I am trying to understanding Mike’s and Stuart’s result that we should not test 15 dB below mean normal in the HFA. I have been too hanged up on the dB that I have never fully tried to understand what it means. Gardiner et al claimed that we lose nothing if we censor values below 10 dB and very little if the floor is brought up to 15 dB or to 20 dB. Wall et al claimed that we lose little to nothing if the floor is 20 dB. **But what does this mean in terms of maximum stimulus luminance to be used?**

Both papers are based on measurements with HFA, which has the following parameters [1]:

* Maximum luminance: *L*max = 10000 / 𝛑 cd m-2 = 3183 cd m-2 ,
* Background luminance: *L*B = 10 cd m-2 , and
* Step size is 0.025 cd m-2 .

Since sensitivity, say, *d*, in dB, is defined for a stimulus luminance *L* as

where log is in base 10 (see eq. 3 in Appendix in [1]), we can express stimulus luminance as a function of the sensitivity *d* for the HFA, thus

\*\*\*In case you are wondering, yes, I have checked this equation with Excel and it is correct

From this equation, it is easy see that, **for a background luminance of 10 cd m-2**, flooring at 10 dB, 15 dB, or 20 dB correspond respectively **to capping at 326 cd m-2, 110 cd m-2, or 42 cd m-2**. From these estimates, it seems we have more than enough dynamic range if we do the **flooring** at (HFA dB scale) of **15 dB or 20 dB**, even at a **background luminance of 10 cd m-2**. And about enough if we use the 10 dB flooring value.

[1] Sun et al. “Linearity Can Account for the Similarity Among Conventional, Frequency-Doubling, and Gabor-Based Perimetric Tests in the Glaucomatous Macula” Optometry and Vision Science 83(7), 2006.