EVL A Feed Cone

Current Status
Feed Circle Layout
Structural Design
Feed Mounting
Feed Heaters
Cost
Current Status

• Four built to date.
  – One mock-up.
  – Three installed. (Antennas 13, 14 & 16)
• Extrusions and Base Plates ordered for all.
• Panels Ordered for all.
Antenna 13 Feed Cone
Feed Circle

<table>
<thead>
<tr>
<th></th>
<th>Q</th>
<th>K</th>
<th>Ku</th>
<th>S</th>
<th>C</th>
<th>X</th>
<th>L</th>
<th>Ka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotation</td>
<td>4.5°</td>
<td>25.9°</td>
<td>47.6°</td>
<td>101.6°</td>
<td>165.2°</td>
<td>-156.3°</td>
<td>-84.1°</td>
<td>-16.9°</td>
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<td>Defocus</td>
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<td>0</td>
<td>0</td>
<td>42</td>
<td>10</td>
<td>8.5</td>
<td>56.5</td>
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<td>Decenter</td>
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<td>PC Radius</td>
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<td>38.4</td>
<td>38.4</td>
<td>45.213</td>
<td>39.819</td>
<td>40.032</td>
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<tr>
<td>PC Height</td>
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<td>66</td>
<td>66</td>
<td>18.486</td>
<td>56.101</td>
<td>54.616</td>
<td>10.365</td>
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</table>

EVL A Feed Circle Layout = 30dB Limit
Jim Ruff 3/6/02
Feed Circle ‘Rolled Out’

This drawing is a visualization aid for the EVLA Feed Layout. The cone formed by the phase center aperture and the subreflector vertex has been "rolled out" to show feed positions relative to each other. The observer is looking "down" from the antenna axis. The red vertice is the elevation axis. The red arc is the cosecaph focus. K Band is shown twice.
Feed Cone Structure
Feed Cone Being Installed in A13
K-Band Feed Mount
C, X, and Ku Similar
Ka-Band Feed Mount
Q-Band Similar
A14 Feed Cone and A13 Feed Mounts
Feed Heaters
Feed Cone Cost

Actual Production Feed Cone Costs.
(Not included: Feed mounts, Feed Cone Floor, Skirt, ‘Combo Strips’, Feed Heaters, etc.)

$5550 Laminated Panels
$275 Extrusions
$1050 Base Plates
$1125 Consumables
$8000 Total

Assembly & Installation labor ~ 4 man-months