

ArCLight Production

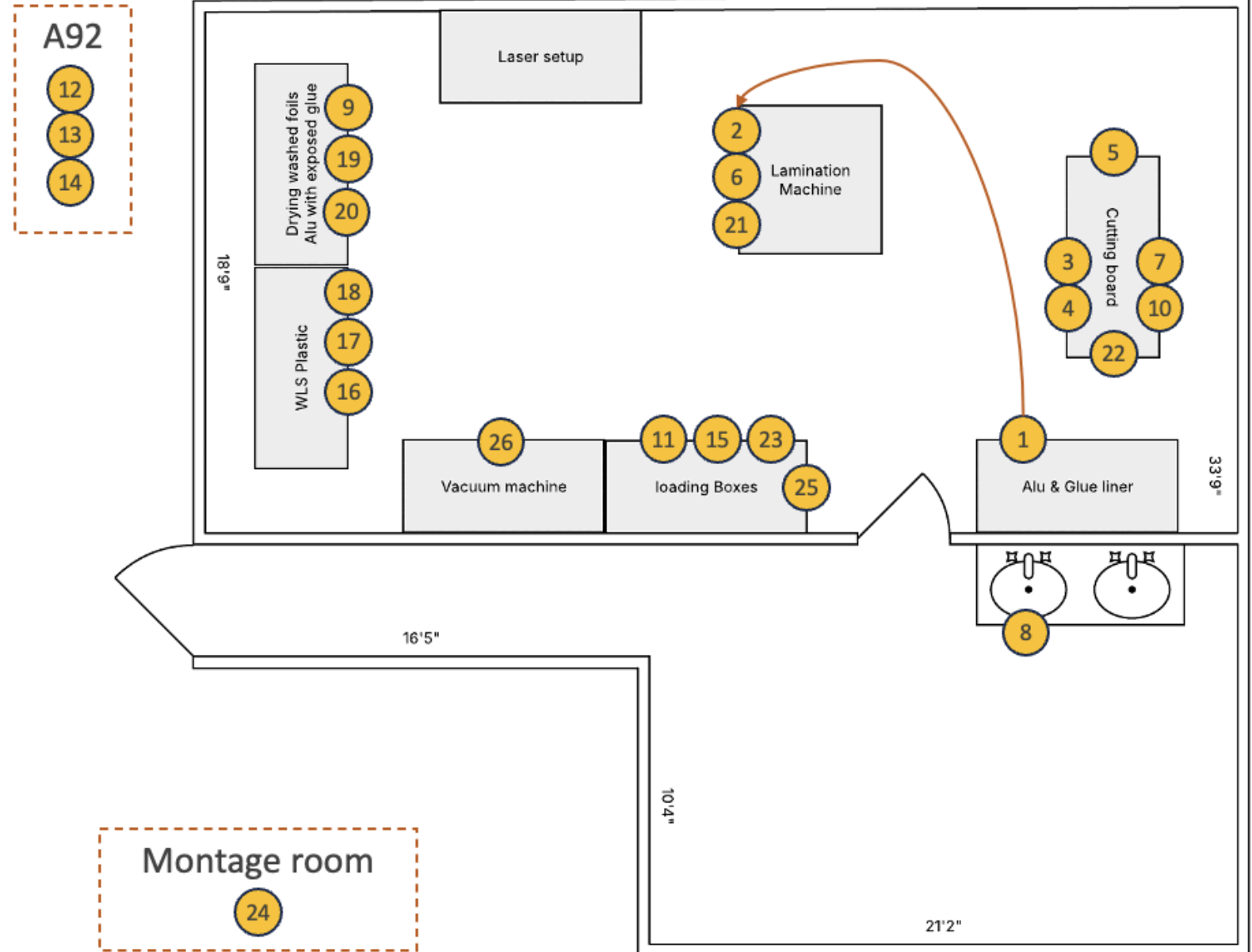
Status, Plan and Schedule

Saba Parsa, Johannes Furrer

4 August 2026

Current Layout of clean room & Tasks

1. Alu cleaning with Aceton + Label ID
2. Glue on Alu Lamination
3. Cutting glue extra edges + removing liner
4. Cutting foil from the Roll + protection liner
5. Flattening the foil under alu plate
6. Foil on Alu Lamination + Label ID
7. Tape Foil edges + stick it to holder
8. Wash Foil with water soap, dry with wipes
9. Let foil dry in a clean spot
10. Remove tape + cut extra edges
11. Transport to A92 in Box
12. Wipe dust with TX wipe
13. Apply antistatic gun
14. Coating with TPB
15. Transport coated foil to clean room
16. Remove protection foil from WLS (Log serial ID)
17. Clean WLS from residues with dry or moist TX wipe
18. Apply antistatic gun
19. Remove TPB foil from Alu with its liner
20. Leave Alu with exposed glue on clean spot
21. Foil on WLS lamination
22. Cut foil extra edges + stick edge foils (Label write side of screws)
23. Transport to Montage room
24. QC tests
25. Transport to clean room
26. Vacuum and seal in ESD bag



ACL assembly status

Status May: Dominik + Johannes

- 8 TPB-DF @24cm

Status June: Saba + Johannes

- 4 TPB-DF @24cm
- 6 ACL with TPB foils @24cm
- 1 ACL found in Clean room (No label)

Status July: Saba + Johannes + Summer students

- 12 TPB-DF @12 cm
- 9 ACL

Status August: Johannes + Summer students

Dichroic Foil usage

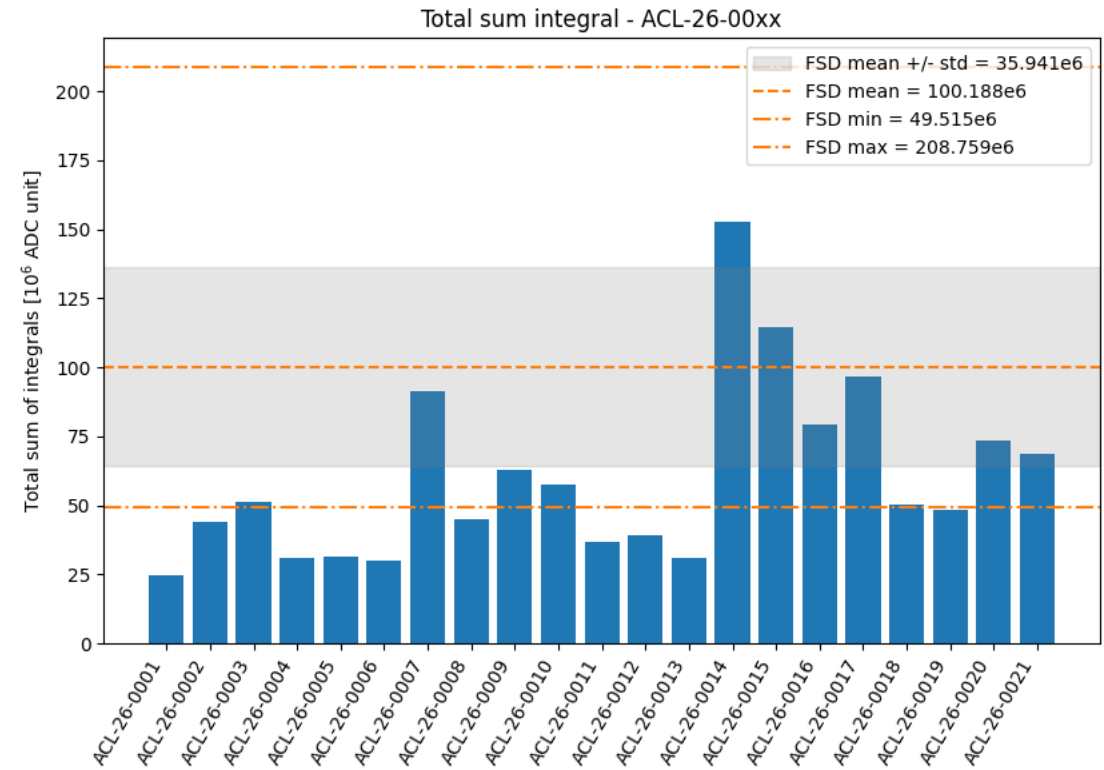
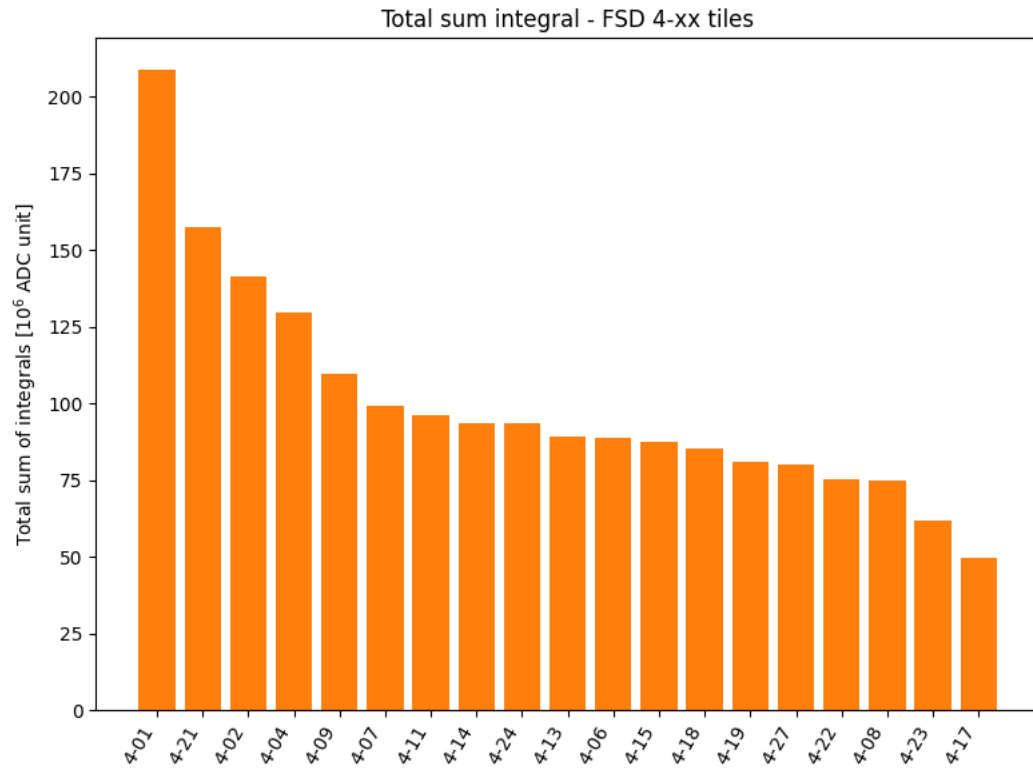
DF-PA Chill roll ordered on 25.11.2025 is finished

- How much DF waste we had: 22%
 - Reasons to discard a cut foil:
 - Scratches or dirty glue residuals
 - Wrinkles air under liner
 - Discarded foils can be used for edge laser cuts
 - Fraction of good ACLs out of all TPB foils: 21%
-
- Order another foil -> Delivered

If we produce 5 TPB coated foils per week, one roll will finish in 6 weeks

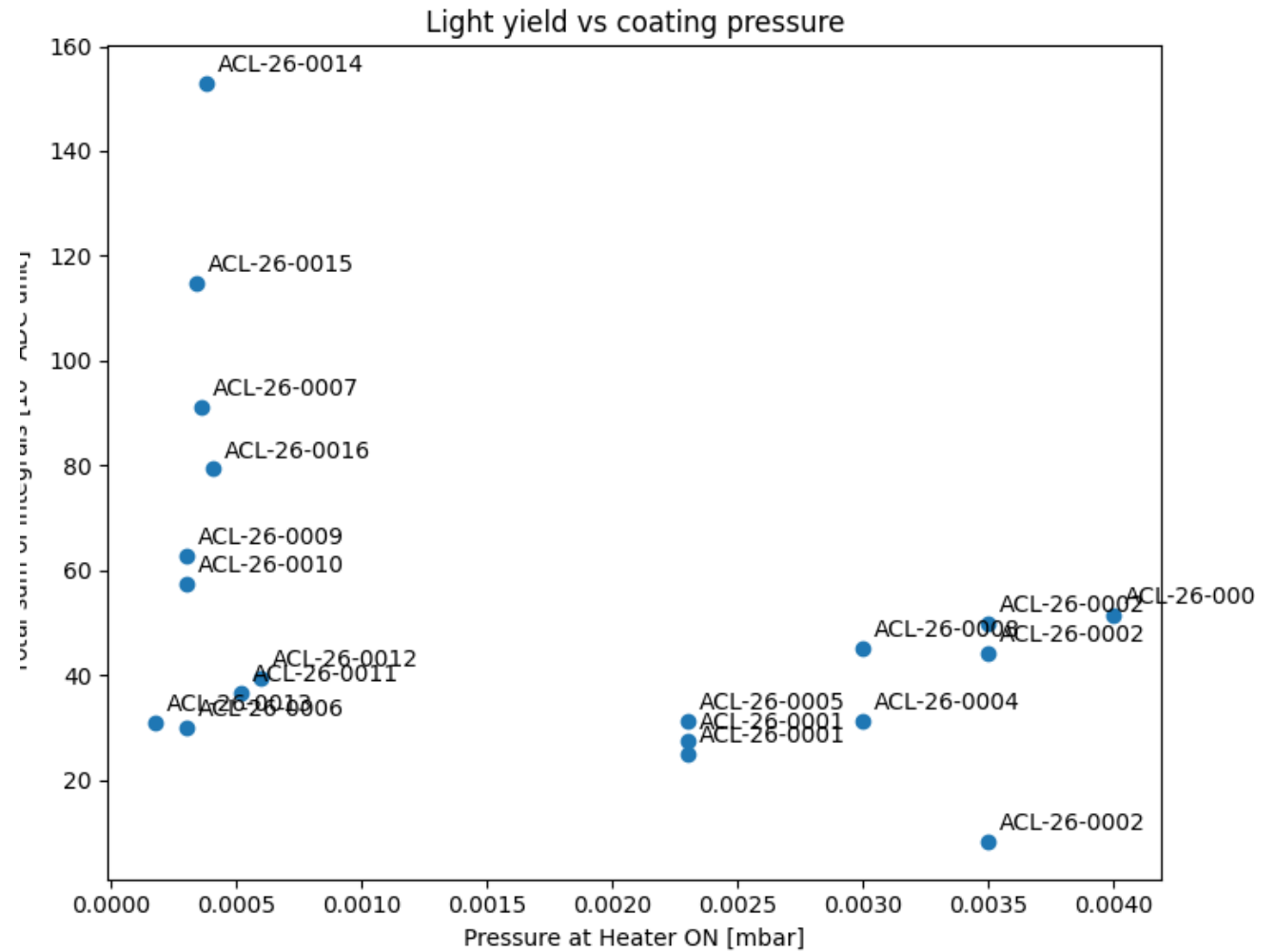
<i>Dichroic Foil usage assessment</i>	<i>units</i>	<i>Percentage %</i>
Max 30x50 sheets from entire Roll:	32 (36 without margin)	100%
Total evaporated foils:	30	93%
Total ACLs assembled:	21	65%
Total good ACLs:	7	21%

Scan Results



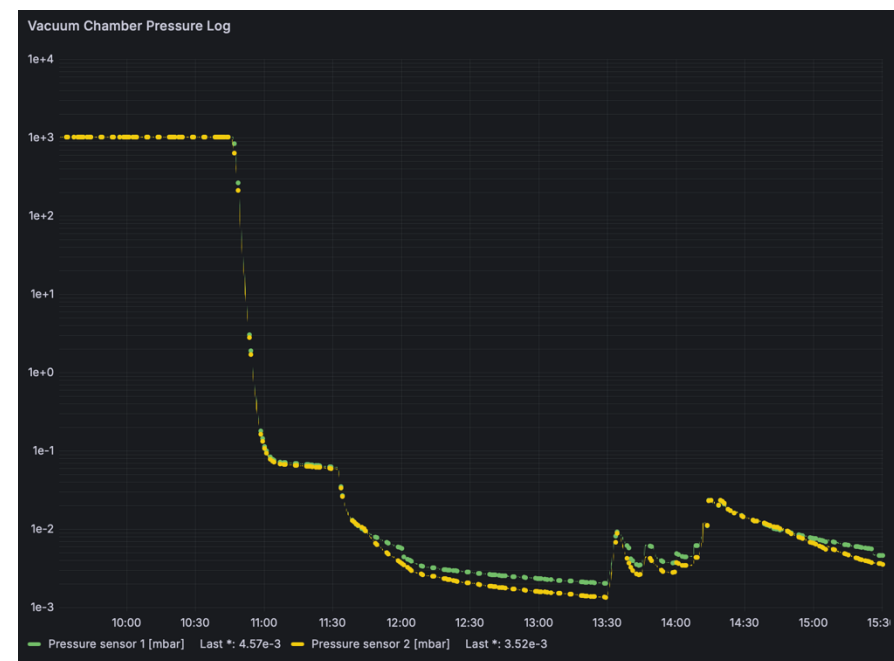
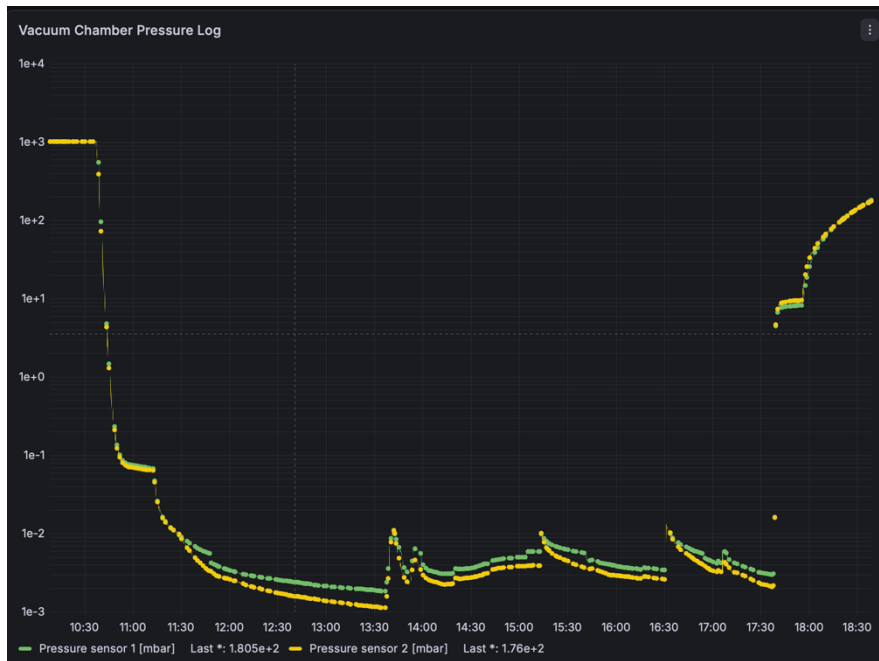
Vacuum Pressure

- There is no apparent correlation between the quality of ACL in terms of LY and the Vacuum Pressure.



Vacuum Pressure Turbo pump

Something is going on



Weekly plan

To proceed, we need a rigorous plan for producing 5 per week

- Glue on Alu + Foil on Alu preparation + washing (2h+2pp per two samples) Monday, Wednesday, Friday
- Drying at least (12h+0pp)
- ~~• Removing tape and Cutting extra edge (0.5h + 1pp per two samples)~~
- Coating (6h+1pp per sample) Every day
- Assembling ACL (2h+2pp per three samples) Tuesday, Thursday
- Scan ACL (2h+1pp per sample)
- Plotting scan data (1h+1pp per sample)

➤ Total: 20h+2pp and 50h+1pp and 36h+0pp per week

Weekly workload of ArCLight

Day of Week	8:00	10:00	12:00	14:00	16:00	overnight
Monday	Start coating	Prepare foil on Alu	Start scan	Stop coating	Start plotting	Dry washed foils
Tuesday	Start coating	Assemble ACL + cut foil	Start scan	Stop coating	Start plotting	
Wednesday	Start coating	Prepare foil on Alu	Start scan	Stop coating	Start plotting	Dry washed foils
Thursday	Start coating	Assemble ACL + cut Foil	Start scan	Stop coating	Start plotting	
Friday	Start coating	Prepare foil on Alu	Start scan	Stop coating	Start plotting	Dry washed foils

Make a detailed Omni plan with operator 1 and operator 2

Backup

TPB Coating on Dichroic Foil

May: Dominik + Johannes:

- 8 TPB-DF was produced

June: Saba + Johannes

- 4 TPB-DF was produced

psql database on AC49 is used for TPB foil production info:

- psql acl_production
 - \d tpb_df
 - SELECT * FROM tpb_df

```
acl_production=> \d tpb_df
```

Column	Type	Collation	Nullable	Default
id	integer		not null	nextval('tpb_df_id_seq'::regclass)
coating_id	character varying(100)		not null	
coating_date	date			
dichroic_foil_batch_id	character varying(100)			
glue_type	character varying(100)			
glue_reused	boolean			
holder_used	boolean			
soap_type	character varying(100)			
drying_wipes	character varying(255)			
operator	character varying(100)			
tpb_tray_status	character varying(100)			
sample_height	real			
heater_on_time	time without time zone			
heater_on_pressure_mbar	real			
heater_setpoint_c	real			
chiller_setpoint_c	real			
heater_off_time	time without time zone			
coating_duration_min	real			
visual_assessment	character varying(255)			
comment	text			
deposition_thickness_nm	real			
created_at	timestamp without time zone			CURRENT_TIMESTAMP
updated_at	timestamp without time zone			CURRENT_TIMESTAMP
used_for_acl_id	text			

Indexes:
"tpb_df_pkey" PRIMARY KEY, btree (id)

Triggers:
update_tpb_df_updated_at BEFORE UPDATE ON tpb_df FOR EACH ROW EXECUTE FUNCTION update_updated_at_column()

```
acl_production=> SELECT coating_id, operator, coating_date, glue_type, drying_wipes, sample_height, visual_assessment, used_for_acl_id, comment FROM tpb_df ORDER BY coating_id;
```

coating_id	operator	coating_date	glue_type	drying_wipes	sample_height	visual_assessment	used_for_acl_id	comment
DSG-01	Dominik	2026-05-20	Post-it-BATCH-1-Apr2026	no_fuzz	24	fail		Edges were not coated, Alu was bent, poor cont
DSG-02	Dominik	2026-05-21	Post-it-BATCH-1-Apr2026	no_fuzz	24	fail		
DSG-03	Dominik	2026-05-22	Post-it-BATCH-1-Apr2026	no_fuzz	24	fail		
DSG-04	Dominik		Post-it-BATCH-1-Apr2026	no_fuzz	24	fail		
DSG-05	Dominik		Post-it-BATCH-1-Apr2026	no_fuzz	24	fail		
DSG-06	Dominik		Post-it-BATCH-1-Apr2026	no_fuzz	24	fail		None uniform cleaning strips on one side
DSG-07	Dominik		Post-it-BATCH-1-Apr2026	no_fuzz	24	pass	ACL-26-0001	Clipper marks on the sides
DSG-08	Dominik		Post-it-BATCH-1-Apr2026	no_fuzz	24	pass	ACL-26-0005	Clipper marks on the sides
DSG-09	Saba+Johannes	2026-06-03	Post-it-BATCH-1-Apr2026	no_fuzz_wipes	24	pass	ACL-26-0006	Alu plate fell into the TPB tray when removing
DSG-10	Saba+Johannes	2026-06-09	3M-strong	no_fuzz_wipes	24	pass	ACL-26-0003	Alu plate fell into the TPB tray when removing
DSG-11	Saba+Johannes	2026-06-11	Post-it-BATCH-1-Apr2026	TX2069 + no_fuzz	24	pass	ACL-26-0002	Minor scratches on the foil.
DSG-12	Saba+Johannes	2026-06-16	Post-it-BATCH-1-Apr2026	TX2069 + no_fuzz	24	pass	ACL-26-0004	The wipe TX2069 seems to smear the water rather

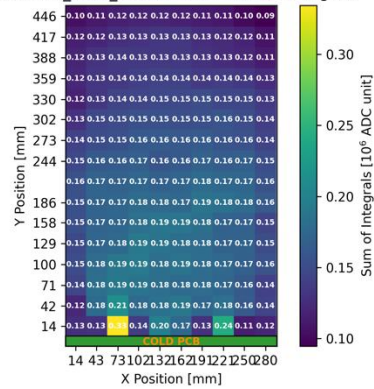
(12 rows)

Lessons learnt

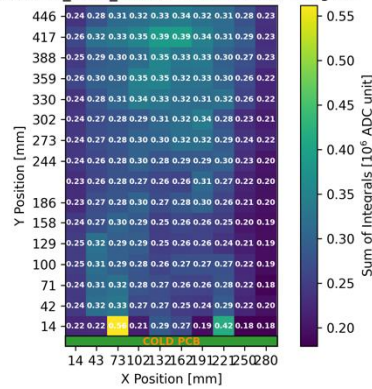
- The feedback turnaround is still slow.
 - Took one month until we could compare the 6 produced ACL.
 - Is there any quality and pressure correlation?
 - Expand plotting tools for a measure of uniformity for each bin >> establish a reference value for each bin-> plot variation to ref.
- Adding info to database:
 - Separate column for Washing date vs Coating date (Maybe it affects coating if washed 6 days ago!)
 - Add ID number to the Alu plates with glue, so we can track how many times they are used
 - Add time duration when the plate is below a limit pressure in chamber >> see how much outgassing time it had

Scanner SUM plots, Serie ACL-26-xx

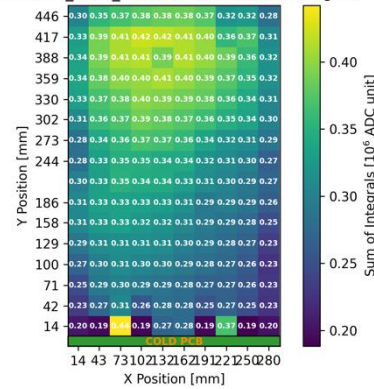
20260703_1451_ACL-26-0001 - Sum of Integrals



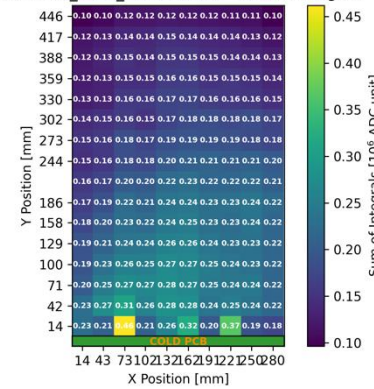
20260706_0940_ACL-26-0002 - Sum of Integrals



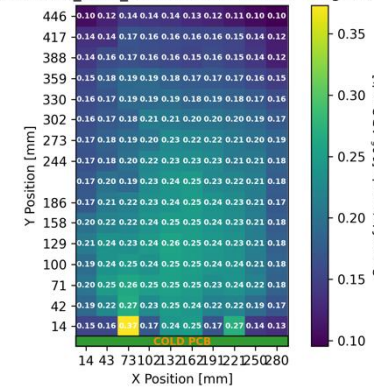
20260701_1412_ACL-26-0003 - Sum of Integrals



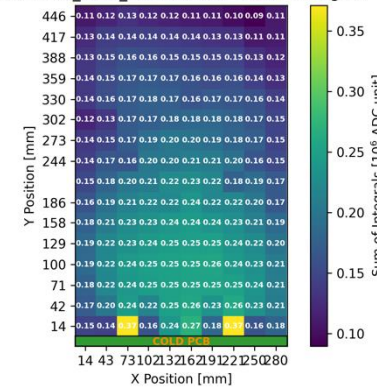
20260702_1038_ACL-26-0004 - Sum of Integrals



20260702_1540_ACL-26-0005 - Sum of Integrals



20260702_1750_ACL-26-0006 - Sum of Integrals



Scanner SUM plots, Serie FSD-ACL-4-xx

