

Summary of Preshower Tile Measurements



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Preshower Tiles

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- Measurements were conducted on tiles from three different sources: CNCS, IHEP, and Kedi.
- The dimensions of the tiles are approximately the same and listed in the table below.
- The “side leg” is the length of the groove towards the end of the tile from which the fibers exit the tile.

Tile Source	Groove Width [mm]	Groove Diameter [cm]	Groove Depth [mm]	Tile Thickness [cm]	Side Leg [cm]
CNCS	1.0	9.0	6.0	2.0	2.7
IHEP	1.0	9.0	7.5	2.0	3.5
Kedi	2.0	9.0	6.0-7.0	2.0	2.5

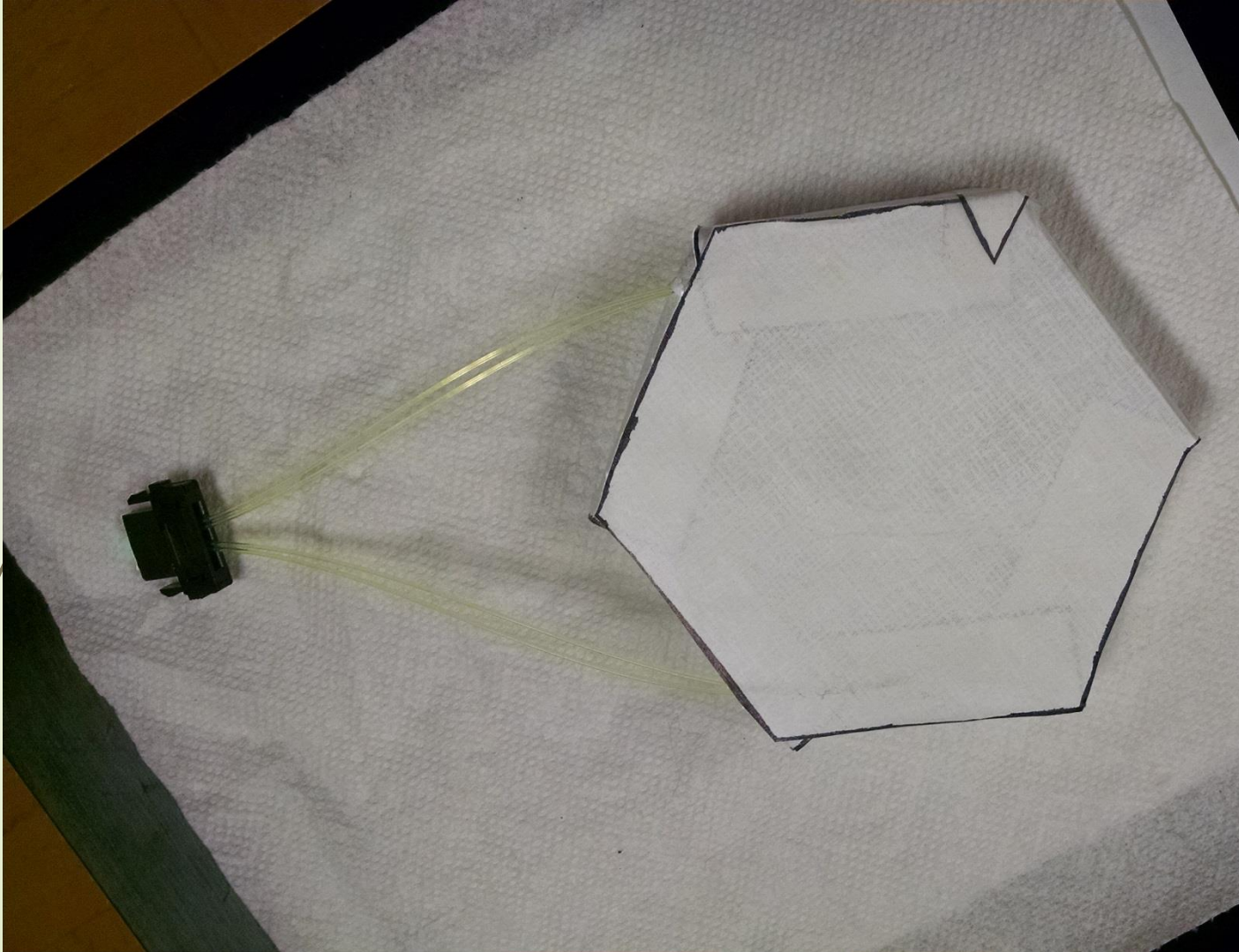
Test Conditions

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- Each tile had two **Kuraray** Y11 (200 ppm) 1-mm diameter fibers embedded.
- For the IHEP tile tests, two 1.5-m fibers were taken and cut to 1.177 m.
- For the CNCS and Kedi tile tests, 1.2-m long fibers were cut from a 500-m spool of fiber.
- Optical grease was placed inside the grooves of each tile.
- After the fibers were embedded inside the grooves, the tiles were **wrapped in Tyvek paper**. The fiber ends were then trimmed so that approximately 20 cm of fiber extended from the tiles.
- After the fiber ends were cut, the ends were polished.

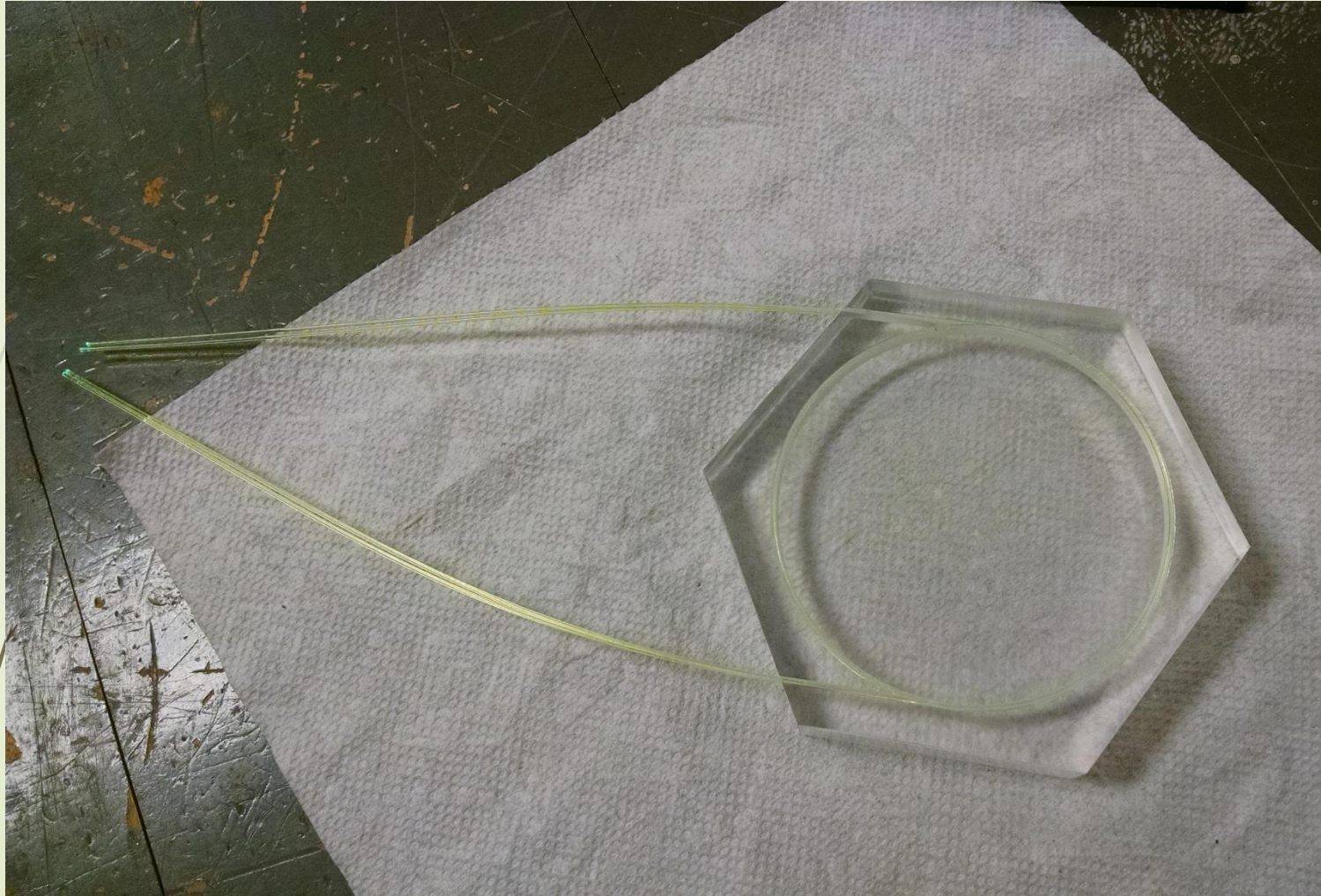
IHEP Tile Wrapped in Tyvek

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CNCS Tile

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Tile Results Summary

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Each tile had 2 fibers embedded

The light from each tile was collected with a
Photonis, **XP2262 PMT**

Tile Source	Number of Fiber Turns	Length Embedded [cm]	Number of PE
CNCS #1	2.5 each fiber	151	83.4
CNCS #2	2.5 each fiber	151	84.7
CNCS #3	2.5 each fiber	151	92.8
CNCS #4	2.5 each fiber	151	81.0*
IHEP	2.5 each fiber	155	77.8*
Kedi #1	2.5 each fiber	151	87.1
Kedi #2	2.5 each fiber	151	85.4
Kedi #3	2.5 each fiber	151	87.0
Kedi #4	2.5 each fiber	151	91.0

Notes on Tile Results

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- The IHEP tile results should be reproduced with the same fibers as used in the CNCS and Kedi tests.
- Later tests with the IHEP tile, though with shorter fiber ends, indicated about 100 photoelectrons.
- CNCS tile #4 had a small piece of plastic obstructing the pathway where the straight and circular grooves meet.

This burr was cut away to allow the fibers to lie inside the groove.

