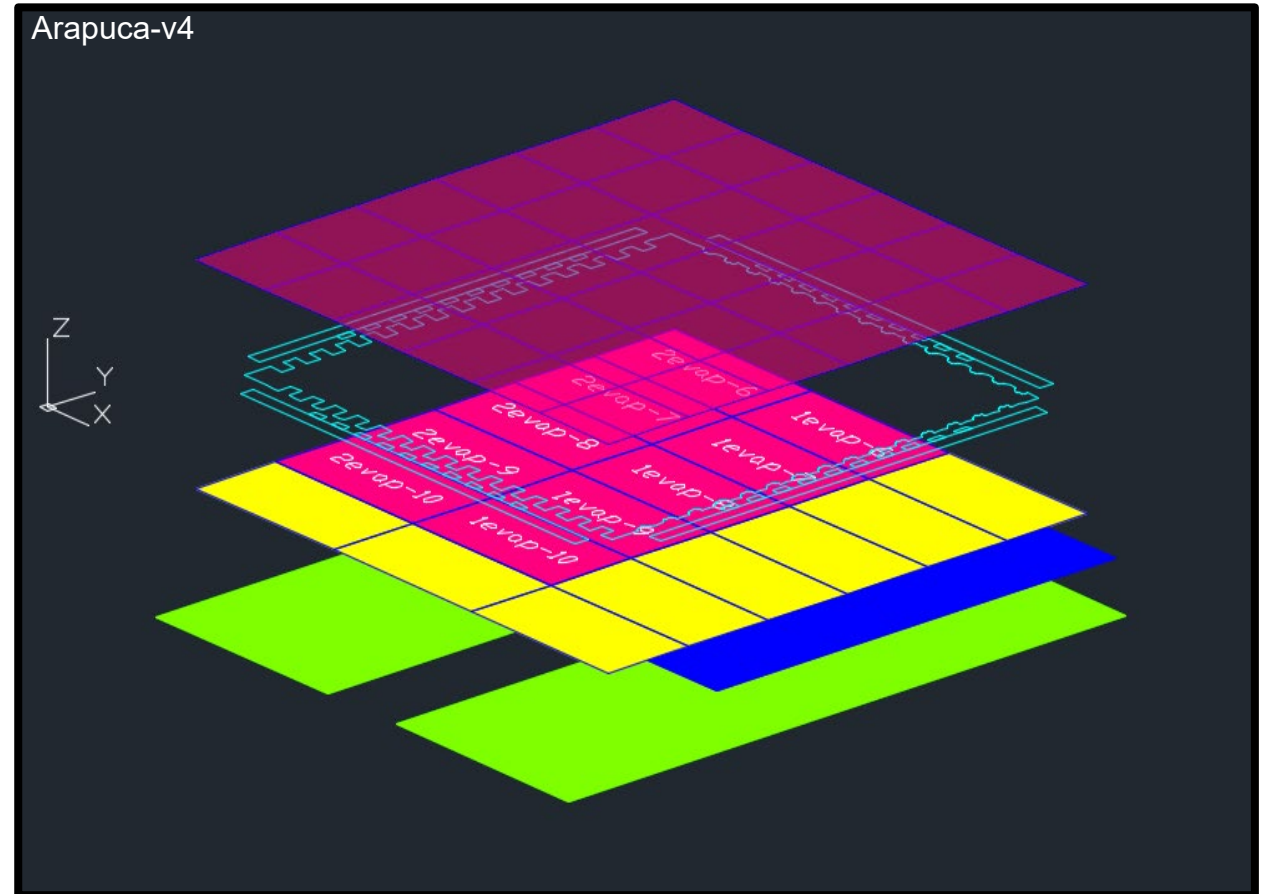


PDS Coldbox Update- CRP2b ARAPUCA V4 Installation

Chris Macias, Paul Debbins, Ianos Schmidt,
Alexi Mestvirishvili

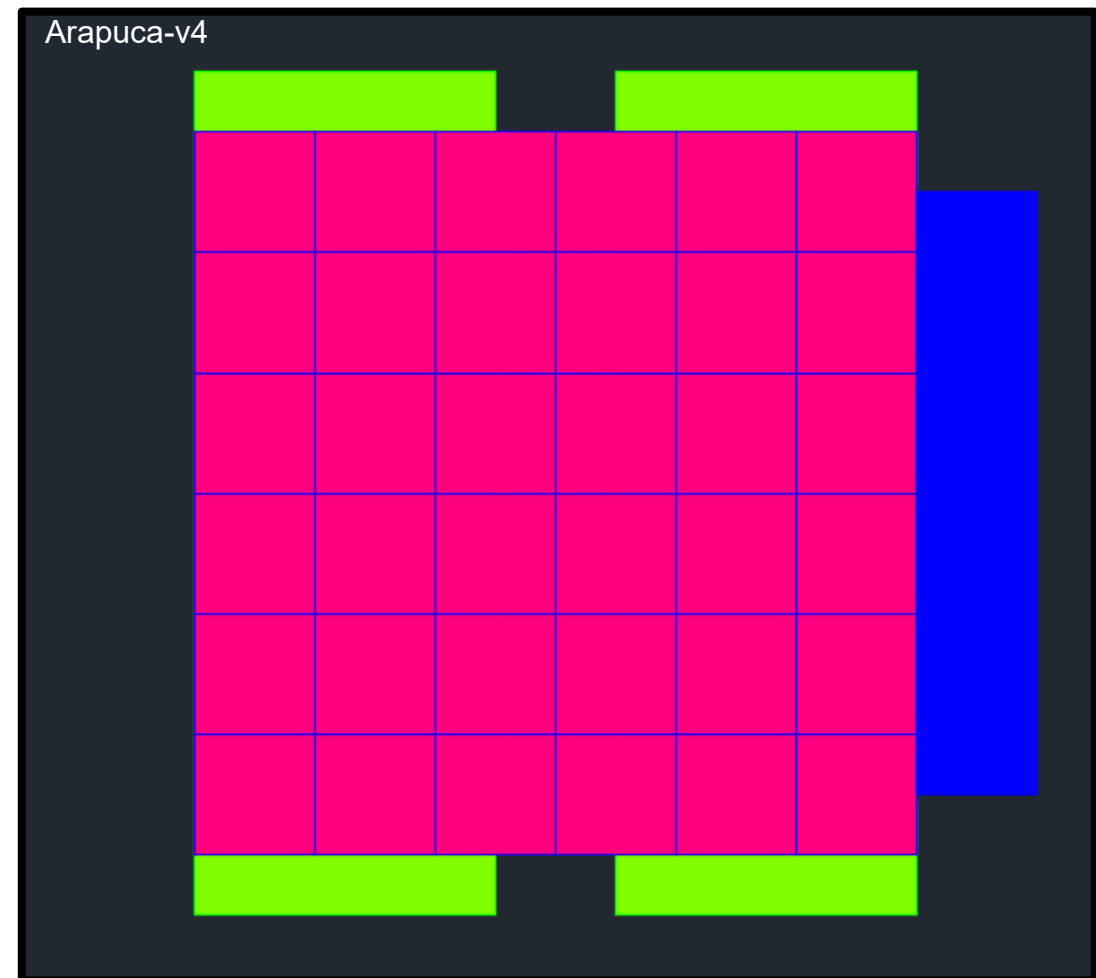
ARAPUCA-v4 Assembly

- Top → Bottom
 - Small filter frame
 - Filters were cannibalized from v2 +v3
 - WLS lightguide + readout
 - 2 Type of SiPMs from Hamamatsu
 - 4 flex circuits standard MPPC
 - 4 flex circuits of the HD downselect
 - Lightguide readout shape
 - One per SiPM type
 - Square key- ch2
 - Ch: 1, 2,13, 14
 - Circular key-ch1
 - Ch: 3, 4, 15, 16
 - Large filter frame
 - Placement shown→
 - Light-tight box adjacent
 - G10 support pieces
 - Used to attach to cathode



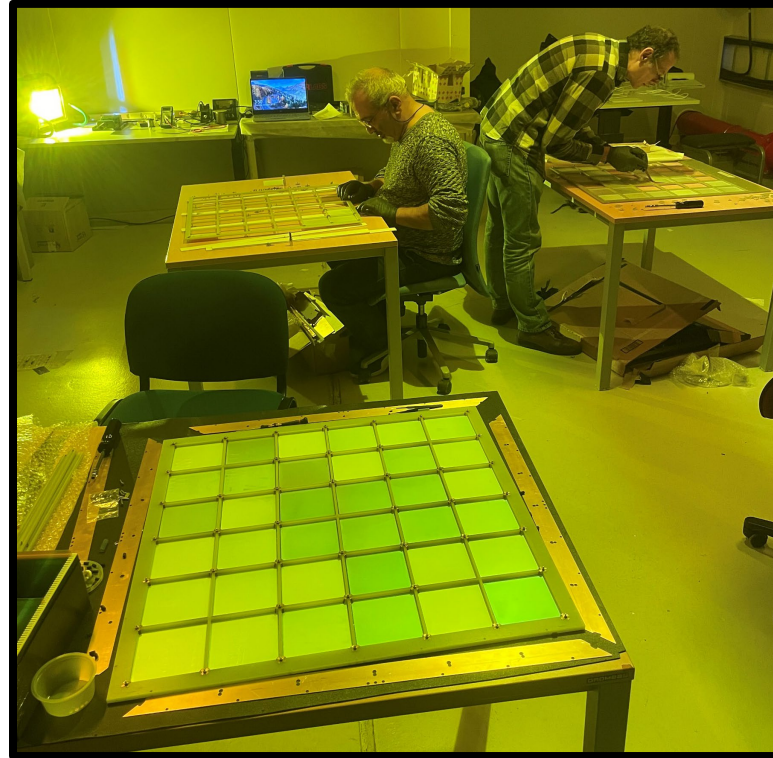
ARAPUCA-v4 Assembly

- Top → Bottom
 - Small filter frame
 - Filters were cannibalized from v2 +v3
 - WLS lightguide + readout
 - 2 Type of SiPMs from Hamamatsu
 - 4 flex circuits standard MPPC
 - 4 flex circuits of the HD downselect
 - Lightguide readout shape
 - One per SiPM type
 - Circular key- ch1
 - Ch: 3, 4, 15, 16
 - Square key- ch2
 - Ch: 1, 2, 13, 14
 - Large filter frame
 - Placement shown→
 - Light-tight box adjacent
 - G10 support pieces
 - Used to attach to cathode



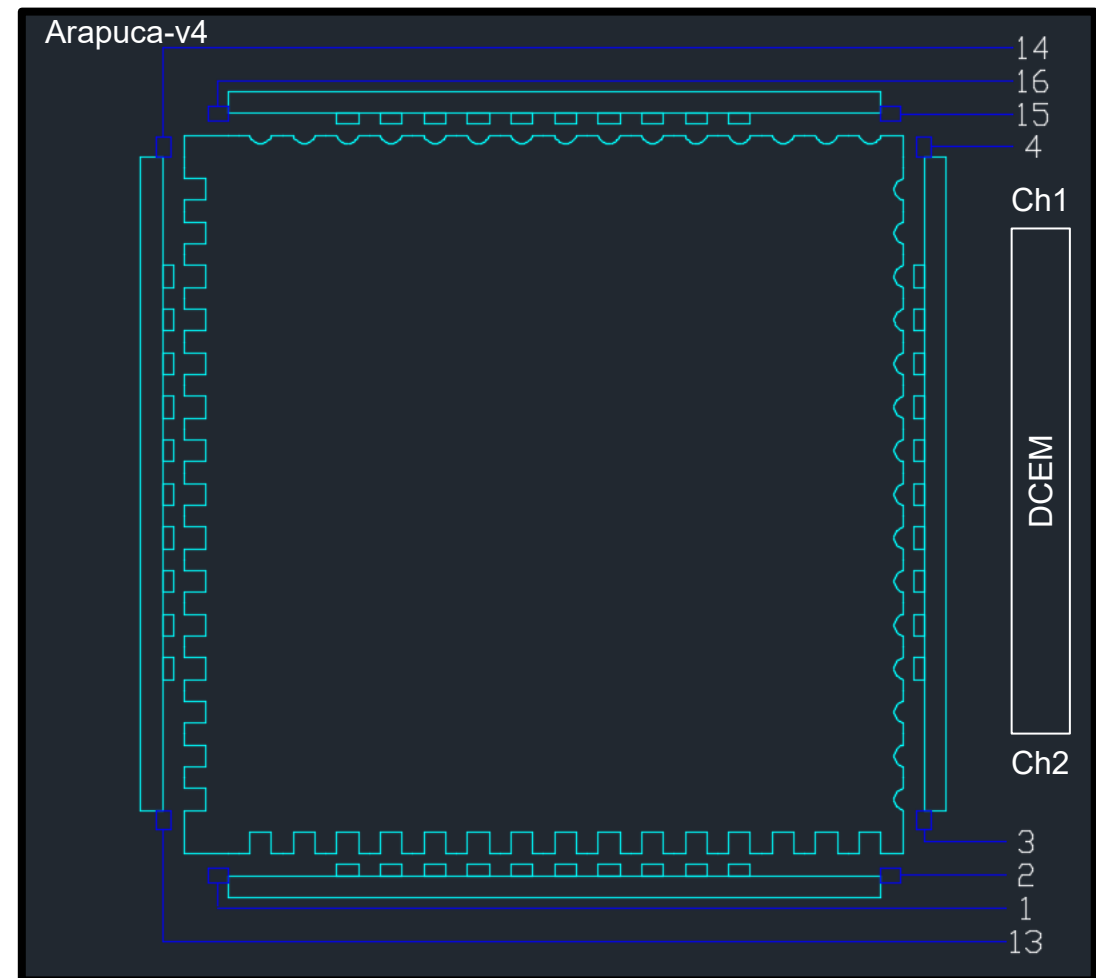
Small Filter Frame Assembly

- Small Filters were cannibalized from
 - v2 +v3



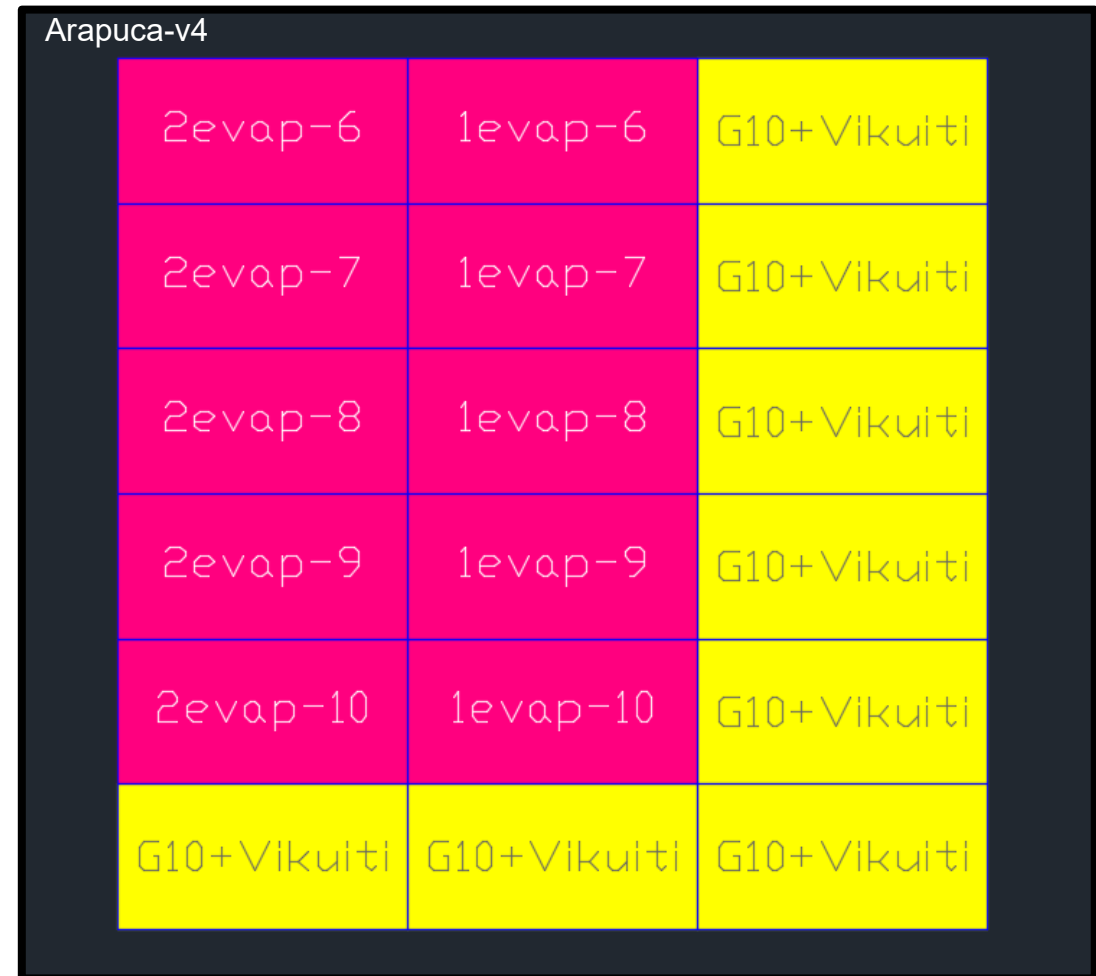
ARAPUCA-v4 Assembly

- Top → Bottom
 - Small filter frame
 - Filters were cannibalized from v2 +v3
 - WLS lightguide + readout
 - 2 Type of SiPMs from Hamamatsu
 - 4 flex circuits standard MPPC
 - 4 flex circuits of the HD downselect
 - Lightguide readout shape
 - One per SiPM type
 - Circular key- ch1
 - Ch: 3, 4, 15, 16
 - Square key- ch2
 - Ch: 1, 2, 13, 14
 - Large filter frame
 - Placement shown →
 - Light-tight box adjacent
 - G10 support pieces
 - Used to attach to cathode



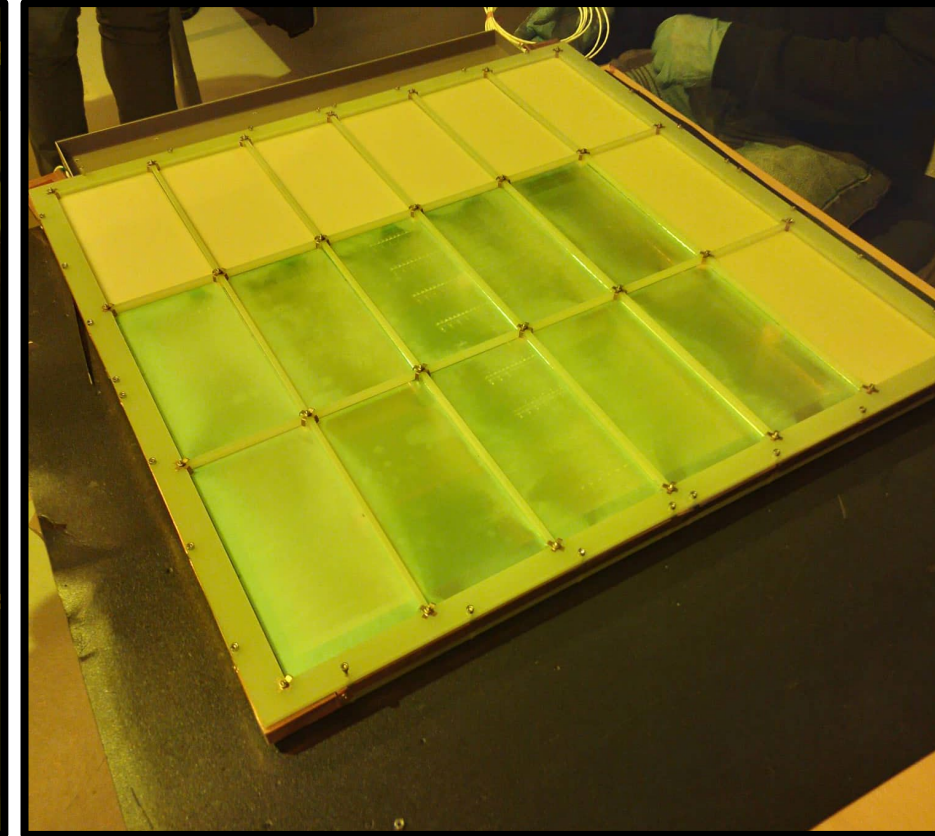
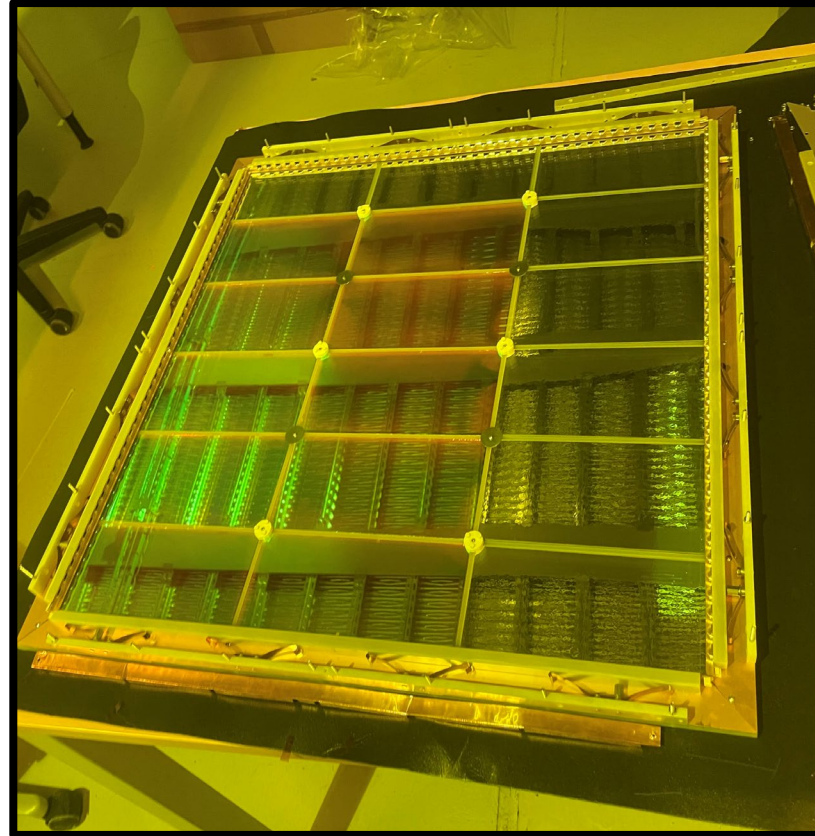
ARAPUCA-v4 Assembly

- Top → Bottom
 - Small filter frame
 - Filters were cannibalized from v2 +v3
 - WLS lightguide + readout
 - 2 Type of SiPMs from Hamamatsu
 - 4 flex circuits standard MPPC
 - 4 flex circuits of the HD downselect
 - Lightguide readout shape
 - One per SiPM type
 - Circular key-ch1
 - Ch: 3, 4, 15, 16
 - Square key- ch2
 - Ch: 1, 2, 13, 14
 - Large filter frame
 - Placement shown→
 - Light-tight box adjacent
 - G10 support pieces
 - Used to attach to cathode



WLS Lightguide + Readout Large Filter Frame

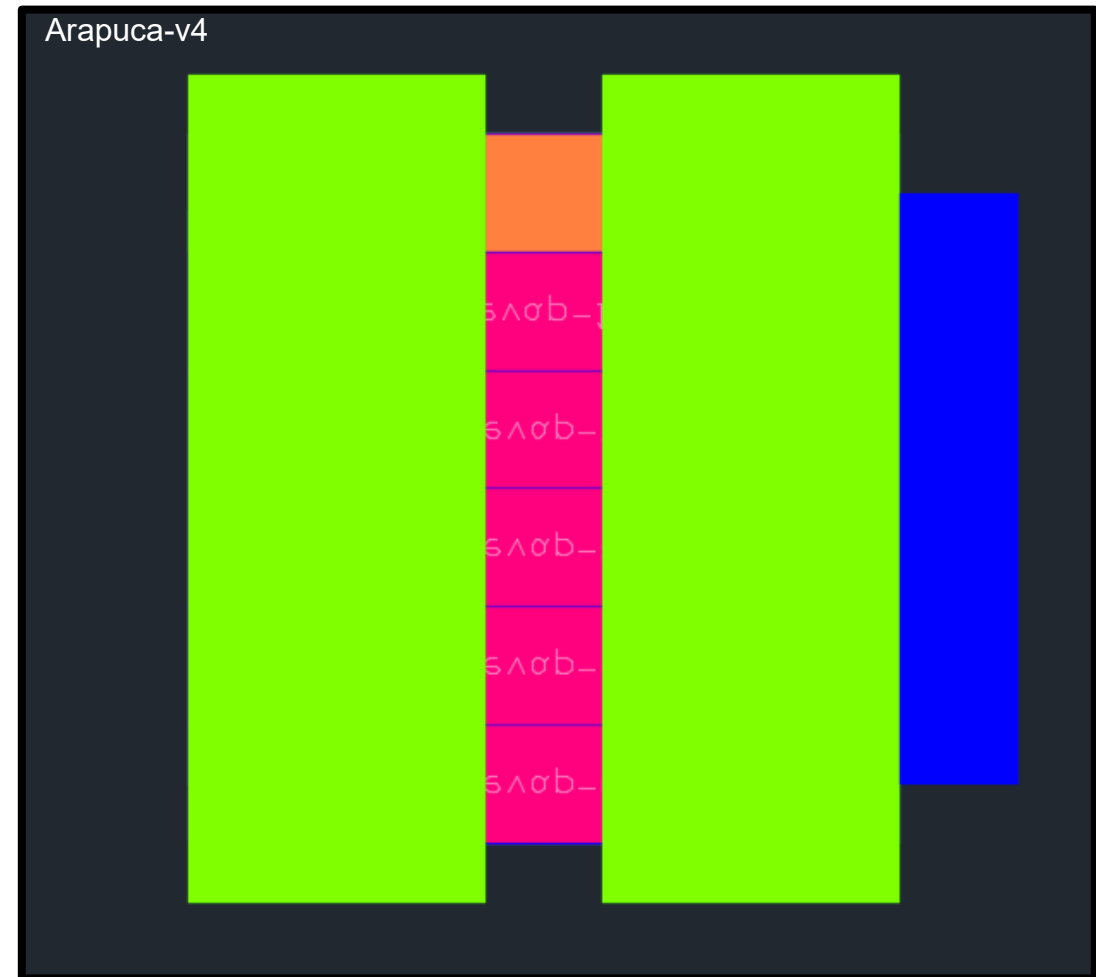
- WLS lightguide + readout
 - 2 Type of SiPMs from Hamamatsu
 - 4 flex circuits standard MPPC
 - 4 flex circuits of the HD downselect
 - Lightguide readout shape
 - One per SiPM type
 - Circular key-ch1
 - Ch: 3, 4, 15, 16
 - Square key- ch2
 - Ch: 1, 2, 13, 14
- Large filter frame
 - Placement shown on schematic
- Light-tight box adjacent



- Type of SiPM (had FOUR inner dots on face of SiPM)
 - 13-16
- Type of SiPM (had ONE inner dot on face of SiPM)
 - 1-4

ARAPUCA-v4 Assembly

- Top → Bottom
 - Small filter frame
 - Filters were cannibalized from v2 +v3
 - WLS lightguide + readout
 - 2 Type of SiPMs from Hamamatsu
 - 4 flex circuits standard MPPC
 - 4 flex circuits of the HD downselect
 - Lightguide readout shape
 - One per SiPM type
 - Circular key-ch1
 - Ch: 3, 4, 15, 16
 - Square key- ch2
 - Ch: 1, 2, 13, 14
 - Large filter frame
 - Placement shown→
 - Light-tight box adjacent
 - G10 support pieces
 - Used to attach to cathode



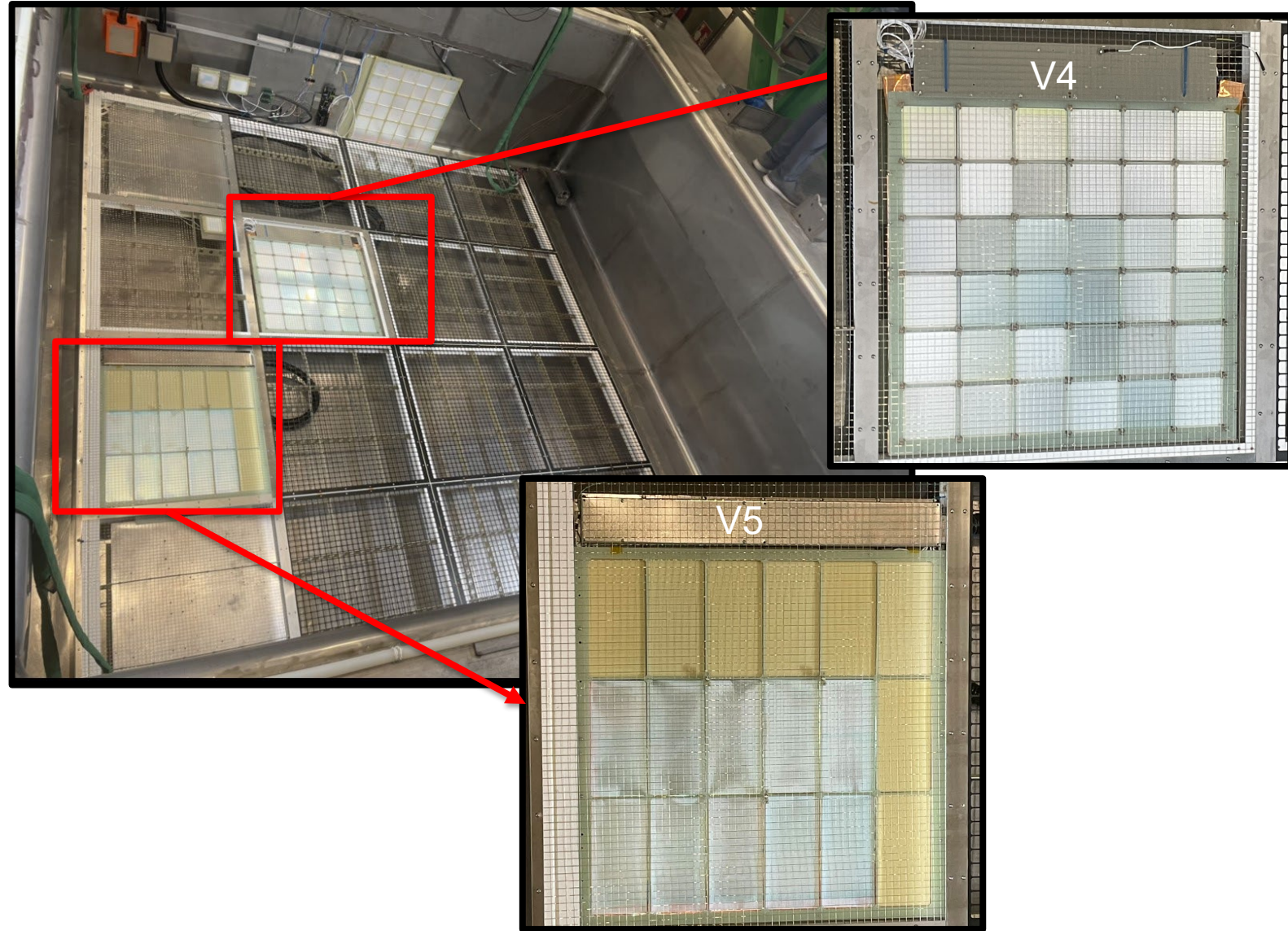
Attaching v4 to Cathode

- G10 support pieces
 - Used to attach to cathode
- Light-tight box installed



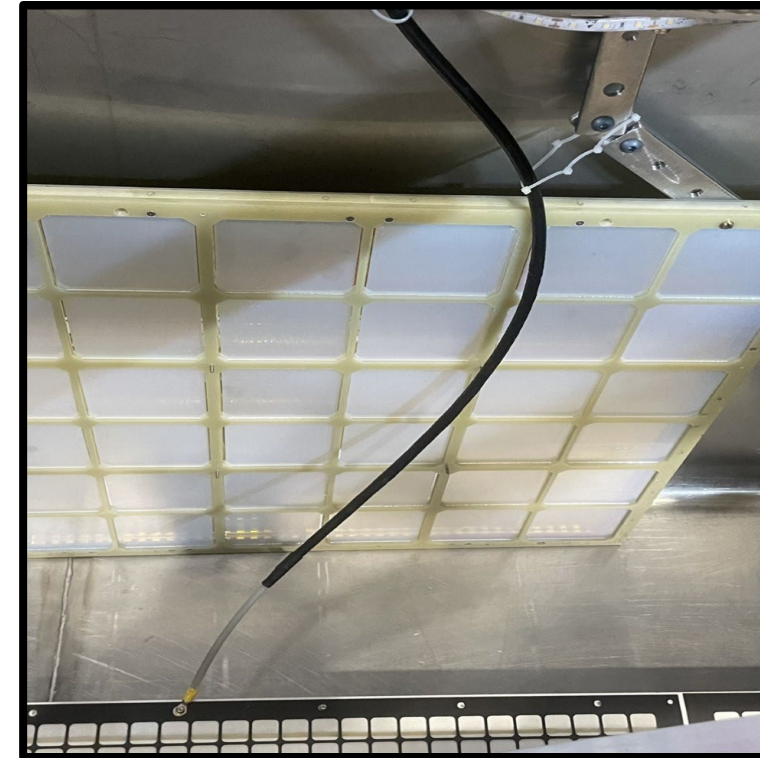
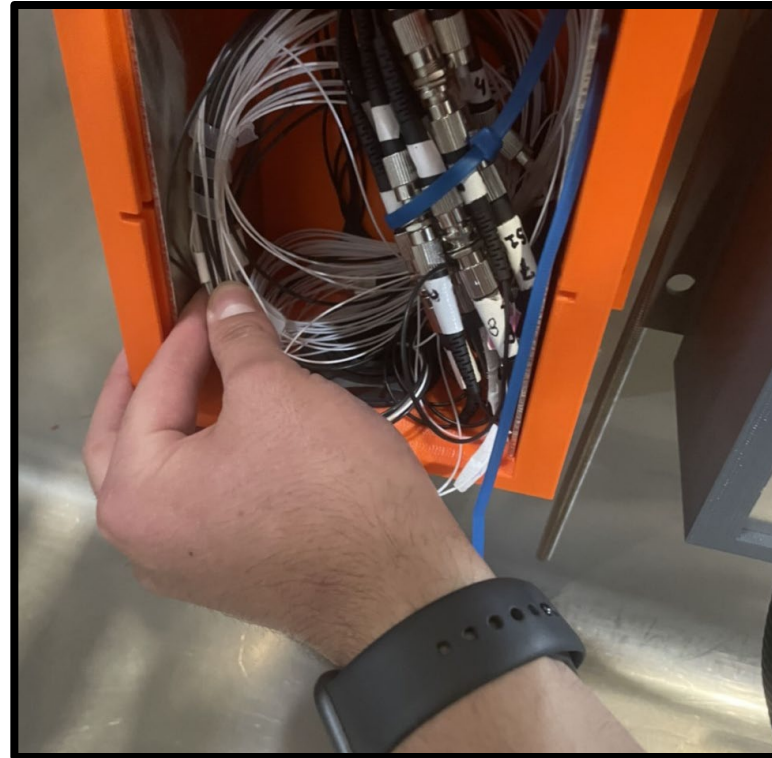
VD-PDS +Cathode Installed

- Finished PDS Installation
 - 13:00 on Oct. 31st, 2022
- Added
 - 2 inner Aluminium plates to reduce light pollution
 - Strain relief for fibers
- Connected the HV to the Cathode
 - Zip-tied to coldbox to remove contact from CRP
- Coldbox closed
 - 14:00 on Oct. 31st, 2022



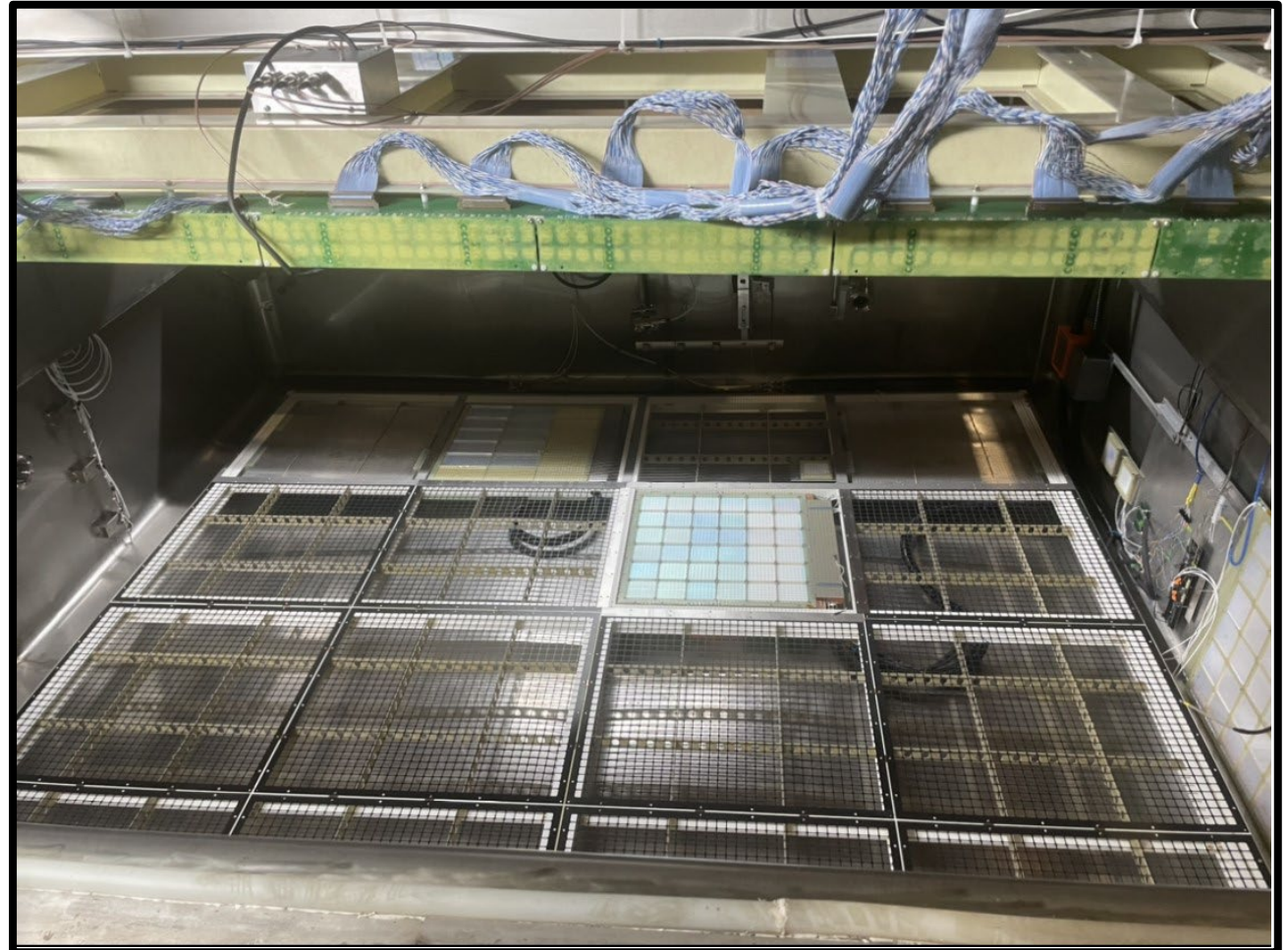
VD-PDS +Cathode Installed

- Finished PDS Installation
 - 13:00 on Oct. 31st, 2022
- Added
 - 2 inner Aluminium plates to reduce light pollution
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- Connected the HV to the Cathode
 - Zip-tied to coldbox to remove contact from CRP
- Coldbox closed
 - 14:00 on Oct. 31st, 2022



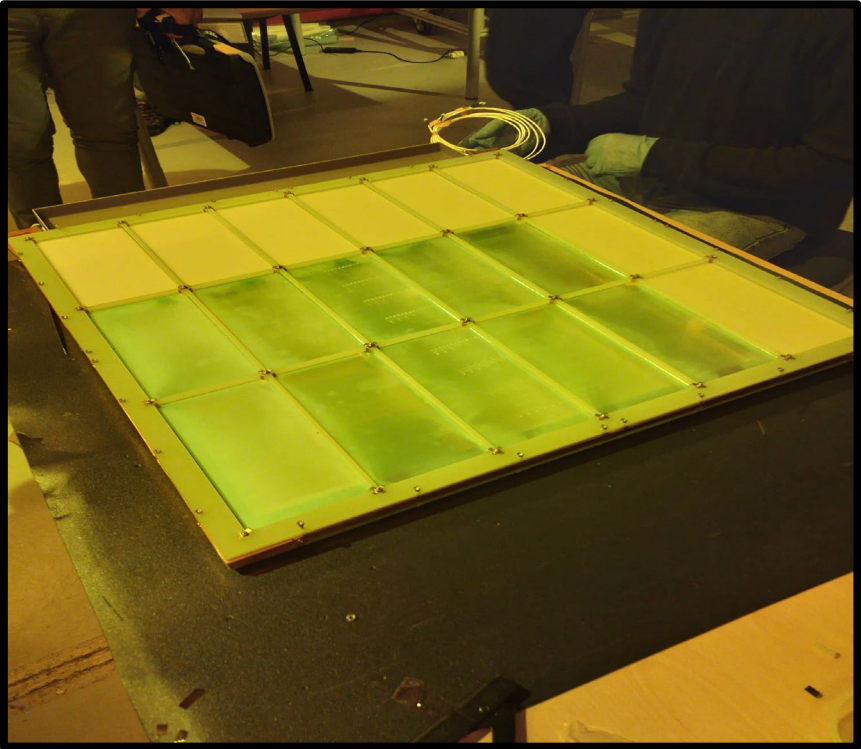
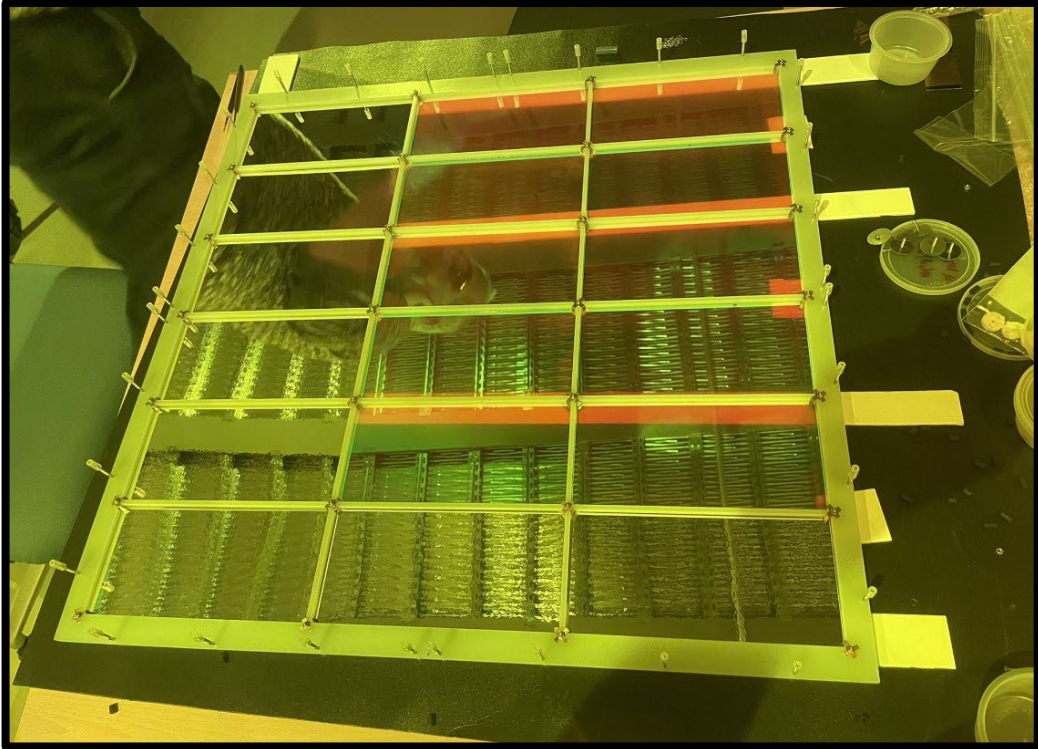
Coldbox Closed

- Finished PDS Installation
 - 13:00 on Oct. 31st, 2022
- Added
 - 2 inner Aluminium plates to reduce light pollution
 - Strain relief for fibers
- Connected the HV to the Cathode
 - Zip-tied to coldbox to remove contact from CRP
- **Coldbox closed**
 - 14:00 on Oct. 31st, 2022



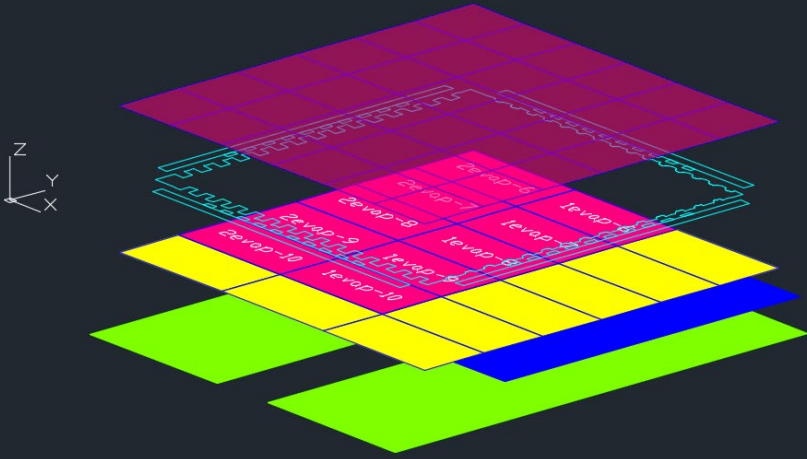
Extras

Large Filter Frame

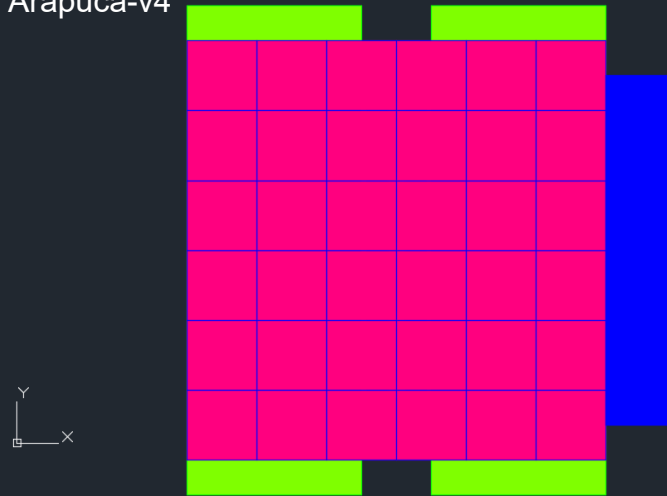


ARAPUCA-V4

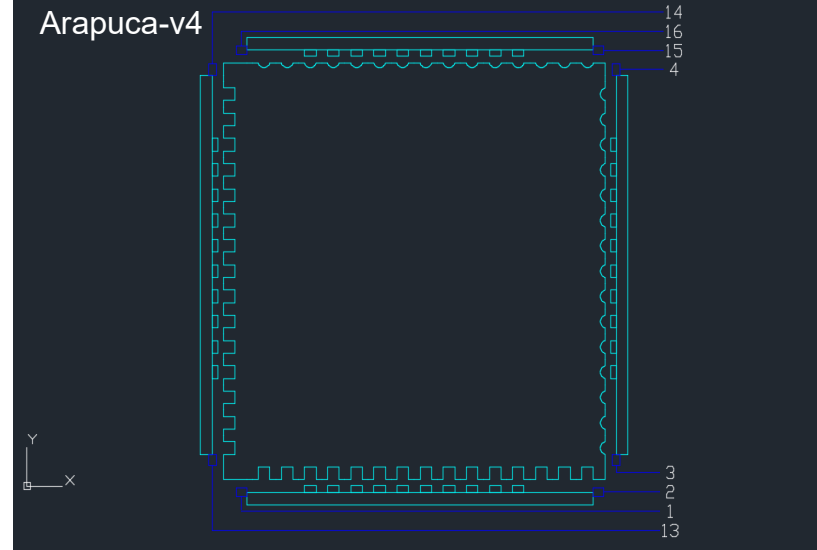
Arapuca-v4



Arapuca-v4



Arapuca-v4



Arapuca-v4

2evap-6	1evap-6	G10+Vikuiti
2evap-7	1evap-7	G10+Vikuiti
2evap-8	1evap-8	G10+Vikuiti
2evap-9	1evap-9	G10+Vikuiti
2evap-10	1evap-10	G10+Vikuiti
G10+Vikuiti	G10+Vikuiti	G10+Vikuiti

Arapuca-v4

