20180405 - note: These calculations assume that the sample is linearly scanned, which is not accurate

The number of pixels and the FOV are limited by the laser repetition rate, i.e., how many laser pulses can fit in a scanned line.

For a 80 MHz laser and 8 kHz scanner, there are 80 MHz/(2*8 kHz) = 5000 laser pulses.

```
μm = 10^-6;
μs = 10^-6;
ms = 10^-3;
ns = 10^-9;
mm = 10^-3;
kHz = 10^3;
Tline = 62.5 μs;(*Time per scanned line*)
Tlaser = 12.5 ns;(*Laser pulse repetition period*)
tFPGA = 6.25 ns;(*Clock of the FPGA*)
Δx = 0.5 μm;(*Sampling resolution*)
γ = 0.8;(*filling factor that accounts for the dead time at the turning points*)


(*The parameter m is a "dwell time factor"*)
tdwell[m_] := m * tFPGA (*Pixel dwell time*)
Npix[m_] := γ Tline / tdwell[m](*Number of acquired pixels*)
Npp[m_] := tdwell[m] / Tlaser(*Laser pulses per pixel*)
FFOV[m_] := Δx * Npix[m](*Full field of view at or greater than Nyquist*)
timePerTile[m_] := Tline * Npix[m](*Imaging time per
   tile. Note that the dead time at the turning points must be considered*)

header = {"m", "Npix", "tdwell [ns]", "Npp",
   "FFOV[μm] ≤", "Time per line [μs]", "Time per tile [ms]"};
TableForm[Prepend[Table[{m, Npix[m], tdwell[m] / ns, Npp[m], FFOV[m] / μm,
    Tline / μs, timePerTile[m] / ms}, {m, 10, 20}], header]]
```

m	Npix	tdwell [ns]	Npp	FFOV[μm] ≤	Time per line [μs]	Time per tile [
10	800.	62.5	5.	400.	62.5	50.
11	727.273	68.75	5.5	363.636	62.5	45.4545
12	666.667	75.	6.	333.333	62.5	41.6667
13	615.385	81.25	6.5	307.692	62.5	38.4615
14	571.429	87.5	7.	285.714	62.5	35.7143
15	533.333	93.75	7.5	266.667	62.5	33.3333
16	500.	100.	8.	250.	62.5	31.25
17	470.588	106.25	8.5	235.294	62.5	29.4118
18	444.444	112.5	9.	222.222	62.5	27.7778
19	421.053	118.75	9.5	210.526	62.5	26.3158
20	400.	125.	10.	200.	62.5	25.