



Benchmark Data for Nvidia



VISUALON OPTIMIZER

**Reduces Streaming Bitrates by up to
70%, Improves Video Quality Without
Increasing Bitrates**

Introducing VisualOn Optimizer



It's a patented AI-based Universal Content-Adaptive Encoding (UCAE) technology that:

- Compatible with all compression standards – H.264, HEVC, AV1, VP9
- Works seamlessly with any encoders – VOD, Live, or File-to-File
- Decreases bitrate without compromising visual integrity
- Enhances visual quality without escalating data rate
- Employs efficient single-pass encoding without significant additional computational load or latency
- Configurable to achieve desired balance between data rate and quality



Benchmark Setup

Uses the same test suite and encoding settings as in Jan Ozer's white paper on "Choosing a Per-Title Encoding Technology" (except the one 10-bit content because it's not supported by the encoder), available [here](#)

Compares FFmpeg / NVENC H.264 results with and without Optimizer

Detailed results can be found in the accompanying spreadsheet:

- First tab describes the benchmark setup details
- Second tab presents the results

Overall Results



	Average bitrate (kbps)	Average VMAF	Total utime (second)
FFmpeg NVENC	1,731.78	67.32	22,497
Optimizer NVENC	1,062.88	71,33	31,283
Delta	-38.43%	4.01	39.06%

Results for Animation Category



	Average bitrate (kbps)	Average VMAF	Total utime (second)
FFmpeg NVENC	1,729.86	67.00	1,745
Optimizer NVENC	1,163,86	70.84	2,387
Delta	-30.65%	3.84	36.78%

Results for Movie-ish Category



	Average bitrate (kbps)	Average VMAF	Total utime (second)
FFmpeg NVENC	1,731.22	68.33	9,450
Optimizer NVENC	1,133.20	72.89	12,901
Delta	-33.03%	4.77	36.52%

Results for Synthetic Category



	Average bitrate (kbps)	Average VMAF	Total utime (second)
FFmpeg NVENC	1,728.57	62.22	918
Optimizer NVENC	959.86	67.08	1594
Delta	-53.51%	4.86	73.64%

Results for Other Business Category



	Average bitrate (kbps)	Average VMAF	Total utime (second)
FFmpeg NVENC	1,731.36	70.83	6,150
Optimizer NVENC	648.57	74.91	8,714
Delta	-61.11%	4.08	41.71%

Results for Sports Category



	Average bitrate (kbps)	Average VMAF	Total utime (second)
FFmpeg NVENC	1,734.94	65.55	4,234
Optimizer NVENC	1,296.69	68.17	5,687
Delta	-24.91%	2.62	34.32%

Summary



Demonstrate drastically better results overall – dramatically lower bitrates and significantly higher VMAF at the same time!

Results are highly content dependent, even within the same category of contents



Thank You



For more information,
please visit www.visualon.com or
email sales@visualon.com