FORMULA 4.261.15

$$\int_0^1 \ln^2 x \, \frac{x^{2n}\,dx}{\sqrt{1-x^2}} = \frac{(2n-1)!!\,\pi}{2(2n)!!} \left\{ \frac{\pi^2}{12} + \sum_{k=1}^{2n} \frac{(-1)^k}{k^2} + \left[\sum_{k=1}^{2n} \frac{(-1)^k}{k} + \ln 2 \right]^2 \right\}$$