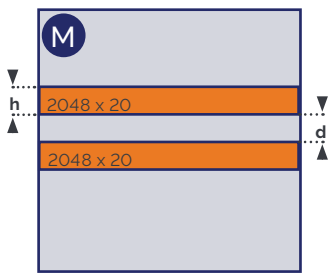


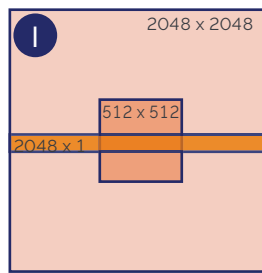
# Different Modes for Marana

## Multi-track Mode



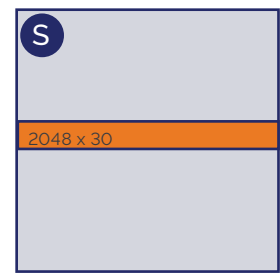
Up to 256 vertically binned tracks can be used for multi-track analysis without sacrificing speed.

## Imaging Mode



The array size may be defined for either resolution or maximum speed.

## Spectroscopy Mode



A vertically binned track is centred on the sensor enabling the maximum spectral rate to capture dynamic events.

## I Imaging Mode 4.2B-11

### Frame rate table

ROI Size (W x H)	Max Frame Rate (fps)		ROI area (of sensor)	Example scenarios of use
	16-bit	12-bit (Fast Speed)		
2048x2048	24	48	22.5 mm x 22.5 mm	Full FOV imaging, Space debris, NEOs, Hyperspectral
2048 x 1200	41	81	22.5 mm x 13.2 mm	High density multitrack on Kymera/Shamrock
1608x1608	30	61	17.7 mm x 17.7 mm	Reduced ROI, faster frame rates
1400x1400	35	70	15.4 mm x 15.4 mm	
1200x1200	41	81	13.2 mm x 13.2 mm	
1024x1024	48	95	11.3 mm x 11.3 mm	
512x512	95	190	5.6 mm x 5.6 mm	
256x256	190	378	2.8 mm x 2.8 mm	
128x128	378	750	1.4 mm x 1.4 mm	Single or dual track spectroscopy
2048x8	5415	9747	22.5 mm x 88 mm	
2048x2	16244	24367	22.5 mm x 22 mm	
2048x1	24367	24367	22.5 mm x 11 mm	Single track spectroscopy with ultrafast rates

## M Multi-track Mode 4.2B-11

### Vertically binned tracks (overlap ON)

Number of Tracks	Track height (h)		Track separation (d)		Max Acquisition Rate	
	Pixels	µm	Pixels	µm	16-bit	12-bit (Fast Speed)
2	10	110	10	110	2,321	4,430
2	10	110	0	0	2,321	4,430
2	20	220	10	110	1,189	2,321
6	50	550	40	440	162	323
10	10	110	0	0	483	956
10	20	220	0	0	242	483
10	30	330	30	330	162	323
50	20	220	0	0	49	97
60	20	220	0	0	41	81
100	20	220	0	0	24	49

**S** Spectroscopy Mode 4.2B-11  
Vertically binned tracks (overlap ON)

Array Size (W x H)	Max Spectra Rate	
	16-bit	12-bit (Fast Speed)
any x 1	24367	24367
any x 2	16244	24367
any x 8	5415	9747
any x 1200	41	81
any x 2048	24	48

**S** Spectroscopy Mode 4.2B-6  
Vertically binned tracks (overlap ON)

Array Size (W x H)	Max Spectra Rate	
	16-bit	12-bit (Low Noise)
any x 1	25253	14881
any x 2	25253	14881
any x 8	15152	8929
any x 1200	126	74
any x 2048	74	44

**I** Imaging Mode 4.2B-6  
Frame rate table

ROI Size (W x H)	Max Frame Rate (fps)				ROI area (of sensor)
	USB 3.0		CoaXPress		
	16-bit	12-bit (Low Noise)	16-bit	12-bit (Low Noise)	
2048x2048	40	43	74	44	13.3 mm x 13.3 mm
1400x1400	85	63	108	64	9.1 mm x 9.1 mm
1200x1200	116	74	126	74	7.8 mm x 7.8 mm
1024x1024	148	87	148	87	6.7 mm x 6.7 mm
512x512	295	174	295	174	3.3 mm x 3.3 mm
256x256	587	346	587	346	1.7 mm x 1.7 mm
128x128	1165	686	1166	687	0.8 mm x 0.8 mm

**M** Multi-track Mode 4.2B-6  
Vertically binned tracks (overlap ON)

Number of Tracks	Track height (h)		Track separation (d)		Max Acquisition Rate	
	Pixels	µm	Pixels	µm	16-bit	12-bit (Low Noise)
2	10	65	10	65	6887	4058
2	10	65	0	0	6887	4058
2	20	130	10	65	3608	2126
6	50	325	40	260	502	296
10	10	65	0	0	1485	875
10	20	130	0	0	750	442
10	30	195	30	195	502	296
50	20	130	0	0	151	89
60	20	130	0	0	126	74
100	20	130	0	0	76	45

Note: Frame/spectral rates do not differ if partial or full rows are selected. For Marana 4.2B-6 for frame rates using USB 3.0 for Multi-track and Spectroscopy modes please see our technical note: Marana Frame Rates, which is available in our [Learning Center](#).