

OUTGOING BEAM FROM HWS COLLIMATOR AT ETMX

Beam Widths

Beam Diameter (2 x radius) in um

Date Measured	Order measured (photos taken)	Closest to Source	Distance downstream from HWS - SOURCE (mm)	A1 horizontal 13.5%	A2 vertical 13.5%	A1 horizontal D4sigma	A2 vertical D4sigma
12/10/24	1	From collimator 105	105	2964	2976	3396	3478
12/10/24	2	From collimator 128	128	2940	2954	3233	3404
12/10/24	3	From collimator 158	158	2908	2922	3138	3272
12/10/24	8	Refect off BS, 35mm	448	3118	3082	4702	3781
12/10/24	9	Refect off BS, 95mm	508	3227	3173	4192	3673
12/10/24	4	From HWP 20mm	606	3329	3328	3394	3210
12/10/24	5	From HWP 95mm	681	4681	4015	5486	4217
12/10/24	6	From HWP 180mm	766	5658	4762	5854	5082
12/10/24	7	From HWP 295mm	881	6661	5517	6274	5487

< Note D4sigma not 50%

				A1 horizontal 13.5%	A2 vertical 13.5%	A1 horizontal 50% width	A2 vertical 50% width
2/11/25	1	From Collimator	5	3216	3255	2783	2832
2/11/25	2	From Collimator	50	3149	3062	2682	2609
2/11/25	3	From Collimator	74	3114	3039	2594	2556
2/11/25	4	From Collimator	122	3117	2989	2433	2379
2/11/25	5	From Collimator	154	3216	2956	2339	2268
2/11/25	6	Added Temporary Steering Mirror to take data	160	2959	2939	2289	2259
2/11/25	7	Added Temporary Steering Mirror to take data	221	3055	2978	2179	2128
2/11/25	8	Added Temporary Steering Mirror to take data	255	3058	2996	2078	2063
2/11/25	9	Added Temporary Steering Mirror to take data	320	3062	2984	1967	1920
2/11/25	10	Added Temporary Steering Mirror to take data	349	3042	2952	1905	1851
2/11/25	11	Added Temporary Steering Mirror to take data	401	3113	3037	1902	1850

< Note 50% not D4sigma

Closest to Vacuum

Distance

mm

HWS collimator to Mirror 1: 293mm

293

Mirror 1 to HWP (downstream side): 290mm

290

Mirror 1 to BS: 120mm

120

There is no Optics that would change the beam's shape in this path, just steering mirror, BS and HWP.

The 50% beam measurements (I have photos) showed a more symetric beam, maybe there was tails making the larger A1 vaules big.

