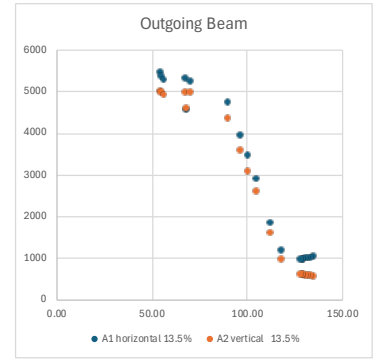


OUTGOING BEAM

Beam Widths (um)

| Data taken | Order measured (photos taken) | Distance from HWS/ALS beamsplitter ALS-M11 (mm) for 11/19, Distance from ALS lens ALS-L7 (inches) for 11/26 | Distance from VP (inches) | Beam Widths (um) | | | | |
|------------|-------------------------------|---|---------------------------|---------------------|-------------------|-----------------------|---------------------|------|
| | | | | A1 horizontal 13.5% | A2 vertical 13.5% | A1 horizontal D4sigma | A2 vertical D4sigma | |
| 11/19/24 | 3 | 280mm upstream of hws BS | -280 | 54.48 | 5455 | 4980 | 5290 | 4890 |
| 11/19/24 | 1 | 260mm upstream of hws BS | -260 | 55.26 | 5350 | 4960 | 5200 | 4890 |
| 11/19/24 | 2 | 220mm upstream of hws BS | -220 | 56.84 | 5270 | 4910 | 5110 | 4870 |
| 11/19/24 | 6 | 55mm downstream of hws BS | 55 | 67.67 | 5290 | 4955 | 5170 | 4910 |
| 11/19/24 | 4 | 70mm downstream of hws BS | 70 | 68.26 | 4540 | 4580 | 4560 | 4630 |
| 11/19/24 | 5 | 130mm downstream of hws BS | 130 | 70.62 | 5240 | 4970 | 5130 | 4950 |
| 11/26/24 | 3 | 6" upstream of L7 | 6 | 90 | 4738 | 4344 | 4644 | 4359 |
| 11/26/24 | 2 | 12.5" upstream of L7 | 12.5 | 96.5 | 3938 | 3571 | 3885 | 3601 |
| 11/26/24 | 1 | 16.5" upstream of L7 | 16.5 | 100.5 | 3452 | 3079 | 3411 | 3119 |
| 11/26/24 | 4 | 21" upstream of L7 | 21 | 105 | 2891 | 2580 | 2860 | 2605 |
| 11/26/24 | 5 | 28.5" upstream of L7 | 28.5 | 112.5 | 1845 | 1609 | 1818 | 1621 |
| 11/26/24 | 6 | 34.5" upstream of L7 | 34.5 | 118.5 | 1188 | 959 | 1170 | 953 |
| | 7 | 30mm downstream of M9 | 30 | 134.8 | 1014 | 554 | 999 | 578 |
| | 6 | 55mm downstream of M9 | 55 | 133.9 | 1002 | 557 | 991 | 578 |
| | 1 | 95mm downstream of M9 | 95 | 132.3 | 984.5 | 567 | 971 | 585 |
| | 2 | 125mm downstream of M9 | 125 | 131.1 | 983 | 576 | 968 | 590 |
| | 3 | 155mm downstream of M9 | 155 | 130.0 | 977 | 591 | 959 | 600 |
| | 4 | 170mm downstream of M9 | 170 | 129.4 | 972 | 594 | 954 | 602 |
| | 5 | 190mm downstream of M9 | 190 | 128.6 | 962 | 609 | 946 | 660 |

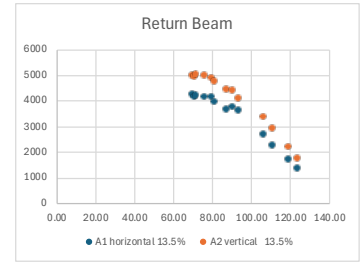


Note that the horizontal measurements seem wrong for this dataset between L6 and M9, unsure why, trust the vertical measurements

RETURN BEAM (with ITMY misaligned)

Beam Widths

| Order | Distance from | Distance | Beam Widths | | | | | |
|----------|---------------|-------------------------------|-------------|-------------|------|-------------|------|------|
| | | | A1 | A2 vertical | A1 | A2 vertical | | |
| 11/19/24 | 1 | 25mm downstream of hws mirror | 115 | 70.03 | 4225 | 4975 | 4440 | 5140 |
| 11/19/24 | 3 | 55mm downstream of hws mirror | 145 | 71.21 | 4135 | 4930 | 4355 | 5105 |
| 11/19/24 | 2 | 65mm downstream of hws mirror | 155 | 71.60 | 4185 | 5000 | 4360 | 5130 |
| 11/19/24 | 4 | 0mm downstream of hws lens | 280 | 76.52 | 4125 | 4980 | 4305 | 5120 |
| 11/19/24 | 5 | 80mm downstream of hws lens | 360 | 79.67 | 4140 | 4895 | 4370 | 5085 |
| 11/19/24 | 6 | 120mm downstream of hws lens | 400 | 81.25 | 3940 | 4750 | 4160 | 4955 |
| 11/19/24 | 7 | 270mm downstream of hws lens | 550 | 87.15 | 3650 | 4455 | 3920 | 4705 |
| 11/19/24 | 8 | 360mm downstream of hws lens | 640 | 90.70 | 3745 | 4369 | 3955 | 4575 |
| 11/19/24 | 9 | 435mm downstream of hws lens | 715 | 93.65 | 3590 | 4070 | 3805 | 4345 |
| 11/26/24 | 1 | 3" downstream of M3 | 3 | 106.25 | 2673 | 3345 | 2939 | 3707 |
| 11/26/24 | 2 | 8" downstream of M3 | 8 | 111.25 | 2235 | 2902 | 2502 | 3198 |
| 11/26/24 | 3 | 16" downstream of M3 | 16 | 119.25 | 1704 | 2180 | 1892 | 2402 |
| 11/26/24 | 4 | 21" downstream of M3 | 21 | 124.25 | 1343 | 1741 | 1503 | 1878 |



| Distances in ALS path | Inches between |
|--------------------------------|----------------|
| Edge of table to VP (alog#760) | 24.5 |
| M16 to Edge of table | 3 |
| M13 to M16 (guestimate) | 2 |
| M12 to M13 | 24 |
| M12 (LPM) to M11 | 12 |
| M11 to M10 | 12.5 |
| M10 to L7 | 6 |
| L7 to L6 | 38 |
| L6 to M9 | 14 |
| M9 to M8 | 7 |
| M8 to M7 | 3.5 |
| M7 to L5 | 3.5 |
| L5 to EOM Output | 17 |

Distance between VP and ALS-L7: 84
 Distance between VP and ALS-M11: 65.5
 Distance between LPM and M9: 136

| Distances in HWS path | Inches between |
|--------------------------------|----------------|
| Edge of table to VP (alog#760) | 24.5 |
| M16 to Edge of table | 3 |
| M13 to M16 (guestimate) | 2 |
| M12 to M13 | 24 |
| M12 (LPM) to M11 | 12 |
| ALS-M11 to M1A | 3.25 |
| M1A to L1 | 7.25 |
| L1 to L2 | 23.5 |
| L2 to M2 | 1.25 |
| M2 to M3 | 2.5 |
| M3 to M4 | 26.5 |
| M4 to M5 | 2.5 |
| M5 to L3 | 9.75 |
| L3 to source | 35 |

Distance between VP and HWS-M3: 103.25
 Distance between VP and ALS-M11: 65.5

| Lens | Label | Focal Length (mm) |
|--------|-----------------------|-------------------|
| ALS-L5 | AR532nm ROC 150mm | 300 |
| ALS-L6 | PLCC-25.4-103.0-C-532 | -200 |
| ALS-L7 | AR532nm ROC 500mm | 1000 |