Supplemental Materials

A Single-scale datasets

Although PyNeRF is designed for scenarios that capture scene content at different distances, we also evaluate it on the original Synthetic-NeRF [19] dataset where the camera distance remains constant. In this scenario, PyNeRF performs similarly to existing SOTA, as shown in Table 6.

Table 6: **Single-scale results.** We evaluate PyNeRF on single-scale Blender [19]. PyNeRF performs comparably to existing state-of-the-art.

PSNR	Lego	Mic	Materials	Chair	Hotdog	Ficus	Drums	Ship	Mean
K-Planes [9]	35.38	33.27	29.57	33.88	36.19	30.81	25.62	30.16	31.86
TensoRF [6]	35.14	25.70	**33.69**	**37.03**	36.04	29.77	24.64	30.12	31.52
iNGP [20]	35.67	**36.85**	29.60	35.71	37.37	33.95	25.44	30.29	33.11
Nerfacto [28]	34.84	33.58	26.50	34.48	37.07	30.66	23.63	**30.95**	31.46
PyNeRF	**36.63**	36.39	29.92	35.76	**37.64**	**34.29**	**25.80**	30.64	**33.38**

B Additional results

We list results for each individual downsampling level in Table 7 and Table 8 to supplement those shown in Table 1 and Table 2.

Table 7: **Synthetic results.** We average results across Multiscale Blender [2] and Blender-A and list metrics for each downsampling level. All PyNeRF variants outperform their baselines by a wide margin.

	↑PSNR				↑SSIM				↓LPIPS				
	Full Res.	1/2 Res.	1/4 Res.	1/8 Res.	Full Res.	1/2 Res.	1/4 Res.	1/8 Res.	Full Res.	1/2 Res.	1/4 Res.	1/8 Res.	↓Avg Error
Plenoxels [25]	22.61	23.68	24.54	23.62	0.767	0.768	0.784	0.789	0.307	0.265	0.200	0.161	0.102
K-Planes [9]	25.14	27.03	30.26	30.75	0.807	0.840	0.896	0.925	0.225	0.163	0.085	0.053	0.046
TensoRF [6]	25.93	28.12	31.46	30.97	0.865	0.893	0.921	0.930	0.169	0.112	0.064	0.056	0.042
iNGP [20]	26.90	29.14	30.89	28.49	0.865	0.905	0.947	0.947	0.152	0.095	0.047	0.054	0.032
Nerfacto [28]	25.35	27.26	29.78	29.09	0.809	0.840	0.893	0.917	0.214	0.158	0.094	0.068	0.049
Mip-NeRF [2]	32.07	33.65	34.76	35.00	0.952	0.959	0.961	0.960	0.048	0.036	0.028	0.021	0.020
PyNeRF	**33.18**	**35.83**	**37.59**	**38.29**	**0.964**	**0.977**	**0.984**	**0.989**	0.030	**0.013**	**0.007**	**0.004**	**0.008**
PyNeRF-K-Planes	33.12	35.18	36.45	36.94	0.963	0.973	0.980	0.985	**0.028**	0.014	0.009	0.005	**0.008**
PyNeRF-TensoRF	32.94	35.34	36.92	37.46	0.959	0.974	0.982	0.987	0.033	0.014	0.008	0.005	**0.008**

Table 8: **Real-world results.** We average results across Boat [24] and Mip-NeRF 360 [3]. As in Table 7, all PyNeRF variants improve significantly upon their baselines.

	↑PSNR				↑SSIM				↓LPIPS				
	Full Res.	1/2 Res.	1/4 Res.	1/8 Res.	Full Res.	1/2 Res.	1/4 Res.	1/8 Res.	Full Res.	1/2 Res.	1/4 Res.	1/8 Res.	↓Avg Error
Plenoxels [25]	20.69	20.70	20.98	21.93	0.627	0.543	0.547	0.640	0.661	0.607	0.525	0.364	0.128
K-Planes [9]	20.53	20.55	20.84	21.85	0.618	0.525	0.512	0.602	0.655	0.587	0.488	0.328	0.128
TensoRF [6]	17.31	17.33	17.49	17.96	0.548	0.431	0.367	0.384	0.748	0.714	0.662	0.552	0.190
iNGP [20]	19.53	19.83	16.06	20.86	0.598	0.504	0.489	0.574	0.670	0.610	0.517	0.351	0.146
Nerfacto [28]	21.37	21.42	21.81	23.15	0.629	0.558	0.575	0.688	0.594	0.512	0.389	0.226	0.110
Mip-NeRF 360 w/ GLO [3]	21.73	21.72	22.13	23.65	**0.650**	**0.597**	**0.628**	**0.736**	**0.518**	**0.427**	**0.309**	**0.165**	0.100
Mip-NeRF 360 w/o GLO [3]	21.01	21.00	21.39	22.88	0.634	0.580	0.610	0.718	0.529	0.441	0.323	0.179	0.111
Exact-NeRF w/ GLO [14]	20.72	20.73	21.04	22.34	0.637	0.571	0.583	0.674	0.559	0.478	0.378	0.237	0.121
Exact-NeRF w/o GLO [14]	20.98	20.97	21.34	22.80	0.635	0.578	0.604	0.710	0.548	0.451	0.339	0.192	0.113
PyNeRF	**22.05**	**22.16**	**22.56**	**23.84**	0.645	0.591	0.620	0.725	0.535	0.441	0.316	0.184	**0.098**
PyNeRF-K-Planes	21.47	21.49	21.87	23.18	0.633	0.570	0.591	0.694	0.563	0.478	0.362	0.217	0.108
PyNeRF-TensoRF	20.82	20.89	21.25	22.48	0.594	0.521	0.528	0.630	0.648	0.558	0.438	0.284	0.122