TECHNICAL SPECIFICATIONS

General Features	
Parameter	**Value**
CMOS technology	0.13 um
Pixel matrix	256 x 256
Pixel size	55 um x 55 um
Design	CERN, NIKHEF, Bonn University
Features	• Two main measurement modes: (1) simultaneous 10 bit ToT and 18 bit TOA and (2) 10 bit event counting and 14 bit integral TOT • TOT monotonic for large positive charges • Fast TOA for time stamping with a precision of 1.56 ns • Data driven readout: dead time free, for a maximum hit rate of 40 Mhits/s/cm^2 • Shutdown/wake-up features for power pulsing tests on a full system
Power supply	
Number of transistors	
Analog Front end	
Parameter	**Value**
Baseline Preamplifier output	
Signal polarity	Positive and negative
Detector capacitance	25 to 100 fF
Leakage current	-5 to 20 nA
TOT monotonicity	Up to 300Kh+
TOA jitter and mismatch	Compatible with 1.56ns resolution (gas detector applications)
Time to peak	25 ns (in view of VELOpix)
Noise + threshold mismatch	90e-
Equalization DACs	4 bit (compensate pixel to pixel threshold mismatch)
Analog static power consumption	12 uW/pixel