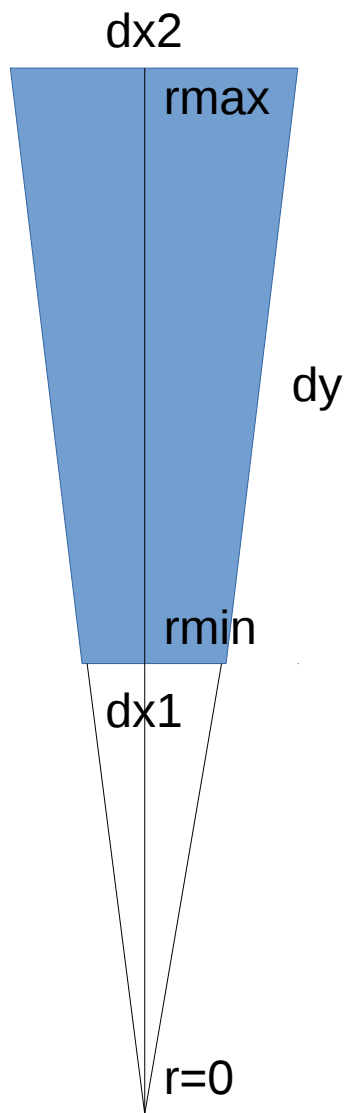


Coordinate system:

- right handed coordinate system with z in beam direction, y up and x left (when looking in beam direction)
- (0,0,0) at target position
- center of all layers at $x=y=0$
- $\phi = 0$ is in x direction, positive ϕ values describe rotations from x direction towards y direction, i.e. $\phi = \text{atan2}(y,x)$



Layer	dx1 [mm]	dx2 [mm]	dy [mm]	D [mm]	rmin [mm]	rmax [mm]	@R [mm]	@z [mm]
FWC1	9.5	97.1	356.3	3	3.9		206.4	1075
FWC2	9.5	98.2	339.6	3	3.9		208.8	1162
FTH	6.3	74.7	531.7	5	48.3	580	314.2	1577
FRH1	11	155.0	548.0	110	42	590	316.0	1766.5
FRH2	11	171.0	608.0	110	42	650	346.0	1901.5
FRH3	11	186.9	668.0	110	42	710	376.0	2036.5
FRH4	11	208	788.0	150	42	790	436.0	2194
FRH5	11	208	788.0	150	42	790	436.0	2374

All scintillators: wrapping 20 μ m mylar and 80 μ m tedlar

FWC 1:

- tilted out of the perpendicular plane towards downstream by 20 degr.
- 24 elements, element 1 @ $\phi = 7.5$ degr.
- elements 1,6,7,12,13,18,19,24 are smaller in x by 2.6mm (due to a 5mm support)

FWC 2:

- 24 elements, element 1 @ $\phi = 0$ degr.

FTH:

- 48 elements, element 1 @ $\phi = 3.75$ degr.

FRH:

- each layer with 24 elements, element 1 @ $\phi = 7.5$ degr.
- FRH1,2,3: covered on both sides with 0.2mm paper
- FRH4 and FRH5: covered on both sides with 8mm plexiglas

FPC:

Double layer 1,2: tubes perpendicular to $\phi = 225$ degr, z = 1219 mm

Double layer 3,4: tubes perpendicular to $\phi = 315$ degr, z = 1279 mm

Double layer 5,6: tubes perpendicular to $\phi = 270$ degr, z = 1399 mm

Double layer 7,8: tubes perpendicular to $\phi = 0$ degr, z = 1339 mm

(last layers were swapped, but numbering in software was kept)

Each double layer is covered by 20 μ m aluminum foil on both sides for shielding

Tubes: 8mm diameter, 26 μ m mylar walls, 20 μ m stainless steel wire, 950mm long

tube numbering per layer see next page

numbers are positive in given direction, negative to the opposite side

Gas: 20% C₂H₆ / 80% Ar

FPC: one double layer

