FORMULA 4.267.30

$$\int_0^\infty \frac{(1-x^p)(1-x^q)x^{s-1}\,dx}{(1-x^{p+2q+2s})\,\ln x} \;=\; 2\int_0^1 \frac{(1-x^p)(1-x^q)x^{s-1}\,dx}{(1-x^{p+2q+2s})\,\ln x}$$

$$=\; 2\ln\left[\sin\left(\frac{\pi s}{p+q+2s}\right)\;\operatorname{cosec}\left(\frac{(p+s)\pi}{p+q+2s}\right)\right]$$