$$E_{nBB} := 6 \cdot \left(35 \cdot \frac{nV}{\sqrt{Hz}} \right) \cdot \sqrt{1.57 \cdot 700Hz} \cdot 5 \cdot 1000 = 0.035V$$

$$e_{normal} := 45 \frac{nV}{\sqrt{Hz}} \cdot \sqrt{10Hz} = 142.302 \times 10^{-9} V$$

$$E_{n\_flicker} := 6 \cdot e_{normal} \cdot \ln\left(\frac{1.57 \cdot 700Hz}{0.1Hz} \right) \cdot 5 \cdot 1000 = 0.04V$$

$$E_{n\_total} := \sqrt{E_{nBB}^{2} + E_{n\_flicker}^{2}} = 0.053V$$ pp noise at output

Note:

6 – convert RMS to Peak-to-Peak

1.57 – Convert op-amp bandwidth to noise bandwidth

700Hz – Bandwidth for op-amp

5 x 1000 – total gain

35nV/rtHz – broadband noise spectral density

45nV/rt Hz – flick noise at 10Hz

En_total – total peak to peak noise at output of op-amp