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Luminosity Component Signal Propagation Delays

These are estimates of the propagation delays in the component detectors and signal cables up to the input to the FADC board. This will be a table which changes in time as the cable lengths are determined. The ultimate table should have the total sum of these times equal for each component (modulo 96 ns). The first column gives the arrival time of the particles at the detector component relative to the bunch crossing time at the interaction vertex. All units are nanoseconds unless otherwise indicated. Propagation speeds of 5.0 ns/m (lemo) and 4.3 ns/m (Cellflex and C-50-6-1) have been assumed. The FADC clock can be shifted in steps of 5 ns with respect to the HERA clock for each FADC module. It should suffice to ensure that the inputs within a given FADC module are synchronized. Adjustments of a few nanoseconds can be made in the lemo-cable connection between the patch panel and the FADC modules in the DAQ rack in the hall.

Component	Arrival Time	Detector	Cable to FEC	FEC	Cable to Local PP	RG213 or Cellflex	Cable to FADC	Total	Modulo 96	Bunches Shifted
Photon Cal	322	33	89	20	20	538 (125 m)	10	1032	72	10
Čerenkov 1	318	57	69	20	20	538 (125 m)	10	1032	72	10
Čerenkov 2	321	57	66	20	20	538 (125 m)	10	1032	72	10
Position Det	323	11	110	20	20	625 (125 m)	10	1019	63	11
Spectrometer	312	10	55	20	20	536 (125 m)	10	963	3	10
40m Energy	120	32	65	20	20	280 (65 m)	10	542	71	6
40m Position	120	12	85	20	20	280 (65 m)	10	542	71	6
6m Tagger	17	10	15	20	10	215 (50 m)	10	287	95	2