



Generate Pointlist Circle	0.213	0.115	0.137	0.090	0.042	0.042	0.042	500 points
Pointlist Read Pixels	0.300	0.164	0.177	0.118	0.023	0.023	0.024	1000 points
Pointlist Edge Detection	0.076	0.041	0.051	0.034	0.02	0.02	0.02	1000 points
Pointlist Best Line	0.038	0.021	0.026	0.025	0.01	0.01	0.01	10 points
Pointlist Best Circle	0.039	0.021	0.026	0.024	0.01	0.01	0.01	10 points
Point-list distance tool	0.320	0.174	0.205	0.136	0.036	0.036	0.037	1000 points
Compare point-lists tool	11.003	6.283	7.086	4.901	5.400	5.400	5.470	Temp=100, Targ=1000, absolut, circle
Fast compare point-lists tool	0.662	0.361	0.423	0.287	0.032	0.032	0.033	Temp=100, Targ=1000, Num step=1000, absolut, cicl.
Pointlist Sort	2.574	1.403	1.635	1.090	0.228	0.228	0.229	Temp=1000, Targ=1000, sort by param0
Pointlist Filter	0.077	0.042	0.052	0.041	0.003	0.003	0.003	Temp=1000, Targ=1000
Save pointlist	4.939	2.749	2.777	1.905	1.002*	1.002*	1.012*	740 points, *TI Media Drive
Load pointlist	0.187	0.103	0.121	0.089	0.472*	0.472*	0.482	740 points, *TI Media Drive
Pointlist median filter	0.168	0.092	0.110	0.081	0.006	0.006	0.006	1000 points
Pointlist Display	0.355	0.194	0.227	0.151	0.016	0.016	0.017	1000 points destructive mode
	0.031	0.018	0.022	0.015	0.001	0.001	0.001	1000 points overlay
Pointlist Transform	0.070	0.038	0.047	0.030	0.002	0.002	0.002	500 points
Contour Matching	N/A				0.035	0.035	0.035	Temp=740, Targ=500
Match Filter	N/A				0.002	0.002	0.002	500 points
Pointlist angle tool	0.403	0.220	0.258	0.171	0.064	0.064	0.065	1000 points
Load user-program								
Take Picture								
Copy Picture								
Select calibration set								
Pause Tool								
Timer Tool	0.031/0.033*	0.018/0.017**	0.022	0.022/0.014**				*Show mode, **Live mode
Start Exec								
Free pattern tool								
Get Cycles								

**Main cycle :**

VIMOS execution goes through a cycle that takes some time even if the user-program is empty. This time is an overhead and should be expected. It depends on the camera type, the display mode and if an image is taken at the beginning of the cycle (Shoot) or not (Live, Show). Generally the fastest possible image-processing could be done on a VC2038 in 'Shoot&Show' mode with switched OFF overlay image (Draw) and switched OFF anti-flicker delay. The image should be taken with the special trigger input or in trigger mode of IN0.

Main cycle:

Camera	Shoot & Show	Live & Shoot	Live	Show
VC38, Draw on	0.105 Sec	0.141 Sec	0.070 Sec	0.074 Sec
Draw off	0.062 Sec	0.102 Sec	0.013 Sec	0.020 Sec
VC61, Draw on	0.208 Sec	0.179 Sec	0.088 Sec	0.110 Sec
Draw off	0.139 Sec	0.129 Sec	0.017 Sec	0.031 Sec

Main cycle for VC2038: ( Logo On, Anti-flicker delay On )

Shutter	Shoot & Show		Live & Shoot		Live		Show	
	Draw on	Draw off	Draw on	Draw off	Draw on	Draw off	Draw on	Draw off
0.005 Sec	0.079 Sec	0.029 Sec	0.108 Sec	0.083 Sec	0.051 Sec	0.001 Sec	0.040 Sec	0.001 Sec
0.010 Sec	0.084 Sec	0.034 Sec	0.117 Sec	0.092 Sec	0.051 Sec	0.001 Sec	0.040 Sec	0.001 Sec
0.020 Sec	0.091 Sec	0.042 Sec	0.133 Sec	0.108 Sec	0.051 Sec	0.001 Sec	0.040 Sec	0.001 Sec
0.030 Sec	0.100 Sec	0.050 Sec	0.151 Sec	0.125 Sec	0.051 Sec	0.001 Sec	0.040 Sec	0.001 Sec

Main cycle for VC2038 ( Shutter = 0.010 Sec )

Conditions	Shoot & Show		Live & Shoot		Live		Show	
	Draw on	Draw off	Draw on	Draw off	Draw on	Draw off	Draw on	Draw off
Logo	0.069 Sec	0.034 Sec	0.117 Sec	0.092 Sec	0.037 Sec	0.001 Sec	0.035 Sec	0.001 Sec
Off	0.083 Sec	0.034 Sec	0.117 Sec	0.092 Sec	0.050 Sec	0.001 Sec	0.050 Sec	0.001 Sec
On	0.069 Sec	0.034 Sec	0.117 Sec	0.092 Sec	0.037 Sec	0.001 Sec	0.035 Sec	0.001 Sec
On	0.084 Sec	0.034 Sec	0.117 Sec	0.092 Sec	0.050 Sec	0.001 Sec	0.050 Sec	0.001 Sec

**Some tools in detail :**

Most tools have small execution times and the total time comes of their combination and the module reloading on ADSP cameras. But some tools are more complex and have longer execution times. These times depend on the situation. Here we give some orientation what to expect.

3X3 operator	Live & Shoot			Shoot & Show			Show			Live		
	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038
VC camera	0.073	0.084	0.02	0.099	0.153	0.02	0.099	0.152	0.02	0.065	0.083	0.02
50x50 pixels	0.223	0.278	0.06	0.325	0.510	0.06	0.325	0.508	0.06	0.216	0.277	0.06
100x100 pixels	0.818	1.052	0.023	1.226	1.931	0.023	1.225	1.932	0.023	0.812	1.053	0.023
200x200 pixels	3.138	4.150	0.091	4.723	7.613	0.090	4.724	7.614	0.090	3.137	4.151	0.090

Percent-threshold	Live & Shoot			Shoot & Show			Show			Live		
	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038
VC camera	0.035	0.034	0.03	0.042	0.062	0.04	0.042	0.062	0.04	0.028	0.034	0.04
50x50 pixels	0.073	0.083	0.013	0.101	0.152	0.014	0.100	0.153	0.013	0.066	0.084	0.013
100x100 pixels	0.229	0.280	0.053	0.335	0.513	0.052	0.335	0.514	0.053	0.221	0.280	0.052
200x200 pixels	0.840	1.067	0.210	1.273	1.958	0.210	1.274	1.958	0.210	0.841	1.067	0.210

Save image area	Live & Shoot			Shoot & Show			Show			Live		
	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038
VC camera	0.071	0.068	0.039	0.094	0.123	0.034	0.095	0.124	0.034	0.065	0.069	0.039
50x50 pixels	0.201	0.183	0.134	0.283	0.327	0.131	0.282	0.326	0.132	0.196	0.184	0.131
100x100 pixels	0.712	0.754	0.502	1.023	1.233	0.490	1.023	1.235	0.490	0.706	0.755	0.502
200x200 pixels	2.682	3.082	1.754	3.893	4.800	1.802	3.894	4.801	1.802	2.683	3.083	1.754

Load image area	Live & Shoot			Shoot & Show			Show			Live		
	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038
VC camera	0.038	0.040	0.022	0.040	0.074	0.021	0.047	0.073	0.021	0.032	0.040	0.022
50x50 pixels	0.073	0.082	0.081	0.090	0.149	0.080	0.098	0.149	0.081	0.066	0.082	0.080
100x100 pixels	0.208	0.249	0.322	0.300	0.456	0.318	0.300	0.456	0.318	0.202	0.249	0.322
200x200 pixels	0.747	0.917	1.104	1.106	1.682	1.085	1.105	1.683	1.085	0.742	0.918	1.104

Correlation ini	Live & Shoot			Shoot & Show			Show			Live		
	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038
Camera	0.055	0.060	0.03	0.073	0.110	0.02	0.073	0.109	0.03	0.048	0.060	0.02
32x32 pixels	0.092	0.107	0.07	0.129	0.196	0.07	0.129	0.196	0.07	0.085	0.107	0.07
64x64 pixels	0.321	0.396	0.033	0.473	0.728	0.033	0.474	0.727	0.033	0.313	0.397	0.033

Correlation exec	Live & Shoot			Shoot & Show			Show			Live		
	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038	VC38	VC61	VC2038
Camera	0.245	0.306	0.047	0.361	0.561	0.048	0.361	0.563	0.048	0.238	0.306	0.048
Rate 870	0.233	0.258	0.050	0.342	0.539	0.051	0.339	0.540	0.049	0.225	0.260	0.049
Norm, 1 obj., 200x200	0.369	0.486	0.067	0.547	0.893	0.067	0.547	0.894	0.066	0.362	0.481	0.067
Fast, 1 obj., 200x200												
Fine, 1 obj., 200x200	0.245	0.296	0.048	0.360	0.544	0.048	0.361	0.543	0.048	0.238	0.296	0.048
Rate 900	0.237	0.270	0.049	0.344	0.513	0.049	0.344	0.508	0.049	0.228	0.264	0.049
Norm, 10 obj., 200x200	0.269	0.488	0.067	0.547	0.894	0.067	0.547	0.896	0.066	0.362	0.481	0.067
Fast, 10 obj., 200x200												
Fine, 10 obj., 200x200	0.340	0.356	0.093	0.528	0.637	0.102	0.518	0.624	0.091	0.336	0.340	0.092
Rate 870	0.232	0.250	0.080	0.380	0.529	0.075	0.378	0.528	0.075	0.233	0.251	0.075
Norm, 100x100	0.566	0.580	0.158	0.842	1.050	0.158	0.840	1.046	0.159	0.556	0.570	0.158
Fast, 100x100												
Fine, 100x100	0.202	0.234	0.030	0.295	0.428	0.030	0.295	0.430	0.030	0.196	0.234	0.030
Rate 870	0.201	0.218	0.027	0.292	0.399	0.027	0.293	0.399	0.030	0.194	0.217	0.030
Norm, 1000x1000	0.206	0.251	0.036	0.301	0.460	0.035	0.300	0.460	0.036	0.199	0.253	0.026

Point list distance	Live & Shoot			Shoot & Show		
	VC38	VC61	VC2038	VC38	VC61	VC2038
Camera	0.016	0.019	0.01	0.025	0.035	0.001
10 points, to point	0.027	0.031	0.04	0.040	0.063	0.004
100 points, to point	0.238	0.203	0.033	0.158	0.374	0.033
1000 points, to line	0.237	0.306	0.040	0.358	0.560	0.040
10000 points, point calib	0.260	0.335	0.034	0.391	0.616	0.034

Save point list	Live & Shoot			Shoot & Show		
	VC38	VC61	VC2038	VC38	VC61	VC2038
Camera	0.541	0.778	0.128	0.765	1.399	0.126
200 points	0.280	0.411	0.065	0.415	0.728	0.064

Load point list	Live & Shoot			Shoot & Show		
	VC38	VC61	VC2038	VC38	VC61	VC2038
Camera	0.044	0.047	0.007	0.055	0.085	0.007
200 points	0.036	0.037	0.005	0.043	0.066	0.005

Find blob	Live & Shoot			Shoot & Show		
	VC38	VC61	VC2038	VC38	VC61	VC2038
Camera	9.607	13.535		14.158	26.315	
255 objects, connected, destructive	0.511	0.670		0.775	1.237	
10 objects, connected, destructive	0.113	0.141		0.160	0.255	
255 objects, connected, No destructive	0.090	0.101		0.126	0.198	

OCR old – now faster if 0 deg	Live & Shoot			Shoot & Show		
	VC38	VC61	VC2038	VC38	VC61	VC2038
Camera	0.336	0.552	0.024	0.494	1.002	0.024
20 chars, 0 grad. Rotated	0.323	0.484	0.030	0.476	0.886	0.030

Point list compare	Live & Shoot			Shoot & Show		
	VC38	VC61	VC2038	VC38	VC61	VC2038
Camera	0.462	0.580	0.055	0.687	1.064	0.055
Cyclic, Temp=100, Targ=100	0.539	0.681	0.076	0.804	1.250	0.077
Absolute method	0.026	0.022	0.001	0.028	0.042	0.001
Relative	0.687	0.575	0.051	0.683	1.055	0.051
Normalized	0.804	0.675	0.074	0.798	1.237	0.074
Linear, Temp=10, Targ=1000	0.028	0.018	0.001	0.023	0.032	0.001

Point list fast compare	Live & Shoot			Shoot & Show		
	VC38	VC61	VC2038	VC38	VC61	VC2038
Camera, Num. of step=1000						
Cyclic, Temp=100, Targ=100						
Absolute method	0.022	0.018	0.001	0.022	0.031	0.001
Relative	0.022	0.018	0.001	0.022	0.031	0.001
Normalized	0.022	0.017	0.001	0.022	0.031	0.001
Linear, Temp=10, Targ=1000						
Absolute	0.053	0.059	0.004	0.070	0.106	0.004
Relative	0.057	0.063	0.006	0.075	0.115	0.006
Normalize	0.026	0.024	0.001	0.029	0.043	0.001