISTANCES (MICRONS)

Area	C1S1-C1S2	C1S2-C1S3	C1S3-C1S4	C1S4-C1S5	C1S5-C2S2	C2S2-C2S3	C2S3-C2S4	C2S4-C2S5
TOP	220	300	44 (OVERLAP)	131	518	19	230	58
TOP Y (ABS)	219	294	14 (OVERLAP)	126	517	12	218	23
MIDDLE	215	284	50	134	477	83	173	76
MIDDLE Y (ABS)	214	279	32	126	475	82	163	58
BOTTOM	210	269	86	140	437	153	117	104
BOTTOM Y (ABS)	209	265	78	125	432	152	108	93

