

Preparation of PhCollector for Module-0

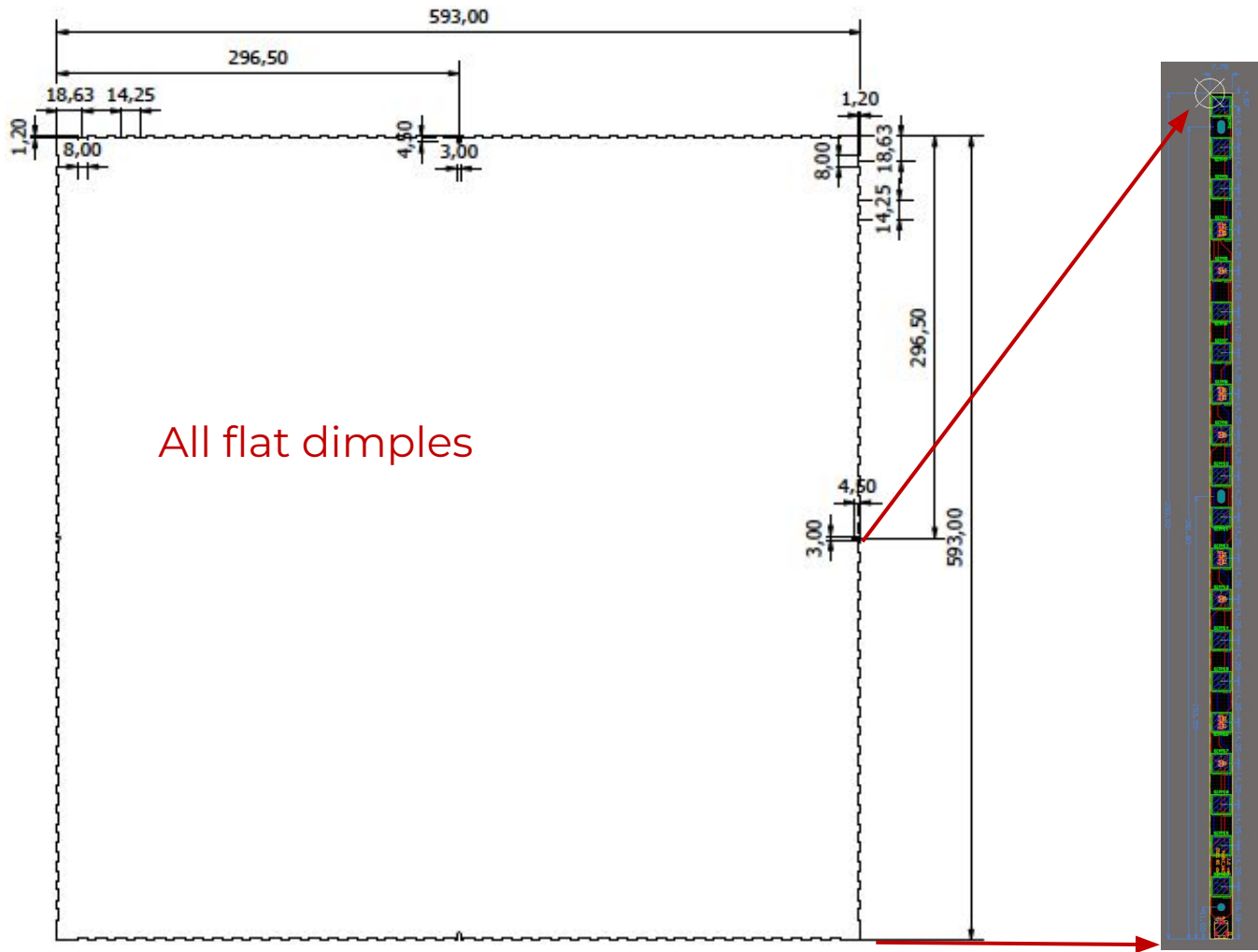
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9/09/2022

WLS plates for Module-0

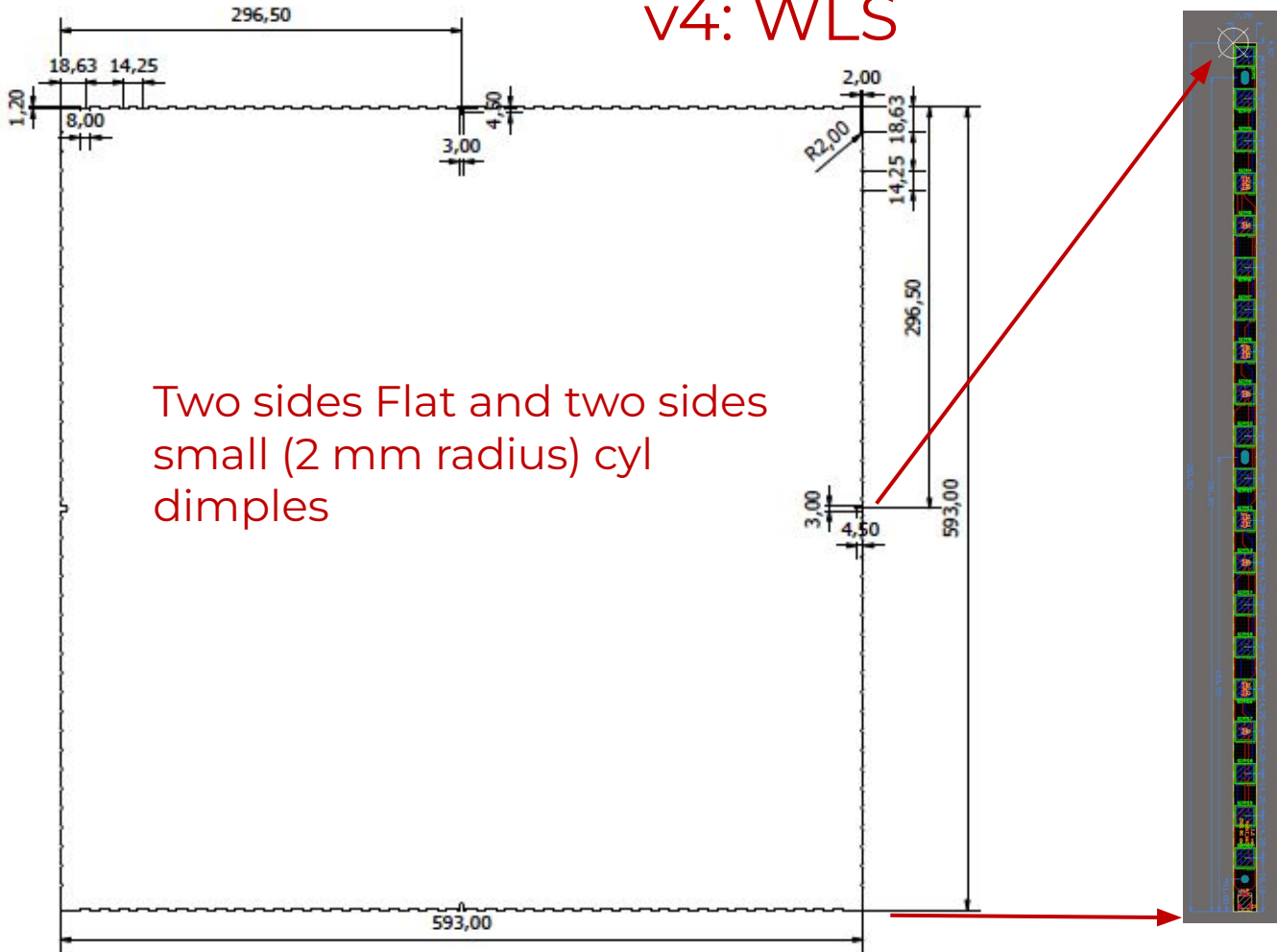
- Max Design Size: 625 x 625 x 4 mm³ (D. Warner communication few days ago)
- Purchase Order for 20 laser cut plates is being issued by INFN-MiB

WLS plates for Module-0

- G2P company has started the refurbishment of the casting reactor to match the new plates dimensions
 - new glass plates for the casting
 - new compression springs
 - production will be at Rovereto site
 - second half of October: → commissioning of the upgraded casting reactor
 - Laser cut of the plates at the final size will be outsourced, same company and procedure as for v1→v4 plates with flat/cylindrical dimples
 - **Delivery of 20 plates by end of November 2022**



v4: WLS



Two sides Flat and two sides small (2 mm radius) cyl dimples

XA PDE Simulation vs dimple size

		Dimple Radius <i>mm</i>					
		0	0.5	1	1.5	2	3
Border <i>mm</i>	0.1	4.2%	5.5%	5.4%	5.3%	5.2%	4.8%
	0.5	4.2%	5.3%	5.2%	5.1%	5.0%	4.6%
	1	4.0%	5.0%	5.0%	4.8%	4.7%	4.3%

Table: Photon detection efficiency for different border sizes and dimple radius. The best result shows a relative increase (in comparison to the one without dimples and same border) in efficiency of 50%.

Dichroics

Total number of dichroic glasses ($97 \times 97 \text{ mm}^2$) spares included: 864

- 576 for cathode mount
- 288 (up to) for membrane

We may recover some glasses from CB prototypes

Two manufacturer, sharing still to be defined:

- Photonexport: ($97 \times 97 \text{ mm}^2$)
- ZAOT company ready for 160 double size dichroics delivery in two batches:
 - 80 by end of the year
 - 80 by end of january 2023

Dichroics: pTP coating

Total number of dichroic glasses (97 x 97 mm²) spares included:

576 for cathode mount

288 (up to) for membrane

We may recover some glasses from CB prototypes

- pTP deposition on critical path
 - Campinas facility is available
 - Manpower must be provided by us

Mechanics

- On the critical path
- A final design is not yet available
 - integration of lessons learned at the CB program to be integrated
 - optimization of design to preserve the PDE
- Discussion at the Collab Meeting next week

Summary of P1, P2,P3,P4 deployed in 2022

	v1	v2	v3	v4
date	2021→ 2022	July 2022	August 2022	?
n. sides	1	2	1	?
WLS size	599 x 599	593 x 593	593 x 593	593 x 593
WLS edges	flat	flat	flat dimp 8 x 1.4	cyl dimples
WLS-SiPMs	springs	vert. & horiz. spring	horiz. springs	?
SiPMs gluing	-	-	yes on flat dimpl	-
SiPms	Hamamatsu S14160			
Dichroics	Campinas/CSU 97 x 97 mm	Campinas/CSU 97 x 97 mm	Valencia/Photonex port 97 x 97 mm	MiB/ZAOT 202 x 97 mm