$$\int_0^{\alpha} \frac{\alpha\left\{\frac{2}{\pi\alpha}\tan\left(\frac{\pi\alpha}{2}\right)\right\}\left\{0.752+2.02\alpha+0.37\left(1-\sin\left(\frac{\pi\alpha}{2}\right)\right)^3\right\}^2}{\cos^2\left(\frac{\pi\alpha}{2}\right)} d\alpha$$

$$\int_0^{\alpha} \frac{\alpha\left\{\frac{2}{\pi\alpha}\tan\left(\frac{\pi\alpha}{2}\right)\right\}\left\{0.923+0.199\left(1-\sin\left(\frac{\pi\alpha}{2}\right)\right)^4\right\}^2}{\cos^2\left(\frac{\pi\alpha}{2}\right)} d\alpha$$

$$\int_0^{\alpha} \frac{\alpha\left(1.30-0.65\alpha+0.37\alpha^2+0.28\alpha^3\right)^2}{1-\alpha} d\alpha$$

$$\int_0^{\alpha} \frac{\pi\alpha^2}{\sin\left(\pi\alpha\right)} d\alpha$$