

Hall D LH2 Cryotarget

Values listed below are nominal. Final dimensions will be determined on an as-built basis.

CD Keith, Jan 28, 2014

Item	Material	Z position (cm)	Density (g/cm ³)	Dimensions (cm)
Target entrance window	Kapton, 75um	0	1.42 ¹	1.56 id, 75 um thick
Target fluid, conical ~18 K, 16 psiA	Liquid hydrogen, 30 cm	0-30	0.0734 ²	2.42 dia. at entrance 1.56 dia. at exit
Target Exit window	Kapton, 75 um	30	1.42	1.56 id
Super-insulation	Aluminized- mylar+cerex (5 layers)	30	2.9 mg/cm ² per layer ³	--
Scattering chamber exit window ⁴	Aluminum, 25 um	TBD	2.70	2.54 dia.
Target cell, conical (not in beam path)	Aluminized kapton, 127 um	--	1.42	2.42 id at ent. window 1.56 id at exit window
Super-insulation (not in beam path)	Aluminized- mylar+cerex (5 layers)	--	2.9 mg/cm ² per layer ⁵	--
Scattering chamber ⁶ (not in beam path)	Aluminum-lined Rohacell	--	~110 mg/cm ³	11.1 OD, 1 thick

¹ http://www2.dupont.com/Kapton/en_US/products/HN/

² <http://webbook.nist.gov/chemistry/fluid/>

³ Measured, JLab Target Group

⁴ TBD, values based on FROST exit window

⁵ Measured, JLab Target Group

⁶ The scattering chamber is not yet designed. Input from Hall D is required to set the distance from the LH2 cell and the exit window. Above dimensions based on FROST scattering chamber.