

# ProtoDUNE-VD/NP02

## PDS Signal Flange Closure/Purge Start

### Checklist – Photon Detector System

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## Revision History and Version Control

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The current approved version is available in <https://edms.cern.ch/document/3172503/1>

Version	Author	Revision Date	Location	Description of Changes
1.0	FLC/DWW	12-NOV-2024		Update of document with planned checklist by PDS Consortium to cover PDS flange closure.
1.1	FLC/DWW	1-Dec-2024		Update checked items in checklist

## 1. Purpose

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This document provides a checklist of the detector and electronics tests and checks to be completed before beginning the GAr purging of NP02. The Photon Detector Consortium will complete and sign on as completed before the GAr purge. Note that detailed procedures and instructions can be found in the document entitled “Protocol for NP02 PDS Flange Closure and Testing Procedures” in <https://edms.cern.ch/document/3172503/1>.

### 1.1. Checkout before PDS signal flange closure.

Prior to closure of the personnel access flange (“Manhole”) All PDS modules were tested to confirm operability. Since that testing additional operations have occurred inside the cryostat, requiring a final check prior to sealing the signal flange to ensure operability.

#### □ ***Final VD PDS Checkout prior to signal flange closure:***

- Re-confirm grounding and shielding at flange as per NP02 PDS Flange Closure and Testing Procedure Document.
- Confirm continued operation of all 8 cathode modules (Procedure 3.2.1 in NP02 PDS Flange Closure and Testing Procedure Document).
- Confirm operation of all 8 membrane modules (Procedure 3.2.2 and 3.2.3 in NP02 PDS Flange Closure and Testing Procedure Document).
- Confirm operation of (75%) monitoring system flashers as per NP02 PDS Flange Closure and Testing Procedure Document.

#### □ ***VD PDS Signal Flange Closure Procedure:***

- Close PDS signal flange following procedure 4 in NP02 PDS Flange Closure and Testing Procedure Document).
- Re-confirm ground and shielding at flange as per NP02 PDS Flange Closure and Testing Procedure Document.
- Following confirmation that all other cryostat flanges are closed, confirm cryostat is light-tight (using PMT system as a cross-check?).
- Confirm continued operation of all 8 cathode modules (Procedure 3.2.1 in NP02 PDS Flange Closure and Testing Procedure Document).
- Confirm operation of all 8 membrane modules (Procedure 3.2.2 and 3.2.3 in NP02 PDS Flange Closure and Testing Procedure Document).
- Confirm operation of all monitoring system flashers as per NP02 PDS Flange Closure and Testing Procedure Document.

**VD PDS Signal Flange Closure Procedure:**

- Confirm PDS flange is leak-tight with NP02 cryogenic operations. Procedure specified by NP02 Team.
- PDS Consortium release for GAr purge start.

## 2. Signatures

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Ettore Segreto

  
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