LBNE Component Remote Handling List V4

Component Name	Description	Boundary dimensions				Weight	Replacement frequency	Max dose rate	
		shape	length	width/dia	height	(kg)	(per yr)		
		(rectangular or cylindrical, m)	(along beam direction, m)	(horizontal, transverse to beam, m)	(vertical, transverse to beam, m)			(on contact, greater of 1 yr op or expected lifetime of component, 24 hr cool-down, R/hr)	(on contact, greater of 1 yr op or expected lifetime of component, 10 day cool-down, R/hr)
700 kW									
Proton Window	Replaceable primary beam window	rectangular	0.4	0.5	1	200	**0.2**	25	20
Proton Window Module	Support structure for window (is window de-coupled from support structure?)	rectangular	0.75	2	3	12,000	0.05 (handled 0.5)	40	25
Baffle	Protective mask for Horn 1 IC and Target cooling	cylindrical	**2.5**	0.5	NA	100	0.2	30	20
Baffle Module	Support structure for Baffle	rectangular	1.75	2	3	20,000	0.05 (handled 0.5)	40	25
Target	Water-cooled graphite rod inserted into Horn 1 IC	cylindrical	**1.5**	0.4	NA	25	**1.5**	50	40
Target Module	Support structure for target	rectangular	2	2	3	20,000	0.05 (handled 2)	85	70
Horn 1	Focusing lens around Target	rectangular	3.5	1	1.5	1,000	0.5	600	450
Horn 1 Module	Suport structure for Horn 1	rectangular	3.5	2.5	3	30,000	0.05 (handled 0.5)	4000	3400
Horn 2	Focussing lens DS of Horn 1	rectangular	**4.3**	**1.4**	**2.3**	1,500	0.5	75	55
Horn 2 Module	Support structure for Horn 2	rectangular	3.5	2.5	3	30,000	0.05 (handled 0.5)	100	75
Chase Cooling Panels	Water-cooled steel shielding plates around Horn 1 (maybe not needed for 700 kW?)	rectangular	2	1.2	2	25,000	0.05	1500	1300
Decay Pipe Collimator?	Water cooled steel shielding plates in necked down region (maybe not needed for 700 kW?)	rectangular	2	2	2	25,000	0.05	150	100
T-blocks	Steel shielding blocks over components	rectangular	0.3	2	3	15,000	.05 (handled 3)	150	100
Blue blocks	Steel shielding blocks	rectangular	**1.3**	**0.7**	**1.3**	10,000	0.05	150	100
Marble shield masks	6" thick marble plate assemblies	rectangular	1	2	0.15	200	.05 (handled 3)	0.2	0.1
Chase covers	Air seal (and poly?) covers over hands-on module work area. Maybe not remote handled?	rectangular	3	3	0.2	500	.05 (handled 3)	0.02	0.01

red denotes initial guess
blue denotes 50% confidence level or based on NuMI scaling
green denotes 90% confidence based on LBNE design