HAM3 Gouy Telescope Setup
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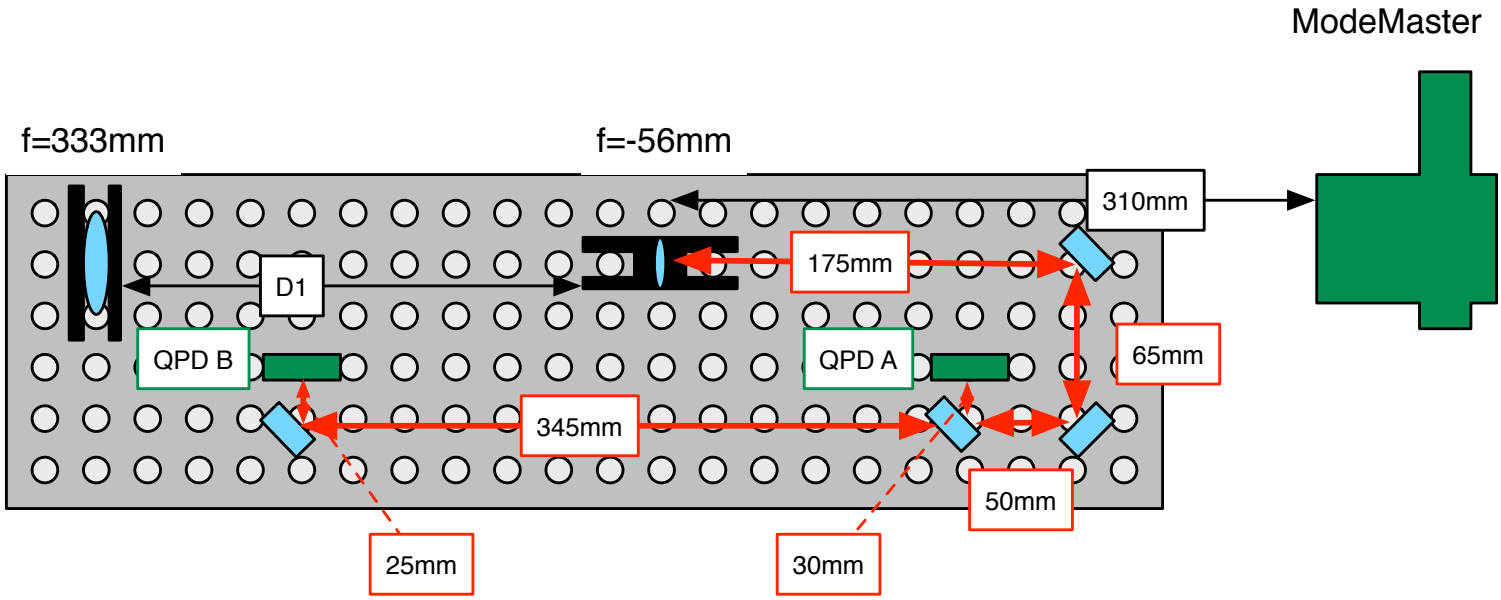


The input beam, measured with no telescope, has a 975 micron waist located 14.0 meters after the f=333mm lens

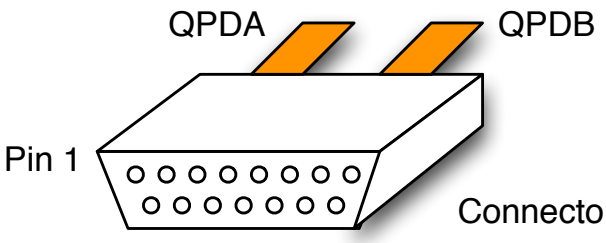
The telescope output was measured for a variety of distances, D1, defined as the distance from the rightmost edge of the f=333mm lens mounting base to the leftmost edge of the f=-56mm mounting base, oriented as shown above. Thus, there is an offset of order 1.5" between the D1 distance and the actual distance between the lens positions. The length measurements are +/- 5mm. The distance was scanned and the waist measured to be:

D1 [mm]	2w0 [mm]	z0 [m]
225.5	0.69	0.49
227.0	0.51	0.27
228.0	0.49	0.20
229.0	0.59	0.18
227.5	0.49	0.24

The final position was:
d1=228.0 mm, 2w0 = 0.49 mm, z0 = 0.193 m

These values are for the external beam as referenced to the front bevel of the mode master. The beam splitter was measured to have 4.5 mW incident on the BS, and 2.2 mW transmitted. For all measurements, the M^2 was 1.05 or less.

With these settings, the telescope output waist is 503mm after the f=-56mm lens, 183mm after QPDA, and 157mm before QPDB. This sets the Gouy spacing from the waist to 46 degrees for QPDA and 41.5 degrees for QPDB. The Gouy phase difference is 87 deg.



Connector configuration