

# STT - THERMOTESTS

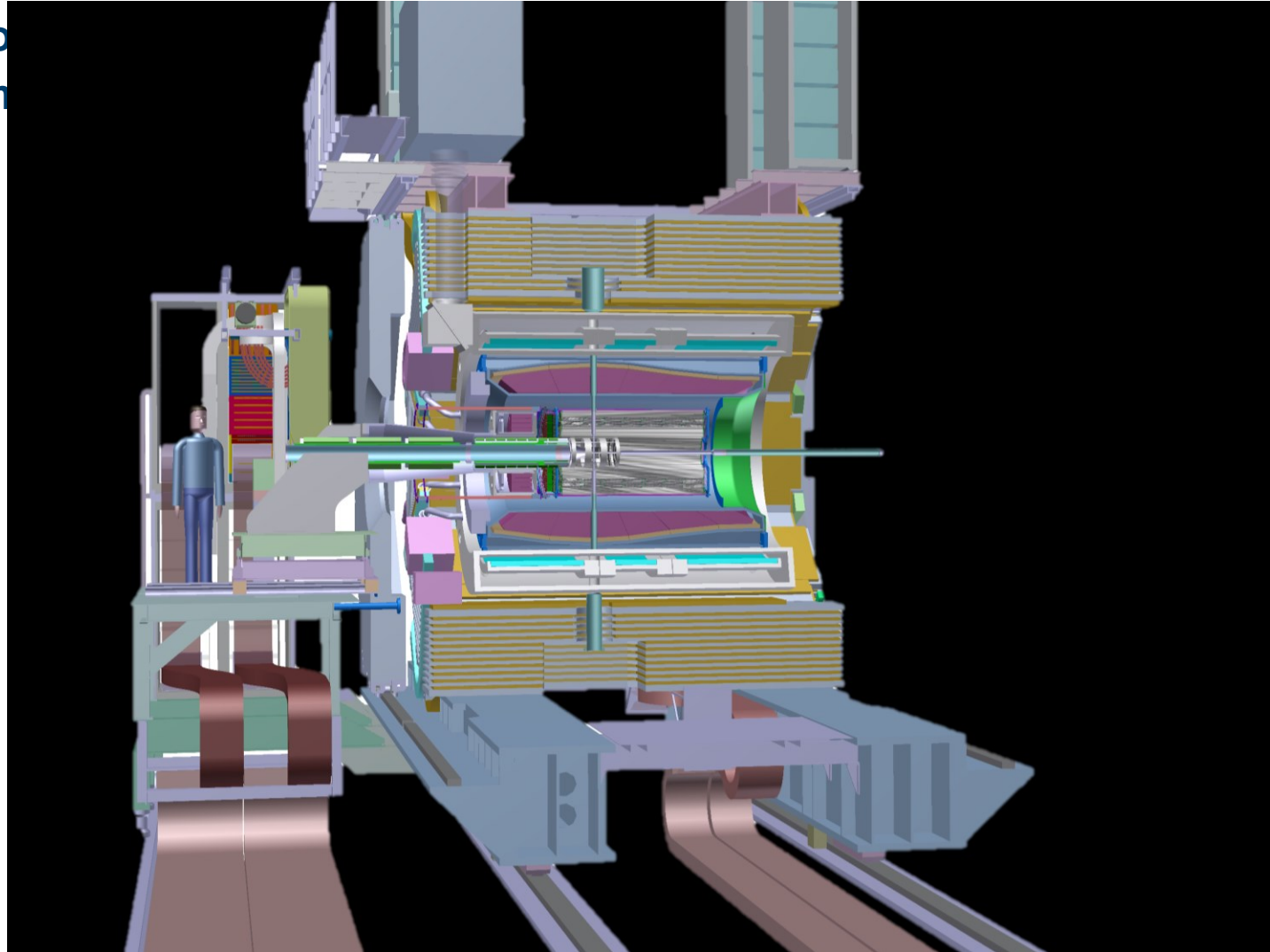
27.10.2020 | A.DERICHES

# CONTENT

- Intro thermic-design PANDA STT READOUT
- Measurement FAN\_MOD
- Measurement MVD\_influence
- Upgrade Flowmeter
- Cablechannel/ Cablemanagement

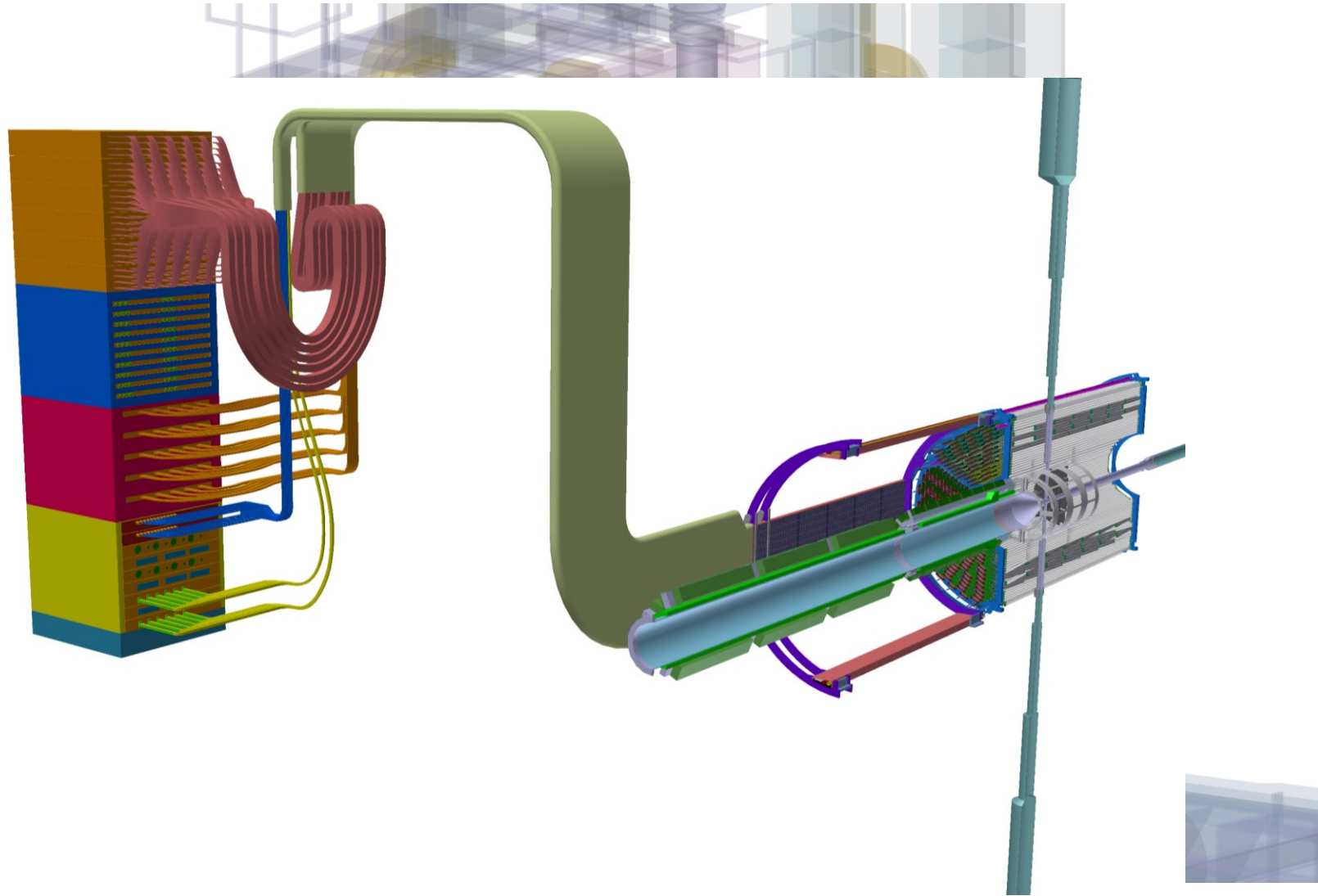
# INTRO THERMIC-DESIGN PANDA STT READOUT

- Minimum Cooling flow
- Stable operation tem



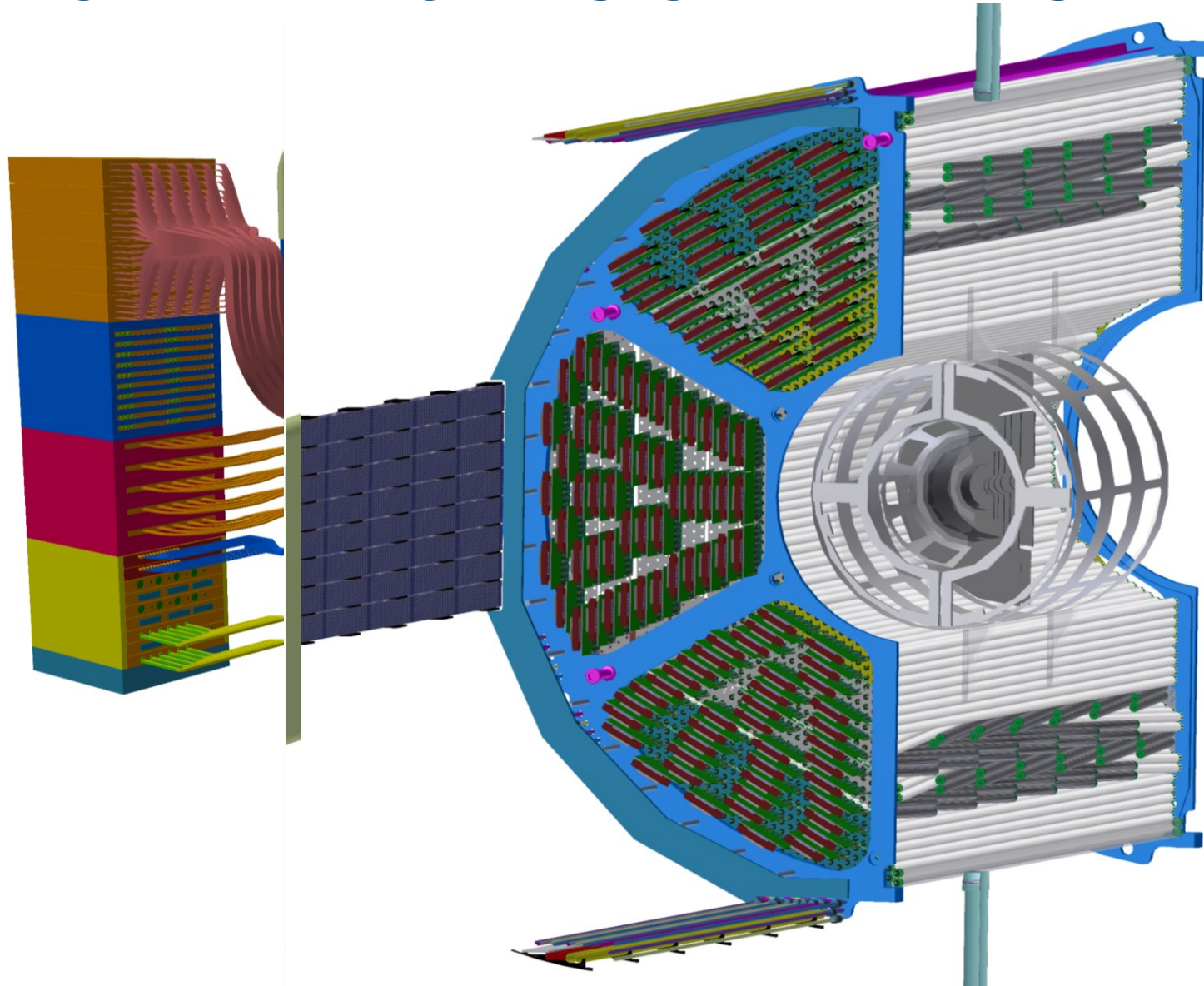
# INTRO THERMIC-DESIGN PANDA STT READOUT

STT



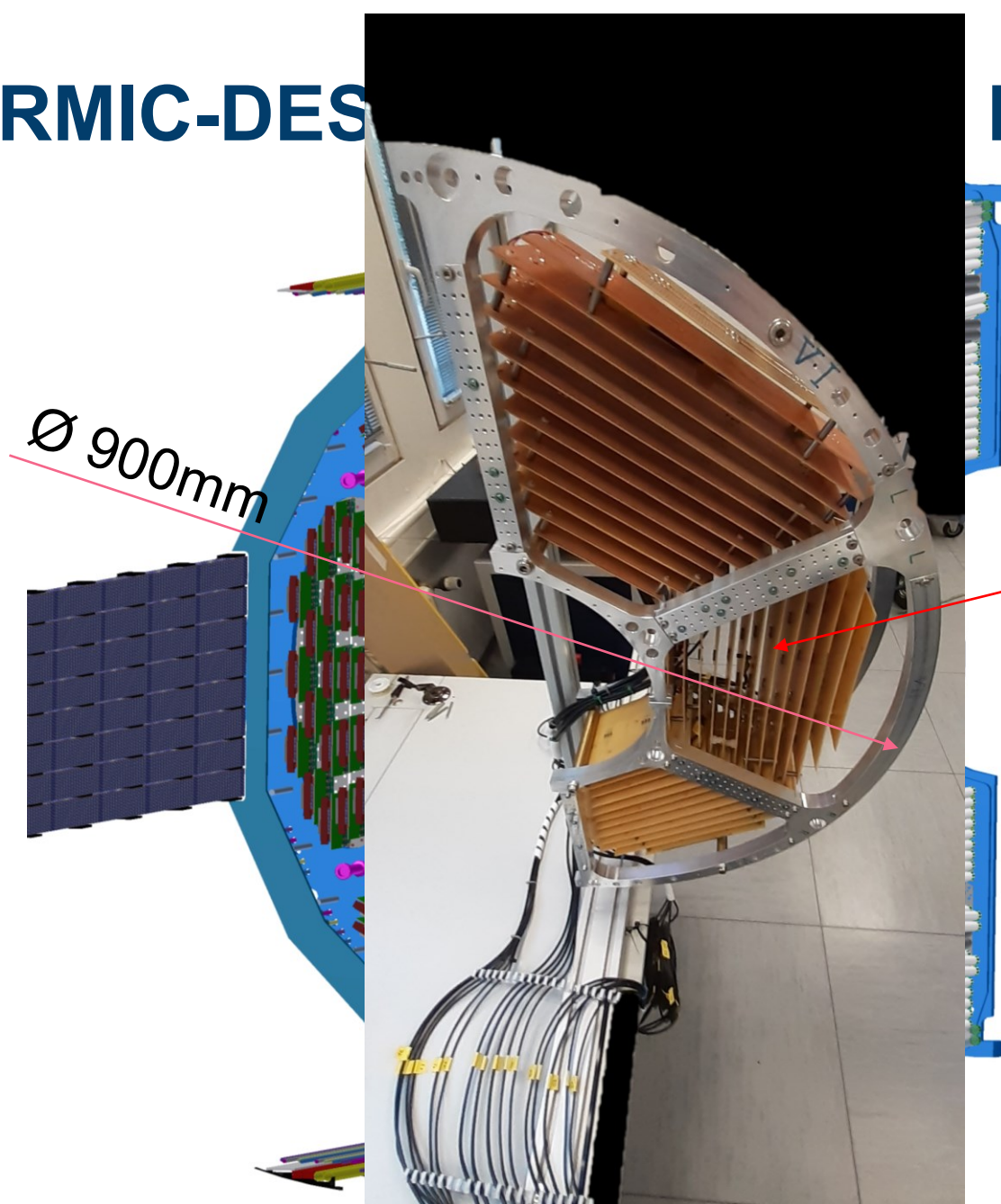
# INTRO THERMIC-DESIGN PANDA STT READOUT

STT



# INTRO THERMIC-DES

Flex. Prototype



# READOUT

1 Card  $\approx$  600mW

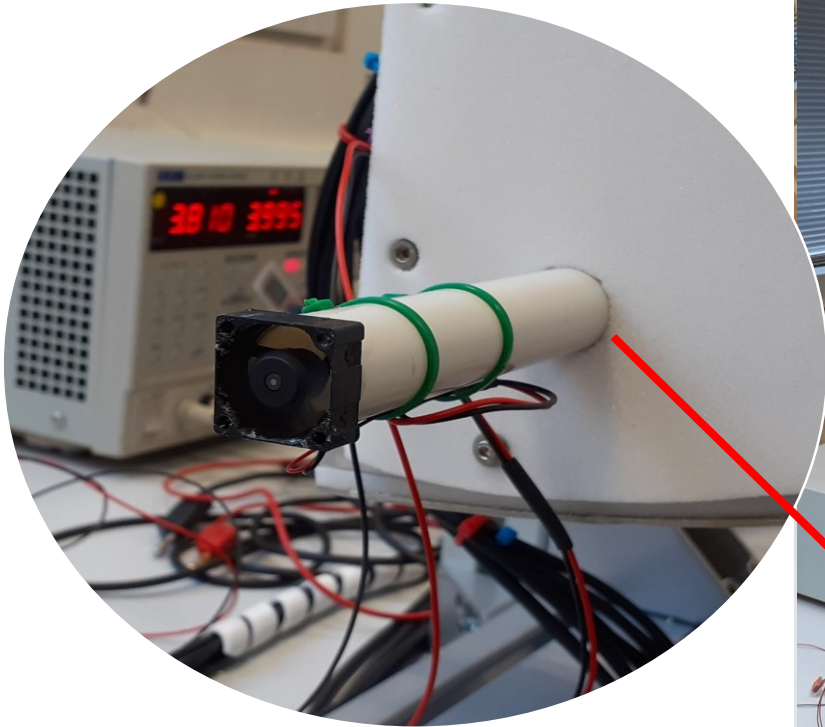
3 Res  $\approx$  1W<sub>max</sub>

$n_{\text{res}} = 393 \triangleq 131$  Cards

# INTRO THERMIC-DES

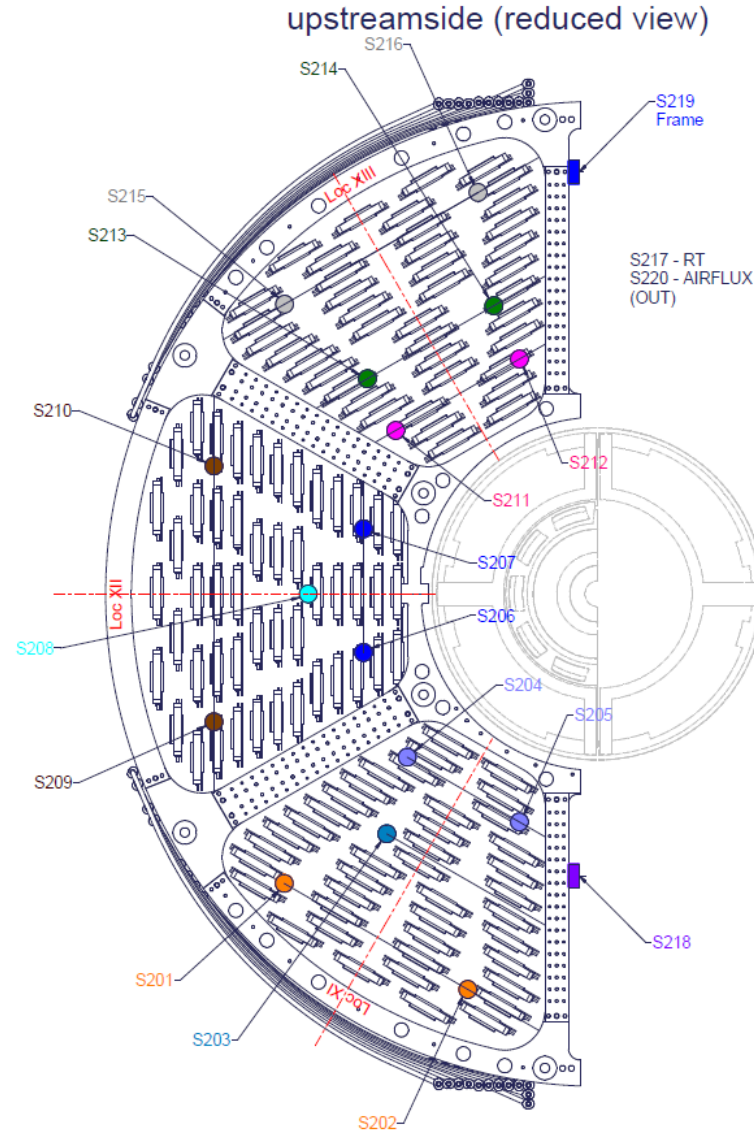
Caps + Fans(22L/min, 64L/min, 173L/min)

# READOUT



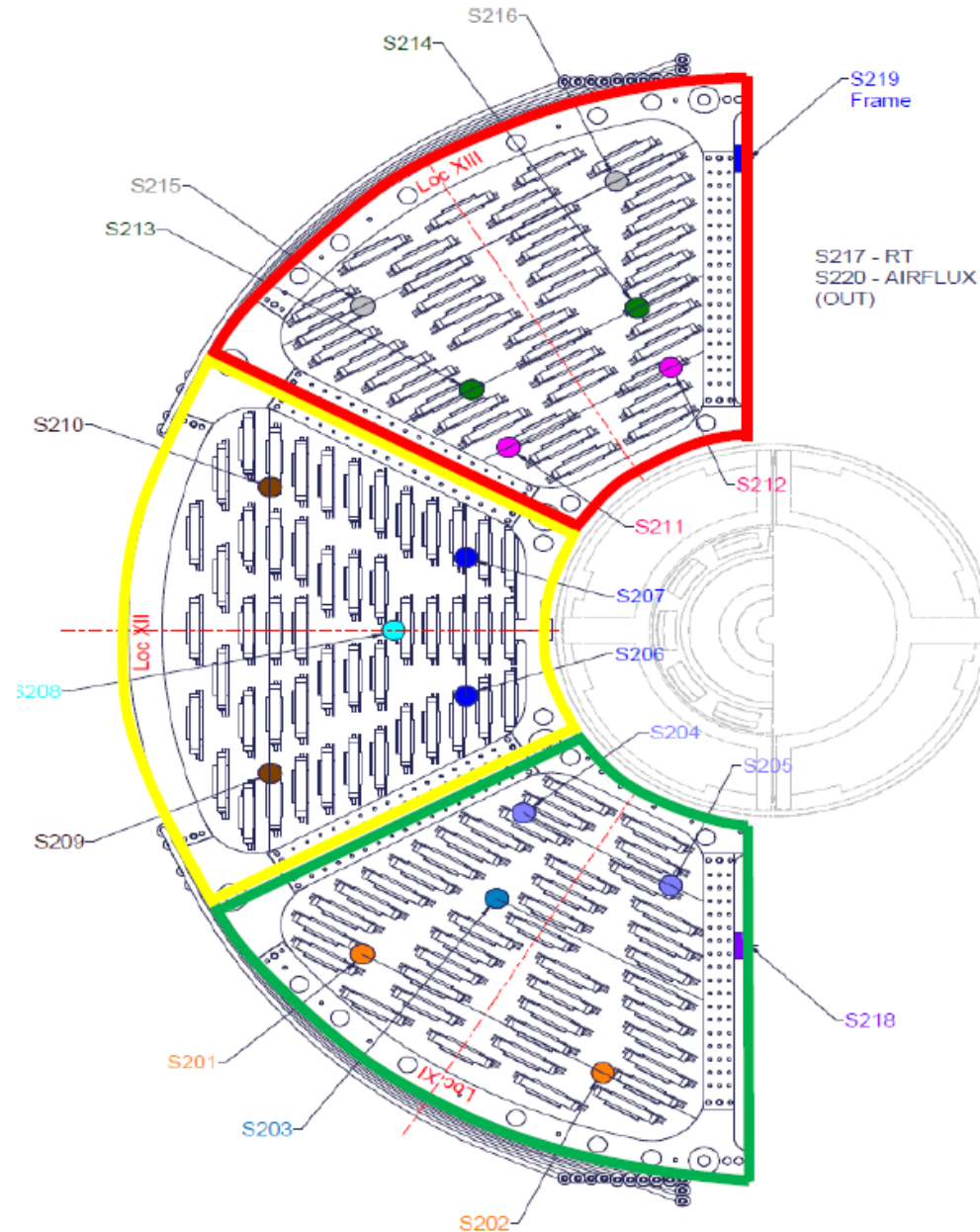
# INTRO THERMIC-DESIGN PANDA STT READOUT

## Measurement layout

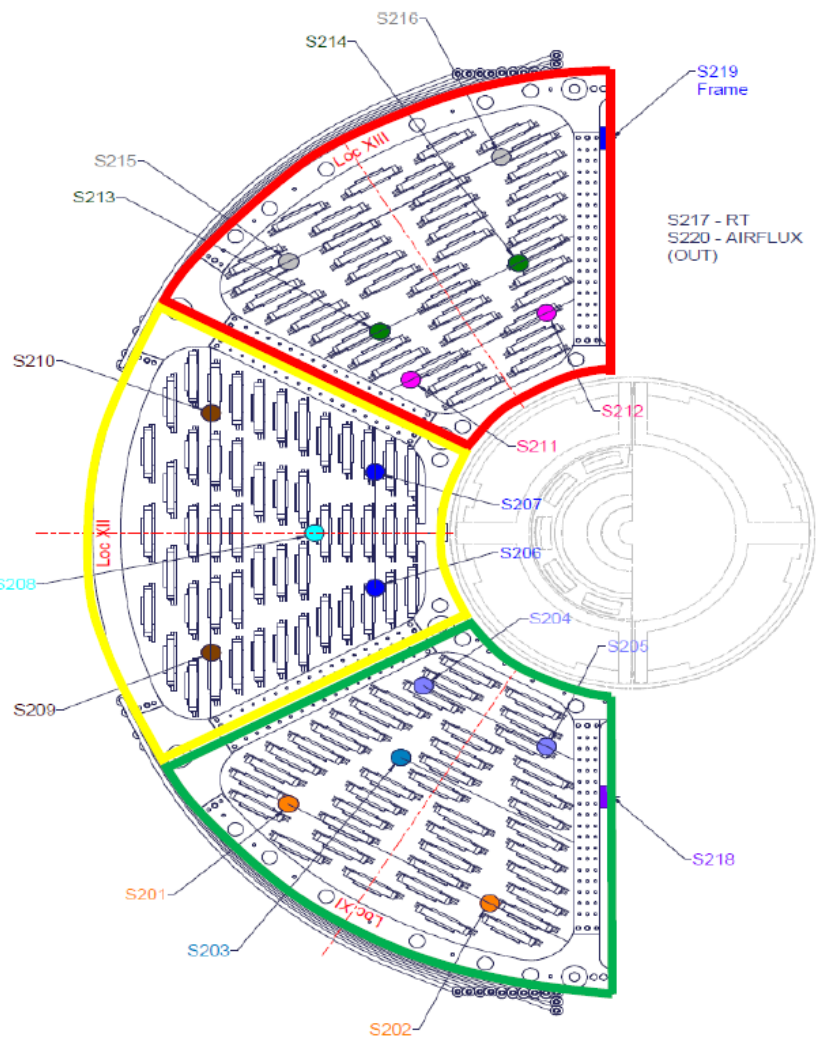




# MEASUREMENT FAN MOD

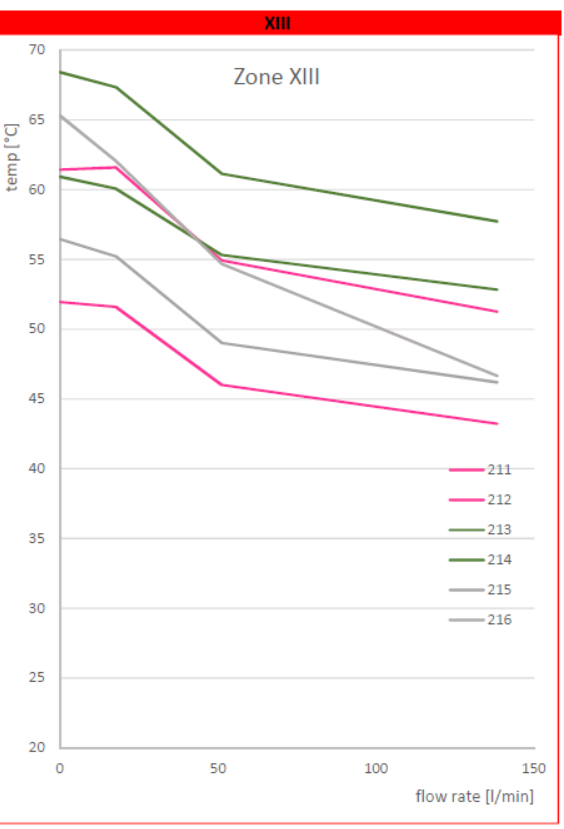
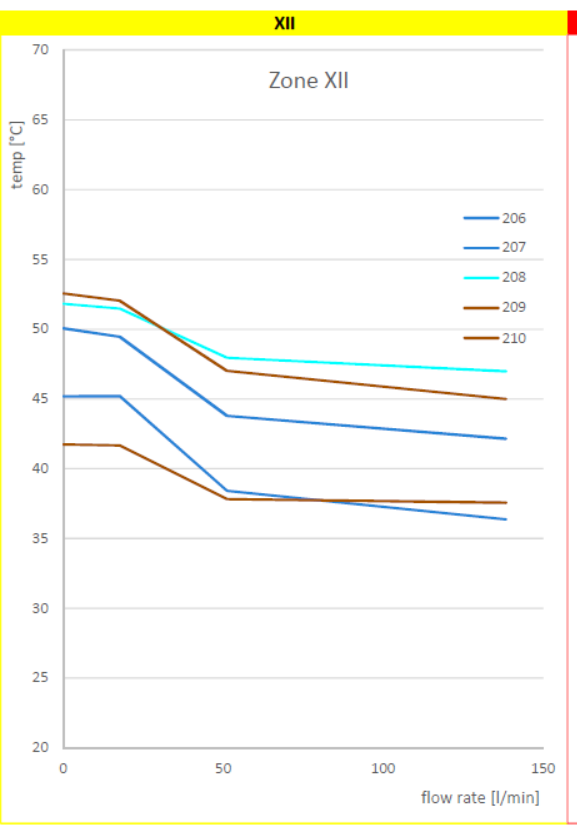
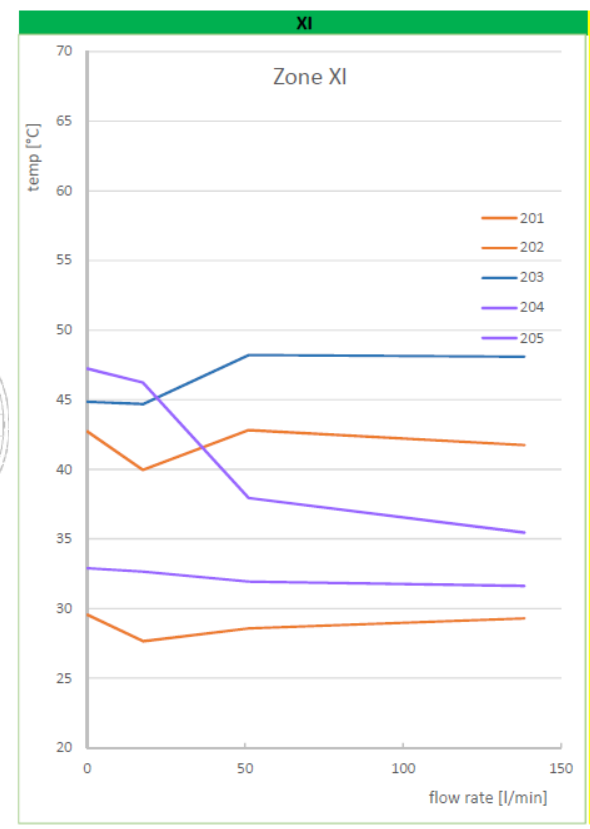
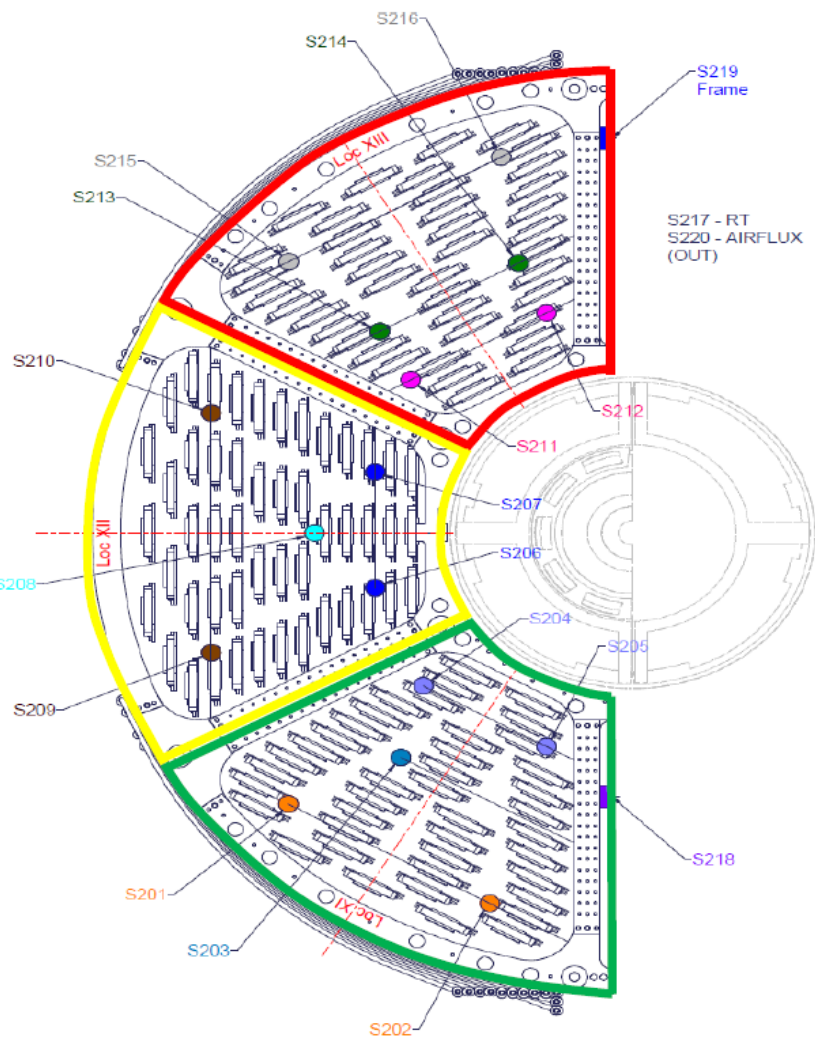


# MEASUREMENT FAN\_MOD

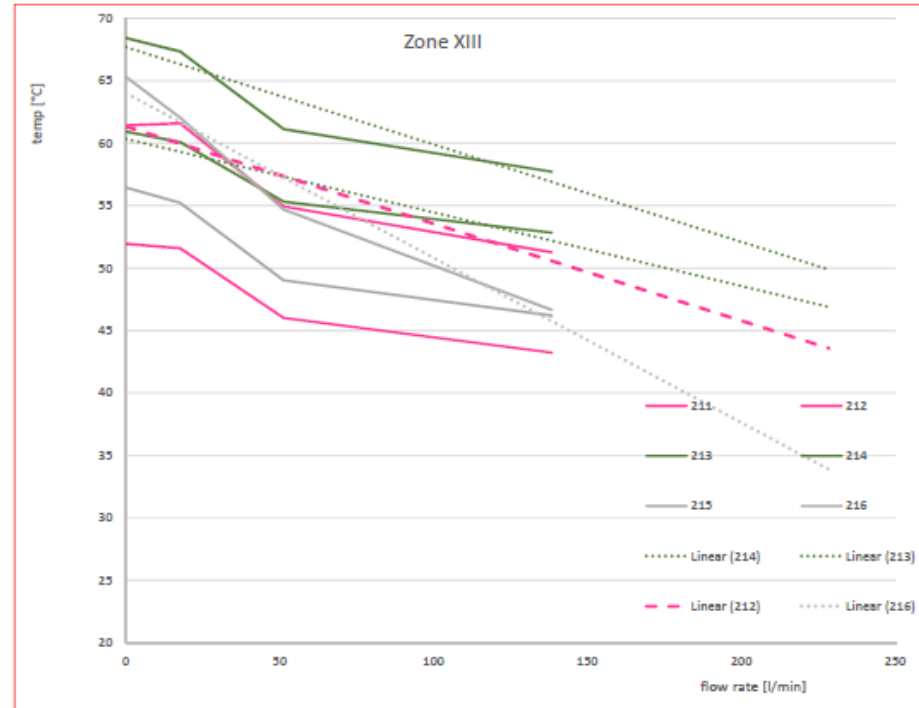
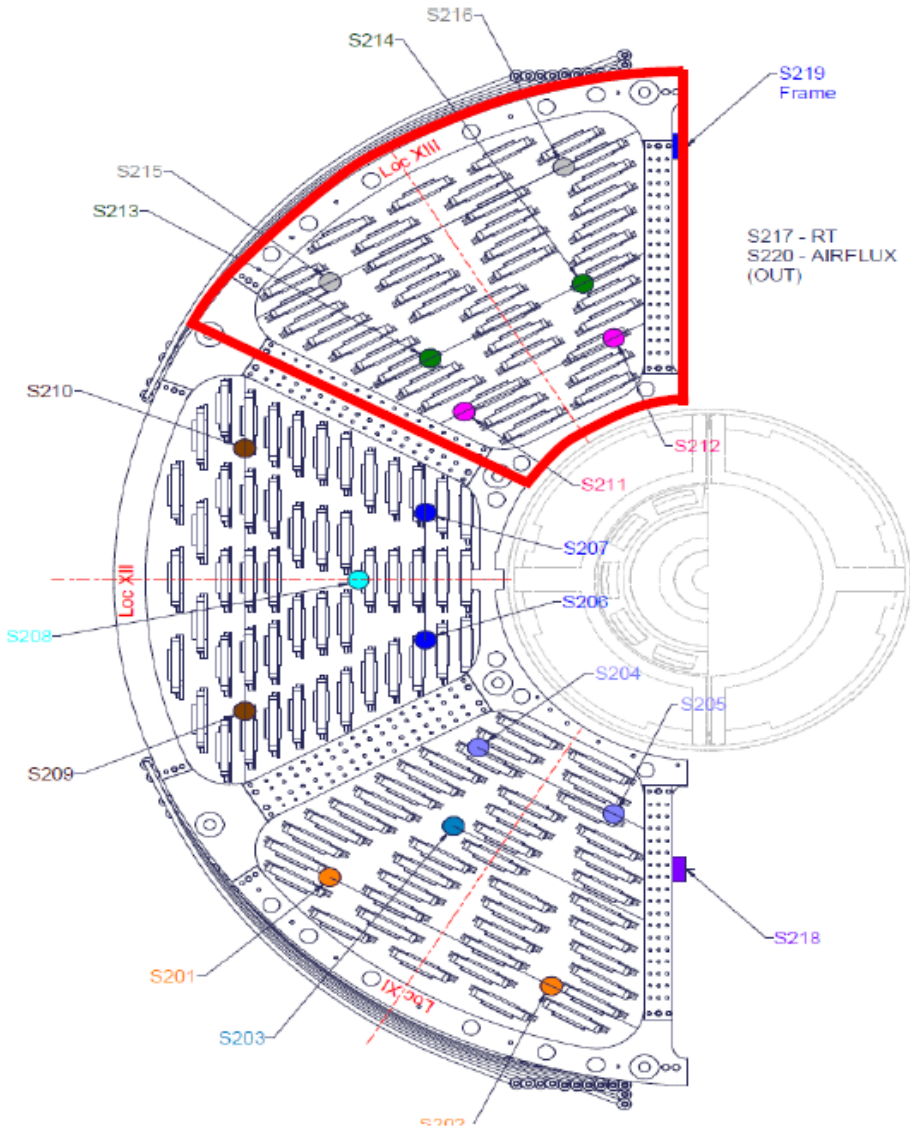


Channel	75W	75W + mini	75W + midi	75W + big
	0	18	51	138
S_201	43	40	43	42
S_202	30	28	29	29
S_203	45	45	48	48
S_204	47	46	38	35
S_205	33	33	32	32
S_206	45	45	38	36
S_207	50	49	44	42
S_208	52	51	48	47
S_209	42	42	38	38
S_210	53	52	47	45
S_211	52	52	46	43
S_212	61	62	55	51
S_213	61	60	55	53
S_214	68	67	61	58
S_215	56	55	49	46
S_216	65	62	55	47
S_217	24	23	24	25
S_218	28	27	28	28
S_219	42	38	37	34
S_220	24	23	40	38
S_all_Ø	50,2	49,3	45,4	43,3
Flow rate	0	22	64	173
(80%max)	0	18	51	138

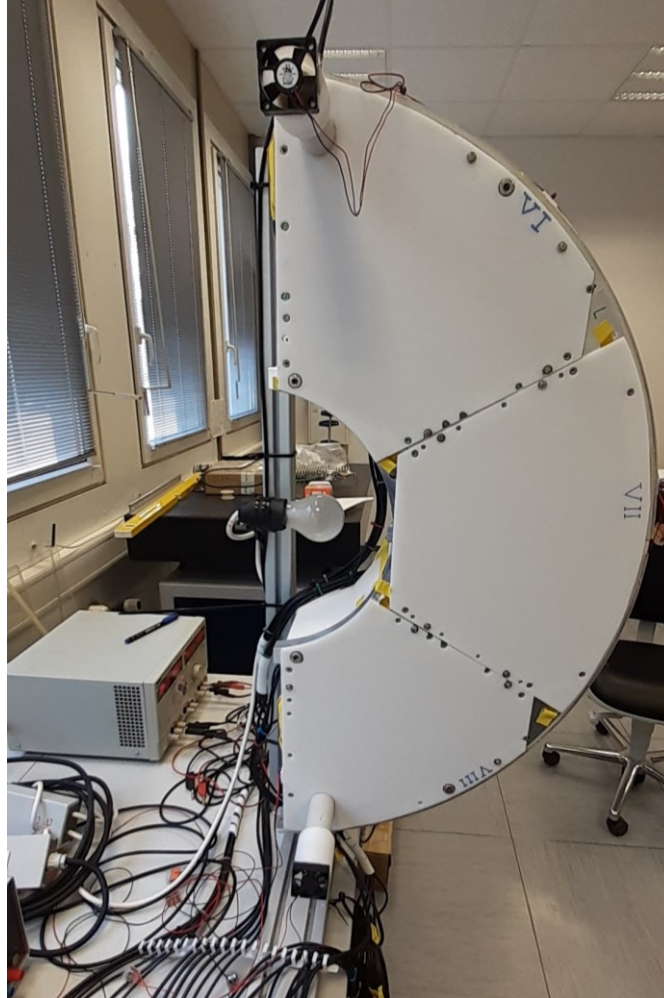
# MEASUREMENT FAN\_MOD



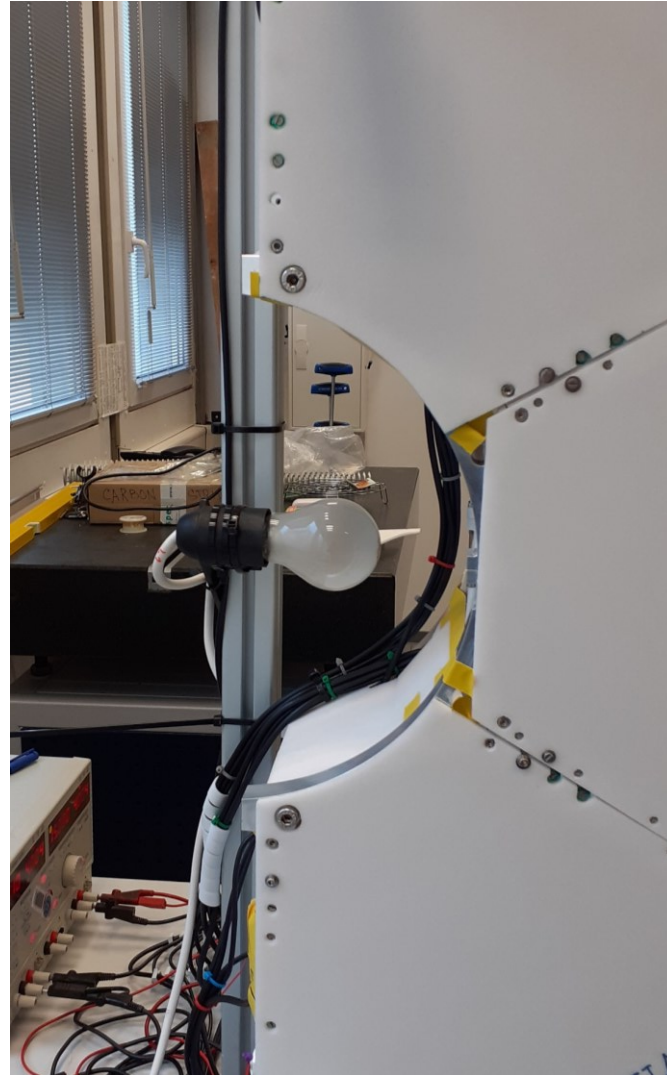
# MEASUREMENT FAN\_MOD



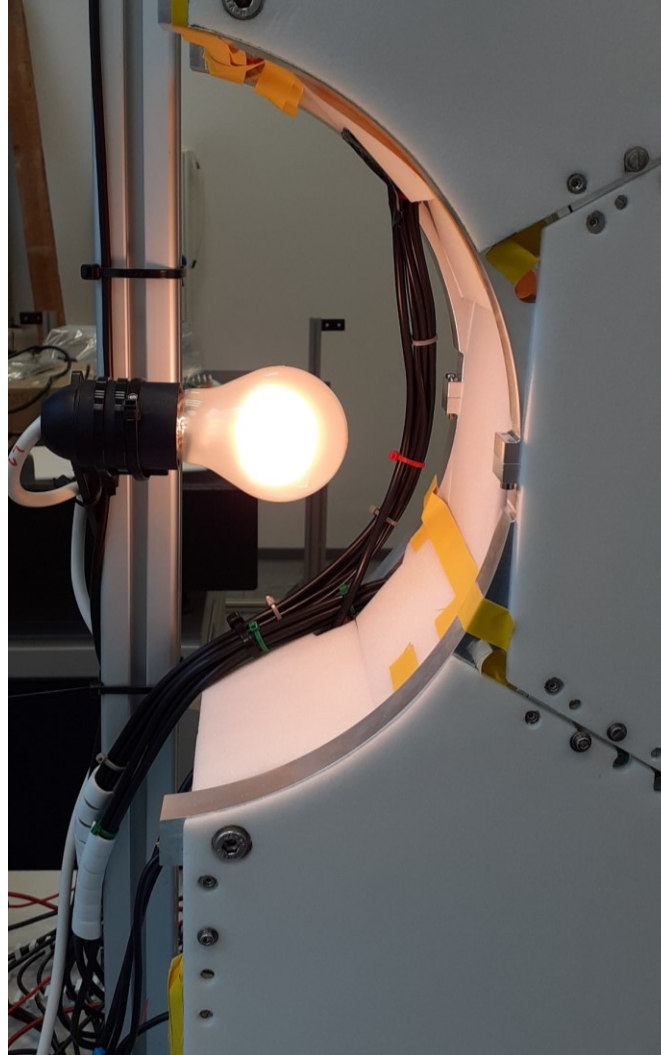
# MEASUREMENT MVD\_INFLUENCE



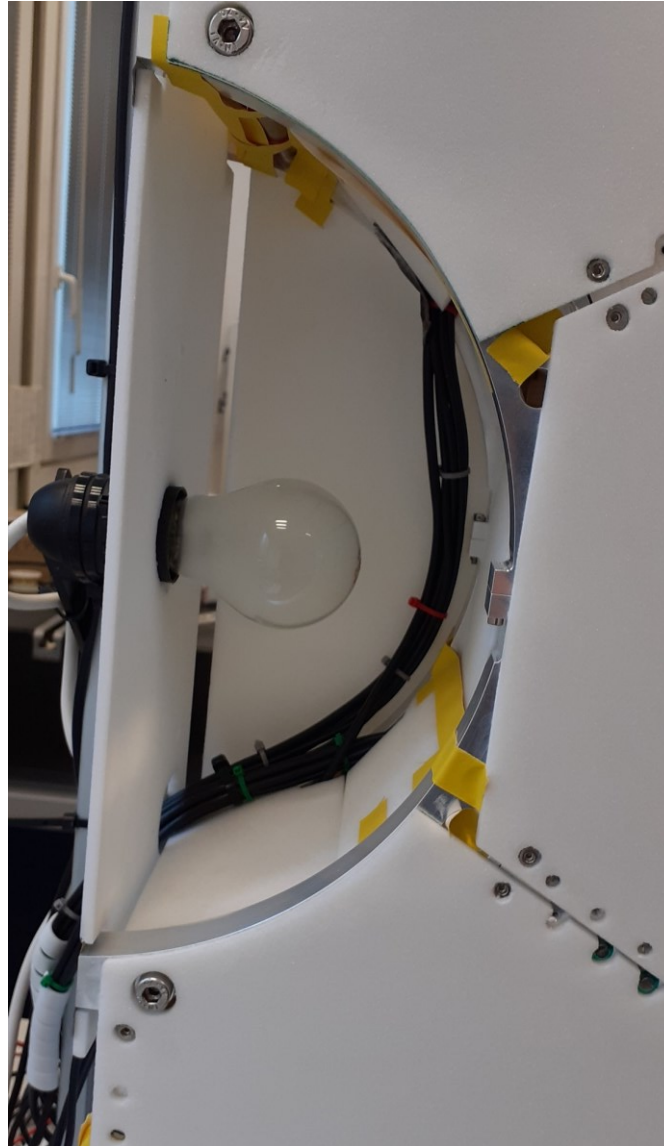
# MEASUREMENT MVD\_INFLUENCE



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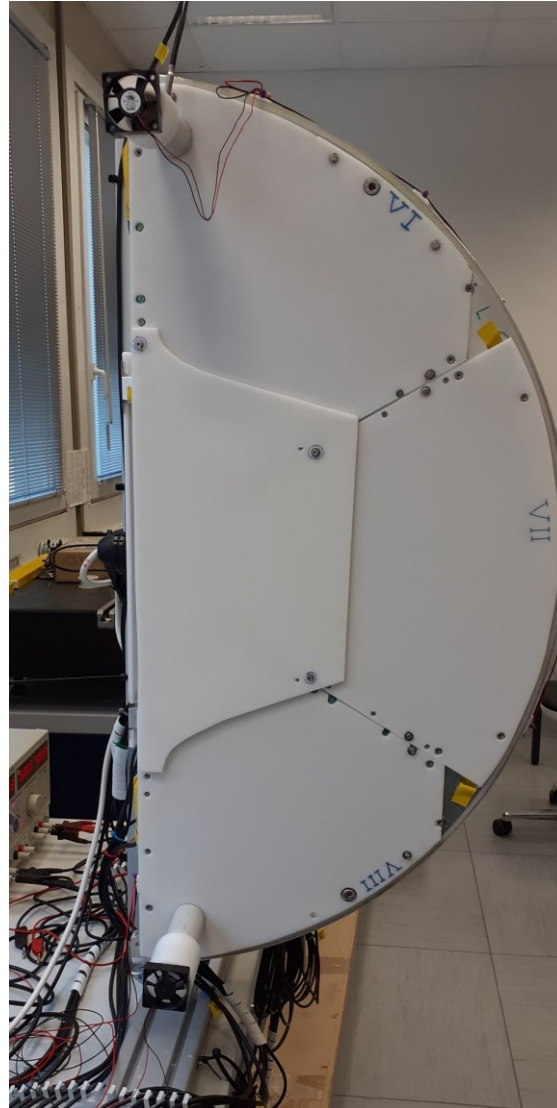


# MEASUREMENT MVD\_INFLUENCE

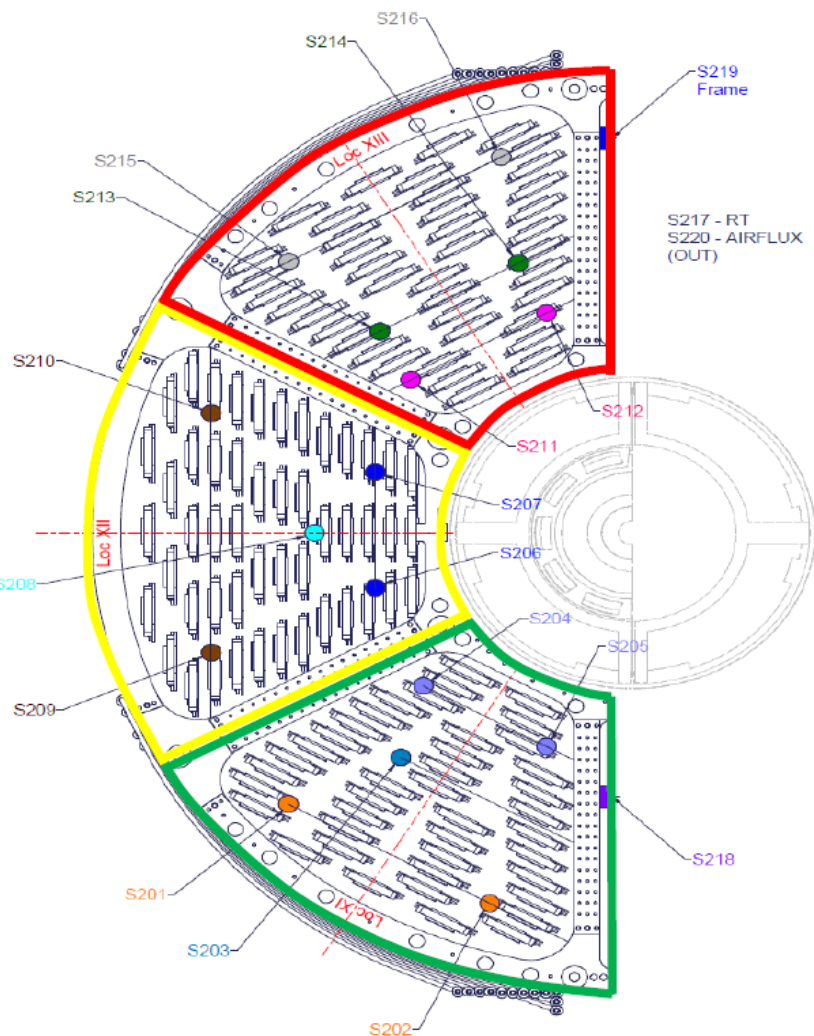




# MEASUREMENT MVD\_INFLUENCE

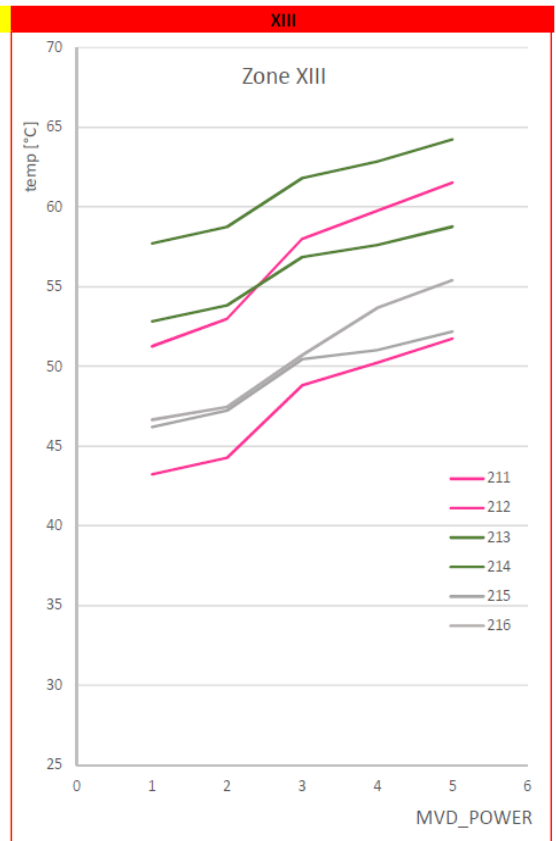
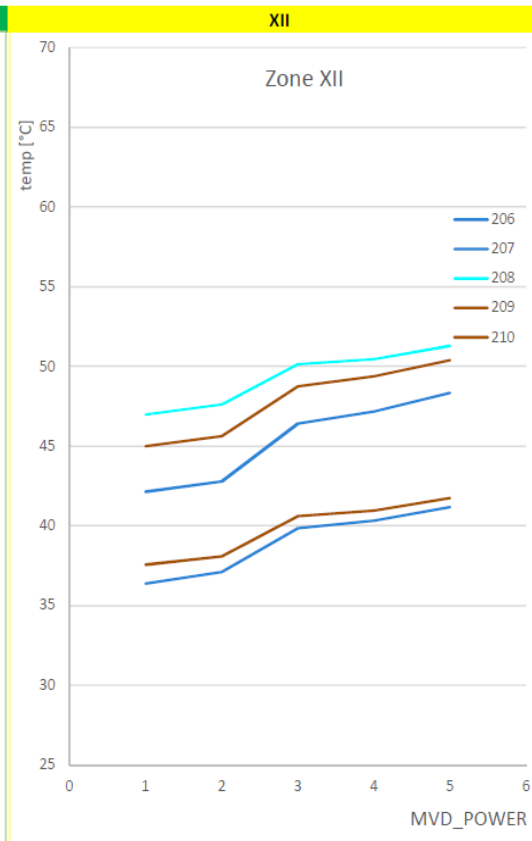
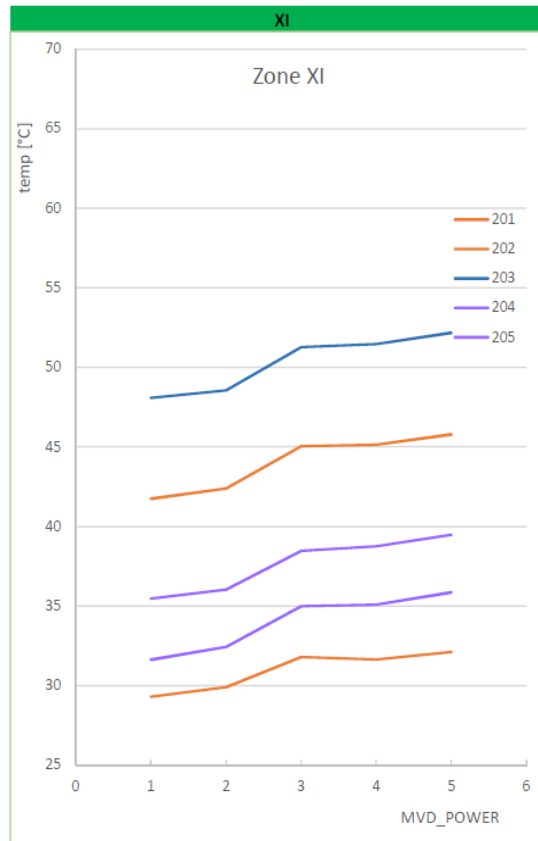
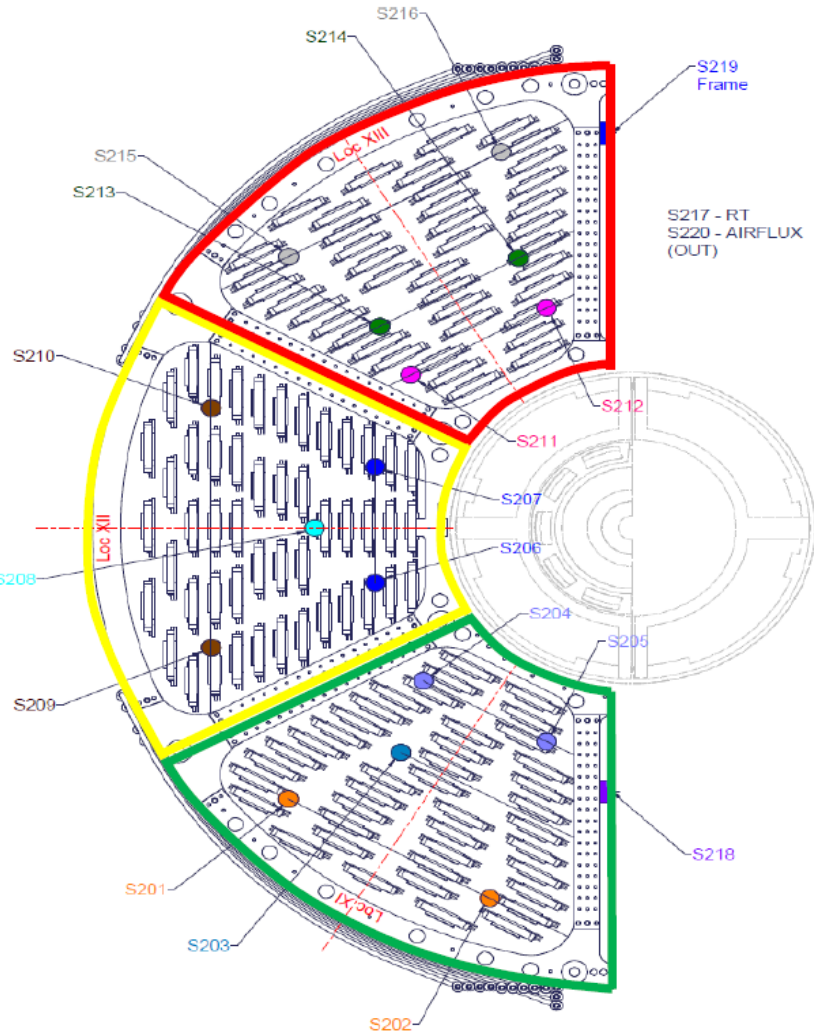


# MEASUREMENT MVD\_INFLUENCE

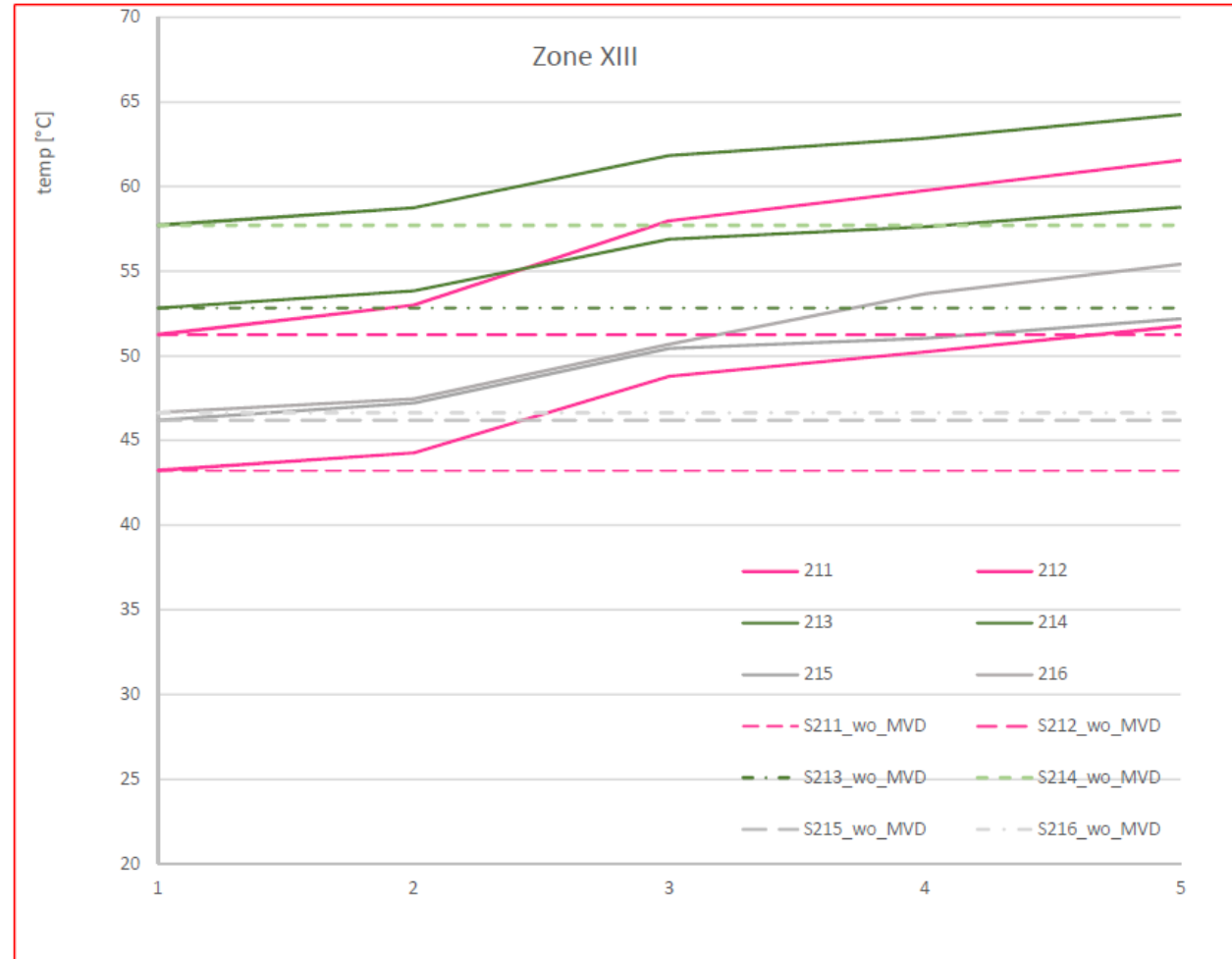
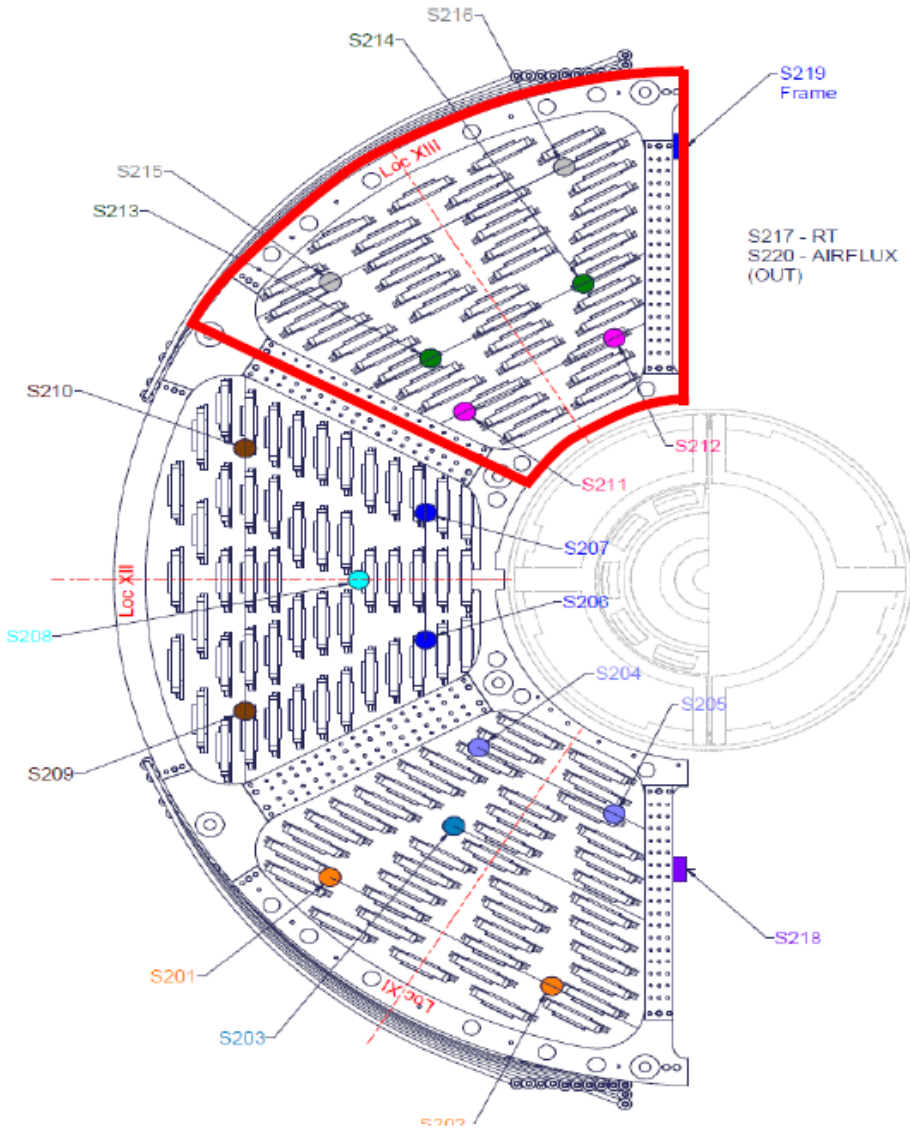


Channel	SET 0 Open	SET A 0W	SET B 25W	SET C 46W	SET D 60W
S_201	41,75	42,4	45,0	45,1	45,8
S_202	29,3	29,9	31,8	31,6	32,1
S_203	48,09	48,5	51,3	51,5	52,2
S_204	35,47	36,0	38,5	38,8	39,5
S_205	31,63	32,4	35,0	35,1	35,9
S_206	36,38	37,1	39,9	40,3	41,2
S_207	42,15	42,8	46,4	47,2	48,4
S_208	46,98	47,6	50,2	50,5	51,3
S_209	37,57	38,1	40,6	41,0	41,7
S_210	45	45,6	48,8	49,4	50,4
S_211	43,23	44,3	48,8	50,2	51,8
S_212	51,26	53,0	58,0	59,8	61,5
S_213	52,83	53,8	56,9	57,6	58,8
S_214	57,71	58,7	61,8	62,9	64,2
S_215	46,2	47,2	50,4	51,0	52,2
S_216	46,65	47,5	50,7	53,7	55,4
S_217	25,11	25,7	27,4	26,9	27,4
S_218	28,08	29,0	31,7	32,1	32,9
S_219	33,75	35,0	38,8	40,0	42,0
S_220	38,11	39,2	42,3	43,2	43,9
S_all_Ø	40,86	41,69	44,71	45,39	46,43

# MEASUREMENT MVD\_INFLUENCE



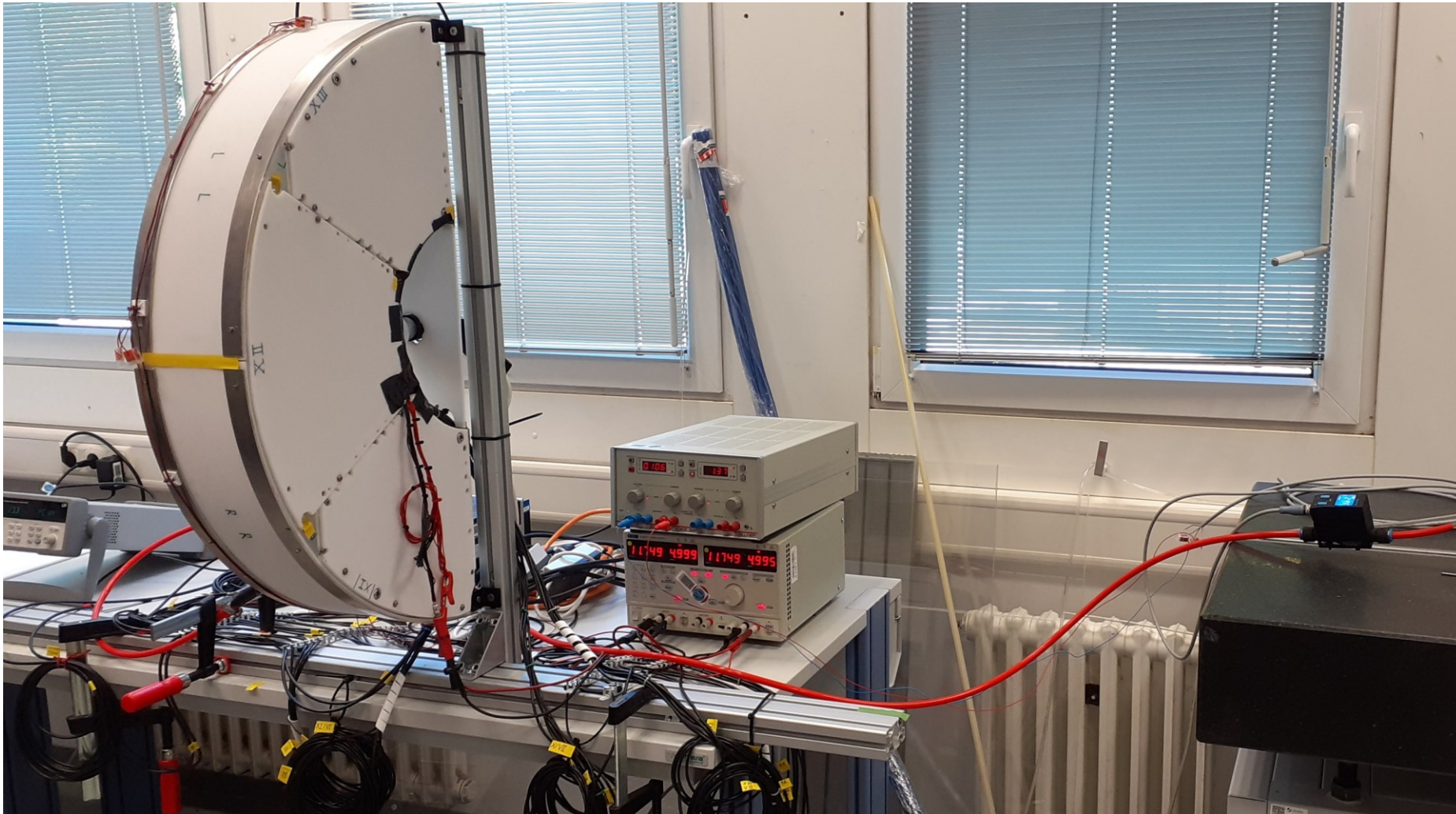
# MEASUREMENT FAN\_MOD



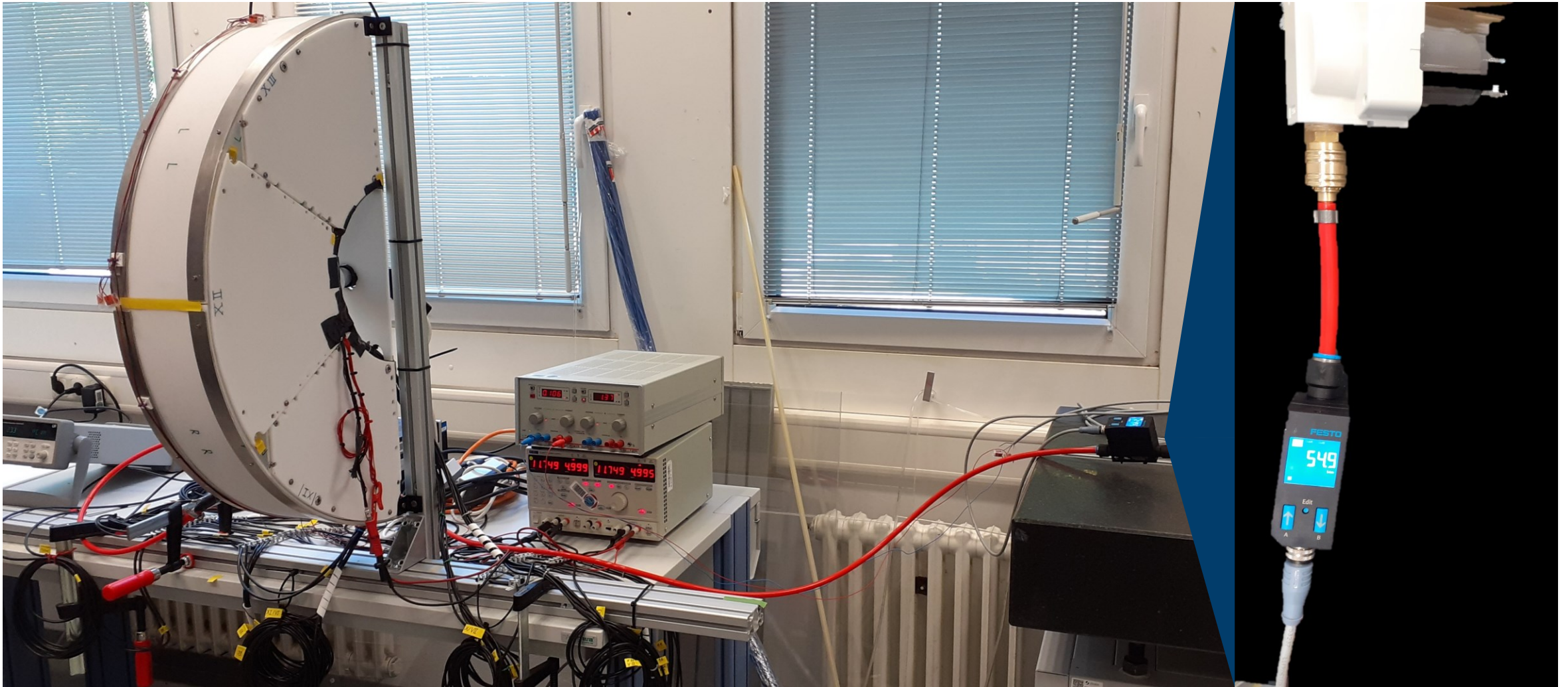
# UPGRADE FLOWMETER

- A) Install an Aircontrolsystem
  - Flow rate
  - Constant Temp
- B)Optimze Airflow
  - Several in-/outlets

# A) INSTALL AIR-CONTROL UPGRADE FLOWMETER



# A) INSTALL AIR-CONTROL UPGRADE FLOWMETER

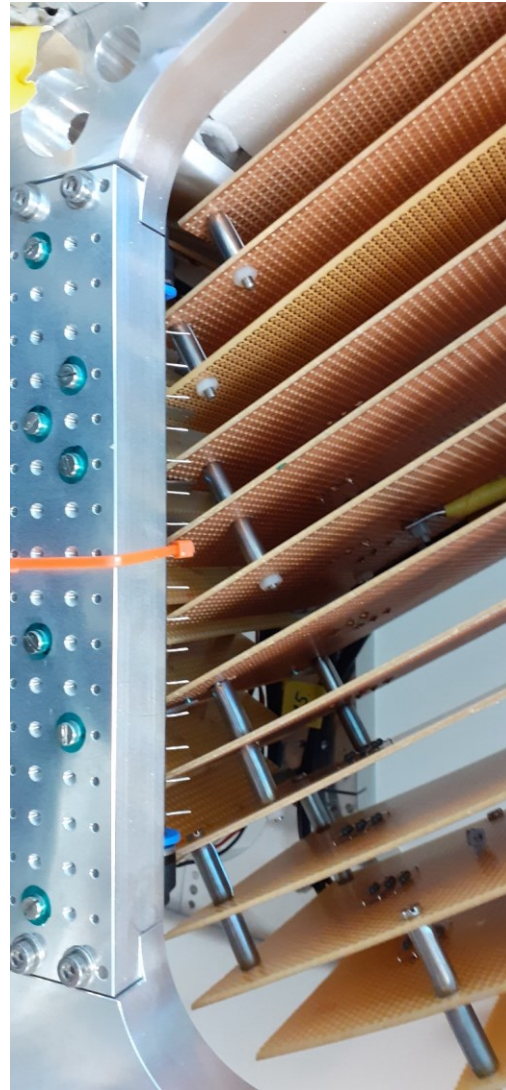
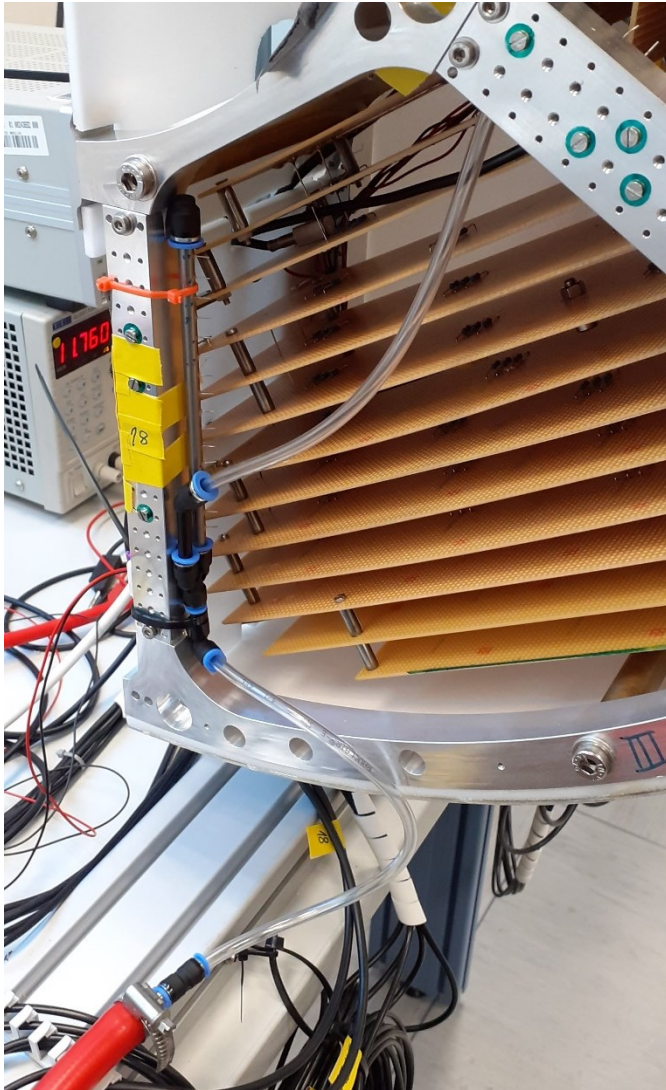


# A) INSTALL AIR-CONTROL UPGRADE FLOWMETER





## B) OPTIMIZE AIRFLOW UPGRADE FLOWMETER



# SUMMARY TEMP TESTS

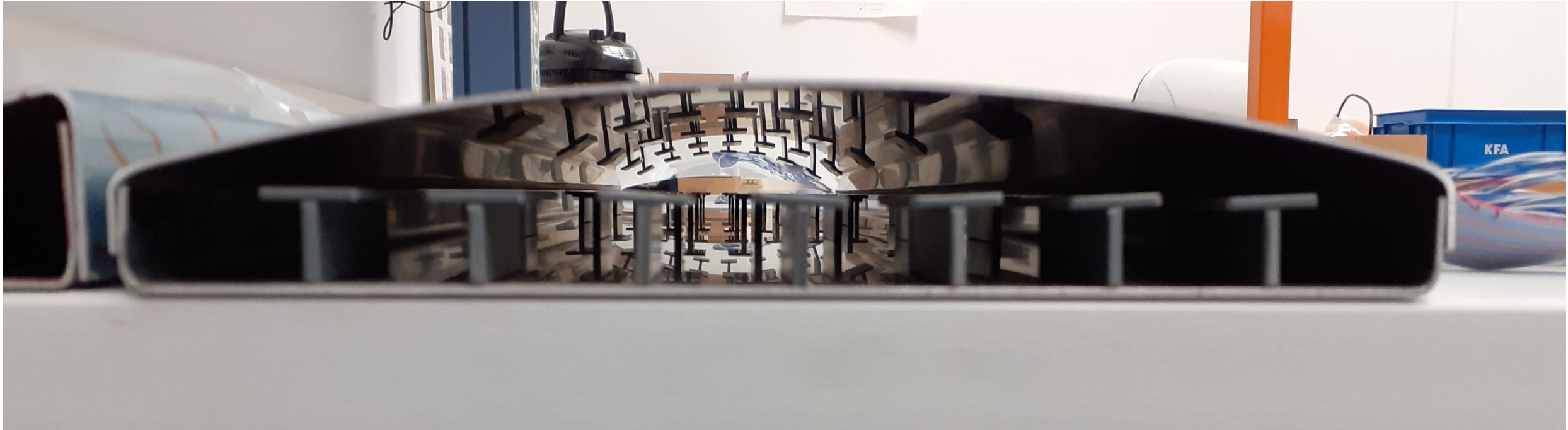
BIG FAN	
75W+FAN+innerCAP+60WLamp	120W+FAN+innerCAP+60WLamp
75W	120W
46	53
32	31
52	58
39	42
36	36
41	44
48	53
51	57
42	44
50	57
52	57
61	70
59	68
64	76
52	59
55	61

CLOSED -> Gas manifold(s) (MVD 60W)			
120W		120W	
0 L/min	50 L/min	80L/min	200 L/min
59	49	45	38
43	48	45	40
64	46	43	37
69	49	46	39
43	44	42	37
71	50	47	39
76	54	49	40
77	48	45	38
61	52	48	40
78	54	49	40
79	50	46	38
92	56	51	41
89	52	47	39
99	57	52	42
81	57	51	40
91	63	56	43

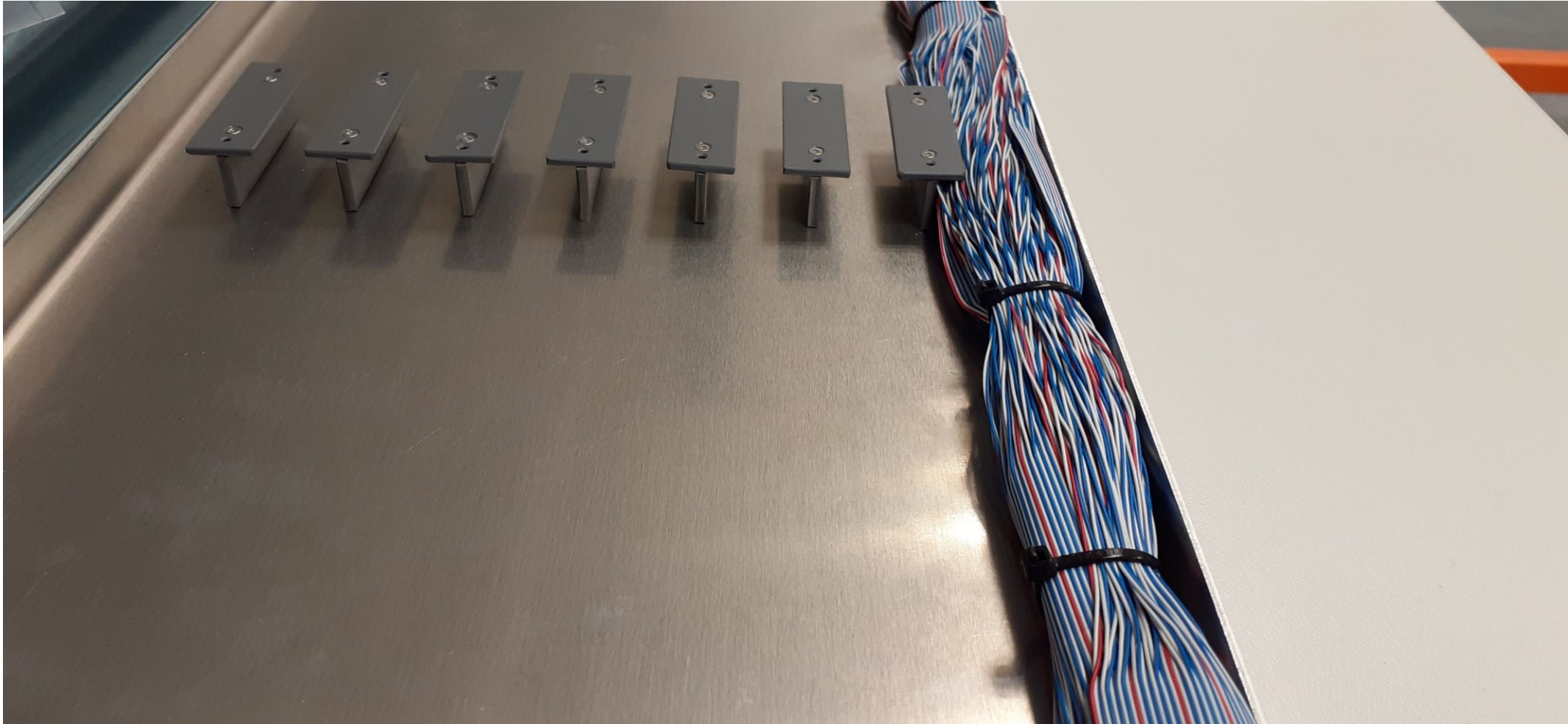
# OUTLOOK



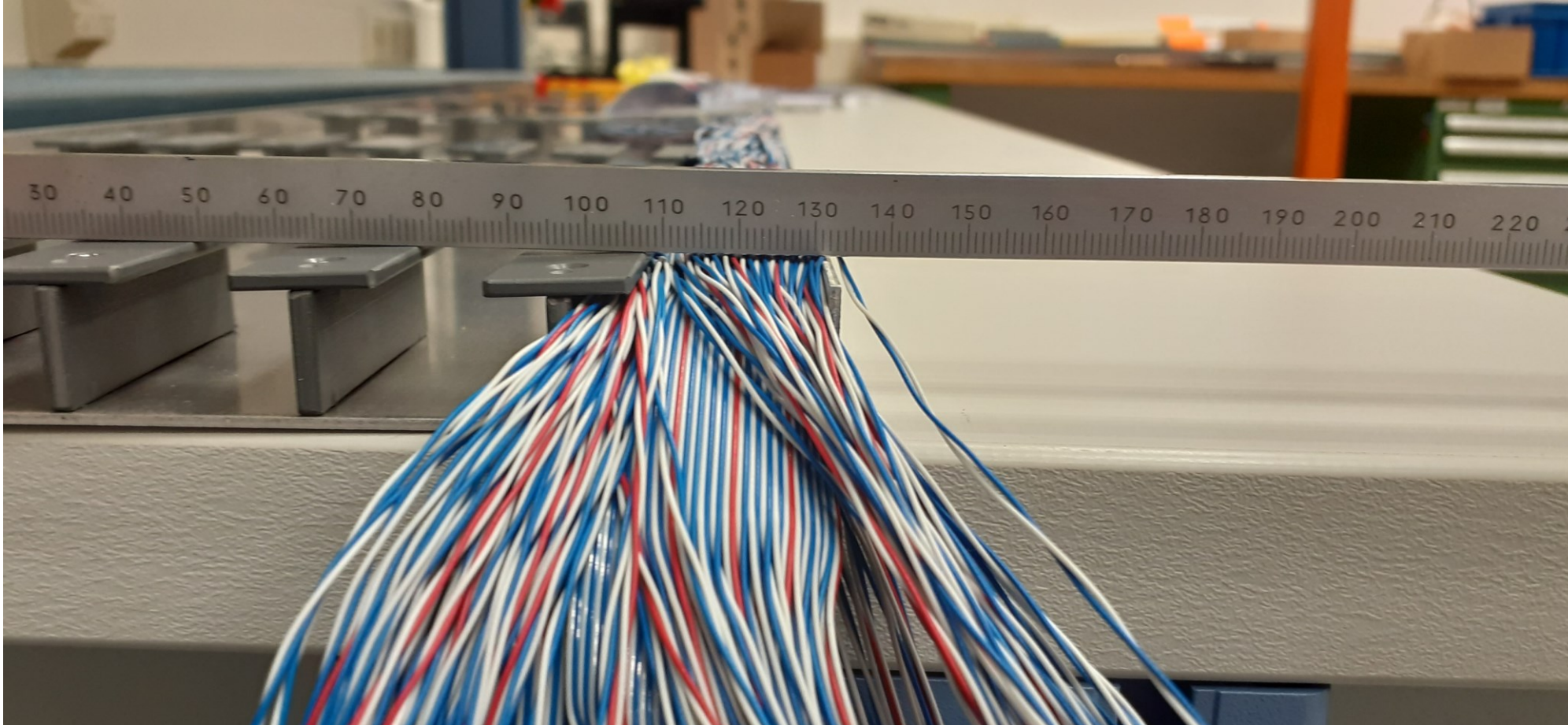
# OUTLOOK



# OUTLOOK



# OUTLOOK



# MEC DESIGN

Thanks