

SPOT RADIUS VALUES IN WHICH 80 % OF ENCIRCLED ENERGY IS ENCLOSED FOR THE VST OPTICAL SOLUTION WITHOUT ADC

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**1. Introduction**

In this document a study of the spot radius values in which 80% of encircled energy is enclosed, for the VST optical solution without ADC corrector for mirrors alone is reported. The radius values are calculated from U to I bands.

**2. Spot diagrams and encircled energy for M1 and M2 alone**

Spot diagrams on the image plane corresponding to the mirrors alone, without corrector camera and ADC are reported in Figure 2-1. In Table 2-1 the radius values in which 80 % encircled energy is enclosed, are shown. In Table 2-2 the optical data for the two mirrors and their combination are reported.

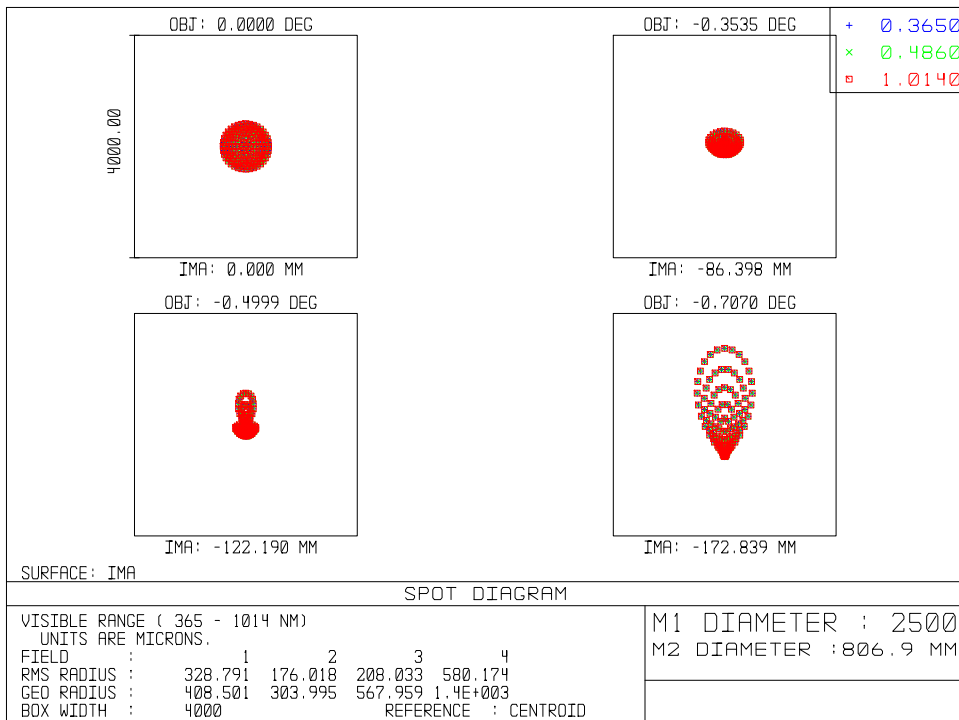


Figure 2-1 Spot diagram on the image plane for the two mirrors alone

Field of view angular radius (deg)	Radius in which 80% of EE is enclosed from U to I bands
0	0.76 mm
0.3535	0.44 mm
0.4999	0.4 mm
0.707	1.16 mm

Table 2-1 Radius in which 80% Encircled Energy is enclosed, from U to I bands for the mirrors alone at the different fields of view

VST optical data for the mirrors alone	
<b>Primary mirror M1</b>	
Diameter	2500 mm
Ray of curvature	-8333.7 mm
Conic constant	-1.120912
<b>Secondary mirror M2</b>	
Diameter	806.87 mm
Ray of curvature	-3437.2 mm
Conic constant	-4.623826
Distance between M1 and M2	2958.3 mm
<b>M1 +M2</b>	
Back focal distance	1108.12 mm
Image diameter	346.78 mm

Table 2-2 VST optical parameters for the mirrors alone