

Let calculate added edge taper for upper and lower rim of Gibertini reflector. The added edge taper (*AET*) for upper rim is the same as *AET* for the basic paraboloid, from which the offset reflector is excluded. Basic paraboloid has dimensions

$$D_b = 2(H + D/2) = 1500 \text{ mm}, f = 502.5 \text{ mm}, f/D_b = 0.335 \text{ See Example 3.}$$

From nomograph 4, we can read $AET_{D_b} = 3.845 \text{ dB} = 2.4238 \text{ (ratio)}$

AET for lower rim is derived from reflector geometry shown in Fig. 3.1

$$D_{Lr} = 2\left(H - \frac{D}{2}\right) = 60 \text{ mm}, f = 502.5 \text{ mm}, f/D_{Lr} = 8.375$$

This value is not covered in nomograph, so we can calculate it using equation (4)

AET_{Lr} for lower rim is 7.74×10^{-3} after rounding = 0

So median *AET* for Gibertini reflector

$$AET = \frac{AET_{D_b} + AET_{Dr}}{2} = \frac{2.4238 + 0}{2} = 1.212 \text{ (ratio)} = 0.83 \text{ dB}$$

Let compare these calculated parameters with subsidiary prime-focus reflector.

Subtended angle for both reflectors $SA = 70 \text{ deg}$, Gibertini mean $AET = 0.83$, subsidiary prime-focus reflector has $AET = 0.85 \text{ dB}$, so almost the same value.

We can see, that without any calculation, just using nomograph, properly designed feed for subsidiary prime-focus reflector will work well for offset dish with the same *SA*.

If we have an access to an EM software, we can perform final adjustment