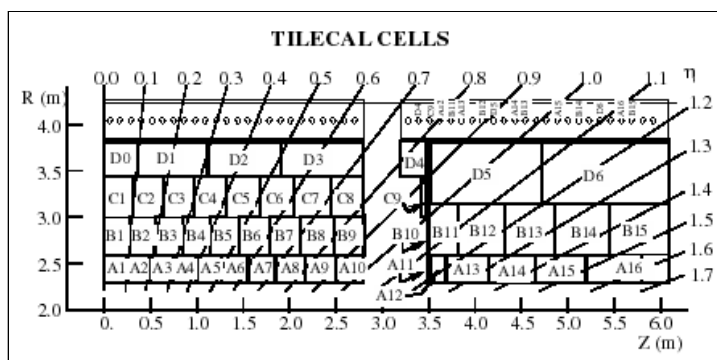


TileCal Trigger Towers



The figure (eps) shows the barrel and extended barrel sections of the Tile Calorimeter. Signals from the scintillators are grouped into the rectangular cells shown and each cell is viewed by a pair of photomultipliers (called L and R in the tables below). In the barrel section, cells Bi and Ci are viewed by the same pair of photomultipliers. The cell dimensions are chosen to obtain pseudo-projective towers of nominal width $\Delta\eta = 0.1$. The D cells, which normally contain very little energy, have a width $\Delta\eta = 0.2$. One PMT is put in each of the two appropriate $\Delta\eta = 0.1$ towers. Thus each tower contains three longitudinal segments.

BARREL			EXTENDED BARREL		
Eta	PMTs by cell	PMTs by position	Eta	PMTs by cell	PMTs by position
0.0-0.1	A1R A1L BC1R BC1L D0R	5 2 3 4 1	0.8-1.0	D4R D4L C9R C9L D5R	3 4 5 6 17
0.1-0.2	A2R A2L BC2R BC2L D1L	9 6 7 8 14	1.0-1.1	B11R B11L D5L	9 10 18
0.2-0.3	A3R A3L BC3R BC3L D1R	11 10 13 12 15	1.1-1.2	A12R A12L B12R B12L D6R	7 8 15 16 37
0.3-0.4	A4R A4L BC4R BC4L D2L	19 16 17 18 26	1.2-1.3	A13R A13L B13R B13L D6L	11 12 23 24 38
0.4-0.5	A5R A5L BC5R BC5L D2R	21 20 23 22 27	1.3-1.4	A14R A14L B14R B14L	21 22 33 34
0.5-0.6	A6R A6L BC6R BC6L D3L	25 24 29 30 40	1.4-1.6	A15R A15L B15R B15L A16R A16L	29 30 43 44 41 42
0.6-0.7	A7R A7L BC7R BC7L D3R	31 28 35 36 43			
0.7-0.8	A8R A8L BC8R BC8L	37 34 41 42			
0.8-1.0	A9R A9L B9R B9L A10R A10L	39 38 45 46 47 48			

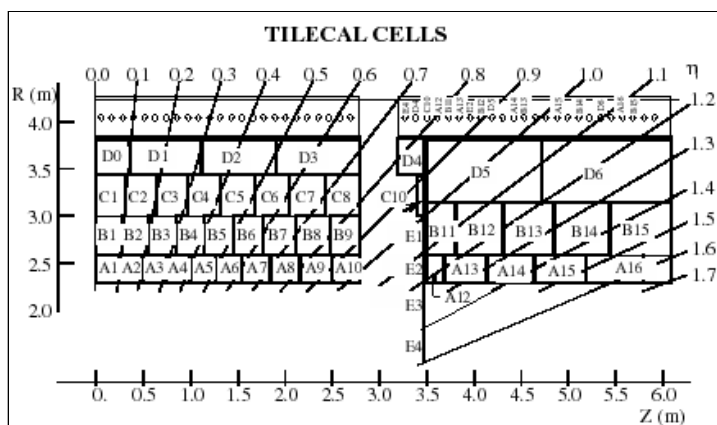
Notes:

1. This page has been updated to reflect the PMT assignments used in the '98 and '99 configuration of the barrel-module-0 sector.
2. The barrel cell D0 is the same size as the other D cells but spans the centerline of the calorimeter. Cells A1, B1, C1 have one edge on the centerline.
3. In the overlap region between barrel and extended barrel, the eta interval of the tower is 0.2. This is also the case at the high-eta end of the extended barrel.
4. Since there can be no connections between the barrel and extended barrel, the addition of tower signals from the overlap region (0.8-1.0) must be done off the detector. This is most naturally done at the input to the LVL1 trigger.
5. Signals from the "gap" scintillator (B10) and the "cryostat" scintillator (A11) are not proposed for the LVL1 since their use is specialized. They will be available for LVL2.
6. [Here](#) you can see the trigger boards for '99 testbeam, the circuit that builds the tower signals for the LV1 trigger.

Last updated: June 15, 1999.

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TileCal Trigger Towers



The figure (eps) shows the barrel and extended barrel sections of the Tile Calorimeter. Signals from the scintillators are grouped into the rectangular cells shown and each cell is viewed by a pair of photomultipliers (called L and R in the tables below). In the barrel section, cells Bi and Ci are viewed by the same pair of photomultipliers. The cell dimensions are chosen to obtain pseudo-projective towers of nominal width $\Delta\eta = 0.1$. The D cells, which normally contain very little energy, have a width $\Delta\eta = 0.2$. One PMT is put in each of the two appropriate $\Delta\eta = 0.1$ towers. Thus each tower contains three longitudinal segments.

BARREL			
Eta	PMTs by cell	PMT Positions	Adder Position
0.0-0.1	A1R A1L BC1R BC1L D0R	5 2 3 4 1	4
0.1-0.2	A2R A2L BC2R BC2L D1L	9 6 7 8 14	7
0.2-0.3	A3R A3L BC3R BC3L D1R	11 10 13 12 15	10
0.3-0.4	A4R A4L BC4R BC4L D2L	19 16 17 18 26	15
0.4-0.5	A5R A5L BC5R BC5L D2R	21 20 23 22 27	21
0.5-0.6	A6R A6L BC6R BC6L D3L	25 24 29 30 40	28
0.6-0.7	A7R A7L BC7R BC7L D3R	31 28 35 36 43	31
0.7-0.8	A8R A8L BC8R BC8L	37 34 41 42	34
0.8-0.9	A9R A9L B9R B9L	39 38 45 46	42
0.9-1.0	A10R A10L	47 48	45

EXTENDED BARREL			
Eta	PMTs by cell	PMT Positions	Adder Position
0.8-0.9	D4R D4L	3 4	4
0.9-1.0	C10R C10L D5R	5 6 17	7
1.0-1.1	B11R B11L D5L	9 10 18	10
1.1-1.2	A12R A12L B12R B12L D6R	7 8 15 16 37	21
1.2-1.3	A13R A13L B13R B13L D6L	11 12 23 24 38	15
1.3-1.4	A14R A14L B14R B14L	21 22 33 34	28
1.4-1.6	A15R A15L B15R B15L A16R A16L	29 30 43 44 41 42	34

Notes:

1. The PMT and adder positions correspond to the holes for PMTs in a superdrawer. They number from 1 to 48 starting at the innermost end.
2. This page reflects the PMT assignments used in the '98 configuration of the barrel-module-0 sector and in subsequent production. It also reflects a change following the design review of the adder where it was requested to retain towers of $\Delta\eta$ of 0.1 in the overlap region between barrel and extended barrel. This necessitated the Version 3 Mother Boards to have 10 adders rather than 9.
3. The barrel cell D0 is the same size as the other D cells but spans the centerline of the calorimeter. Cells A1, B1, C1 have one edge on the centerline.
4. At the high-eta end of the extended barrel the tower size is $\Delta\eta$ of 0.2.
5. Since there can be no connections between the barrel and extended barrel, the addition of tower signals from the overlap region (0.8-1.0) must be done off the detector. The LVL1 trigger group has agreed to do this at the input to the LVL1 trigger.
6. Signals from the "plug extension" or "gap" scintillators (E1,E2) and from the "inter-cryostat" scintillators (E3,E4) are not proposed for the LVL1 since their use is specialized. They will be available for LVL2. They use PMTs 13, 14, 1, 2, respectively.

Last updated: August 2, 2000.