In[ ]:=

```
Clear["`*"]
EExt = 100;
cl = 299 792 458; (*Meter per second*)
ϵ0 = 8.8541878188 * 10^-12;
χ3 = 6419 * 10^-54;
L = 0.01;

λ1 = 0.8; (*micro meter*)
λ2 = λ1 / 2; (*micro meter*)
ω = 2 π (cl) / (λ1 * 10^(-6));
ω2 = ω * 2;

p0 = 1000; (*mbar*)
p = 1013; (*https://www.wolframalpha.com/input?i=pressure+atmosphere+bar*)
T0 = 273; (*Kelvin*)
B1 = 39 209.95 * 10^-8; (*um^2*)
B2 = 18 806.48 * 10^-8;
C1 = 1146.24 * 10^-6;
C2 = 13.476 * 10^-6;
n = Sqrt[1 + (p / p0) (T0 / T) (B1 λ^2 / (λ^2 - C1) + B2 λ^2 / (λ^2 - C2))];
nω = n /. {λ → λ1};
n2ω = n /. {λ → λ2};

Δk = 2 nω ω / cl - n2ω 2 ω / cl;
c = Sqrt[(9 / 2) (ω^2 / (ϵ0 cl^3 nω^2 n2ω))] × Abs[χ3];
Signal = c Abs[Integrate[EExt Exp[-I Δk z], {z, -0.5 L, 0.5 L}]]
(*Negeer hier die Rayleigh length, boeit dat?*)
Plot[Signal, {T, 273, 5000},
 AxesLabel → {"Temperature (K)", "Signal (Sqrt(I2ω/Iω^2))"}, PlotRange → Full]
```

Out[ ]=

$$2.23538\times10^{-44}\, e^{\mathrm{Re}\left[(0.-78539.8\, i)\sqrt{\frac{0.16064+T}{T}}-(0.+78539.8\, i)\sqrt{\frac{0.161231+T}{T}}\right]}\sqrt{\frac{1}{\left(1+\frac{0.16064}{T}\right)\sqrt{1+\frac{0.161231}{T}}}}\;\mathrm{Abs}\left[\frac{\left(1.\, e^{(0.+157080.\, i)\sqrt{\frac{0.16064+T}{T}}}-1.\, e^{(0.+157080.\, i)\sqrt{\frac{0.161231+T}{T}}}\right)}{T\left(1.\sqrt{\frac{0.16064+T}{T}}+1.\sqrt{\frac{0.161231+T}{T}}\right)}\right]$$

Out[ ]=