1	MegaDepth							ScanNet								Planar						IMC PhotoTourism																										
Pipeline	Filtered	Precision	Recall	AUC <sup>F</sup> <sub>65</sub>	$AUC_{010}^F$	$\mathrm{AUC}^F_{0:20}$	$\mathrm{AUC}_{\angle}^F$	$AUC_{05}^{E}$	$AUC_{010}^E$	AUC <sup>E</sup>	AUC <sub>Z</sub>	Filtered	Precision	Recall	AUC <sup>F</sup> <sub>05</sub>	$AUC_{010}^F$	$AUC_{020}^F$	$\mathrm{AUC}_{\mathbb{Z}}^F$	$AUC_{05}^E$	AUCE	$_0$ AUC $_{02}^E$	auC.	Filtere	d Precis	sion Recall	AUC <sup>a</sup>	$_{5}$ AUC $_{010}^{H}$	$AUC_{015}^{H}$	$AUC_{\square}^{H}$	Filtered	l Precision	n Recall	AUC <sup>F</sup> <sub>65</sub>	$AUC_{010}^F$	$\mathrm{AUC}^F_{0:20}$	$\mathrm{AUC}_{\angle}^F$	$AUC_{05}^{E}$	$AUC_{010}^{E}$	$\mathrm{AUC}^E_{020}$	$\mathrm{AUC}_{\angle}^{\mathrm{E}}$	$AUC_{\alpha(5,\frac{1}{2})}^F$	$AUC_{0(10,1)}^{F}$	$_{1)}^{AUC_{6(20,2)}^{F}}$	n AUC <sup>F</sup>	$\mathrm{AUC}^{\mathrm{E}}_{\Theta(S,\frac{1}{2})}$	$AUC_{0(10,1)}^{E}$	$_{1)}$ AUC $_{0(20,2)}^{E}$	, AUC <sup>E</sup>
+MAGSAC <sub>†</sub> +MAGSAC <sub>↓</sub>	45.45	88.68 94.36 95.24	99.92 71.96 60.50	31.89 37.65 38.50	48.53 54.61 55.39	64.57 70.28 70.59	48.33 54.18 54.83	45.31 47.03 47.43	64.86	76.86 78.44 77.92	005.0FE	0.00 33.86 43.51	68.94 71.40 71.59		6.64 11.80 12.18	16.31 25.21 25.71		17.51 25.78 26.29	16.81 17.45 17.75	33.86 34.53 34.69	50.44 51.51 51.12	33.70 34.49 34.52	74.53	74.77 82.23 82.84	90.77 37.16 25.24	41.98 <b>45.18</b> 44.79	57.07 59.65 <b>89.83</b>	63.98 65.71 68.12	63.45 51.93 49.00	0.00 33.51 44.75	94.37 95.11	99.59 71.24 59.98	27.59 36.18 36.33	42.95 52.07 52.28		43.01 51.76 51.91		68.40 69.76 70.20	80.64 81.58 81.77	66.78 68.12 68.55			30.69 38.64 38.67	20.14 26.38 26.57	20.82 21.78 22.11	35.29 36.81 37.03	53.27 53.53	35.89 37.28 37.56
+MAGSAC <sub>†</sub> +MAGSAC <sub>‡</sub>	67.00	89.55 93.99 94.77	58.25 43.11 36.43	18.64 22.11 21.86	31.66 35.72 35.49				48.31 52.61 53.45	65.69 69.27 70.22	47.95 51.90 52.63	45.93 61.81 66.68	70.40 71.22 71.28	51.60 38.24 33.20	4.26 5.70 6.18		24.67 27.77 27.60	13.75 16.08 16.31	10.71 11.54 11.22	24.01 24.77 24.70	39.35 39.85 40.02	24.69 25.39 25.31	54.28 81.57 86.99		43.05 19.55 13.58	33.27 35.04 35.01		57.83 59.78 59.81	46.10 41.63 40.14	42.75 59.59 66.01	90.57 94.19 94.84	57.89 43.24 36.78			50.41 53.92 54.18				74.43	56.34 58.37 58.72	7.07 8.45 8.53		23.81 26.39 26.55	14.95 16.99 17.09	13.72 14.66 14.79	25.42 26.90 26.93	42.09	26.51 27.88 28.04
+MAGSAC <sub>↓</sub>	33.98 45.45	88.68 94.36 95.24	71.95 60.50	31.89 37.65 38.50	48.53 54.61 55.39	64.57 70.28 70.59	48.33 54.18 54.83	45.31 47.03 47.43	62.83 64.86 64.68	76.86 78.44 77.92	61.67 63.44 63.34	0.00 33.86 43.51	68.94 71.40 71.59		6.64 11.80 12.18	16.31 25.21 25.71	29.58 40.34 40.98	17.51 25.78 26.29	16.81 17.45 17.75	33.86 34.53 34.69	50.44 51.51 51.12	34.52	0.00 63.71 74.53	74.77 82.23 82.84	90.77 37.16 25.24	41.98 45.18 44.79	57.07 59.65 <b>59.83</b>	63.98 65.71 <b>66.12</b>	63.45 51.93 49.00	0.00 33.51 44.75	89.40 94.37 95.11	71.24 59.98	27.59 36.18 36.33	42.95 52.07 52.28		43.01 51.76 51.91	51.32 53.01 53.68	68.40 69.76 70.20	80.64 81.58 81.77	66.78 68.12 68.55	10.47 14.87 15.16	19.25 25.65 25.89	30.69 38.64 38.67	20.14 26.38 26.57	20.82 21.78 22.11	35.29 36.81 37.03		35.89 37.28 37.56
$+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$	17.52 44.41 54.02	85.07 89.75 90.57	83.18 60.53 50.91	21.37 26.45 27.23	34.66 40.86 41.12	49.46 55.68 56.17	35.16 41.00 41.50	35.77 37.60 40.04	53.81 55.45 57.88	68.75 70.34 72.07	52.77 54.46 56.66	32.10 52.82 59.37	61.08 62.21 62.39	64.01 46.48 39.87	6.06 7.36 8.15	14.81 17.28 18.13	26.29 29.54 30.41	15.72 18.06 18.89	13.23 13.34 13.42	26.50 26.83 27.17	40.11 40.60 40.84	26.61 26.92 27.14	75.86 91.30 98.00	13.28 14.91 14.94	5.86	4.26 4.52 4.60	6.14 6.62 6.31	7.46 8.16 7.56	8.48 6.29 5.60	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a
+MAGSAC <sub>†</sub> +MAGSAC <sub>↓</sub>	19.20 45.11 54.58	89.47 93.99 94.80	81.49 59.50 50.03	14.45 19.00 18.92	26.46 32.42 32.56	42.21 48.80 48.97	27.70 33.41 33.48	31.47 34.18 35.90	50.34 54.20 55.23	67.42 70.92 71.45	49.75 53.10 54.19	46.48 60.81 65.79	71.37 70.31 70.38	51.09 39.25 34.17	3.28 3.52 3.35	9.89 9.53	16.54 20.49 20.20	9.28 11.30 11.03	8.36 7.57 8.63	19.71 18.84 20.20	34.16 33.66 34.74	20.75 20.02 21.19	13.37 66.23 76.18	75.24 81.83 82.51	81.23 34.40 23.64	42.51 44.28 43.30	57.38 58.33 57.51	63.96 64.05 63.62	50.27 47.02	25.55 48.06 56.56	90.51 94.05 94.70	75.15 55.50 46.96	14.32 18.50 18.89	25.63 31.56 31.78	40.87 47.75 47.93	26.94 32.60 32.87	38.71 40.42 40.73	57.43 59.21 59.47	72.43 73.85 74.02	56.19 57.83 58.08	4.88 6.64 6.74	10.34 13.28 13.30	18.75 22.72 22.75	11.32 14.21 14.26	13.19 13.95 13.91	25.05 26.19 26.23	40.26 41.67 41.80	26.16 27.27 27.31
+MAGSAC <sub>↓</sub>	TOTAL		35.96 27.93 23.73	10.89 12.57 12.59	21.11 24.29 23.37	35.33 38.48 37.32	22.44 25.11 24.43	19.14 20.81 21.13	34.76 37.05 38.20	52.58 54.93 56.40	35.49 37.60 38.58	64.09 73.27 76.37	71.19 70.15 70.20	35.31 27.66 24.45	3.10 3.48 3.55	9.30 10.33 10.54	20.23 21.70 21.78	10.88 11.84 11.95	8.12 8.04 8.19	19.04 18.67 19.39	33.17 32.50 33.20	20.11 19.74 20.26	61.77 83.57 88.39	76.39 81.49 82.09	36.15 17.16 11.96	28.95 30.61 30.69	47.23 47.72 48.40	56.71	42.02 37.88 36.94	63.05 72.57 76.82	90.79 93.20 93.75	37.64 29.22 24.94	12.50 14.26 14.37	24.62 26.87 26.85	40.52 42.61 42.71	25.88 27.92 27.98	27.64 29.02 29.56	45.75 47.52 48.03	62.80 64.58 64.99	45.39 47.04 47.52	4.53 4.95 5.08	9.68 10.74 10.80	17.82 19.39 19.60	10.68 11.69 11.83	9.24 9.79 9.99	18.68 19.81 20.14	31.73 33.16 33.52	19.88 20.92 21.21
+MAGSAC <sub>†</sub> +MAGSAC <sub>↓</sub>		92.95 93.63	36.03 27.62 23.44	9.75 11.21 11.29	20.90 22.49 22.79	35.54 37.37 37.15	22.06 23.69 23.74	16.48 19.28 19.11	32.42 35.60 36.46	51.45 54.15 55.51	33.45 36.34 37.03	67.95 75.65 78.34	71.35 70.78 70.86	31.57 25.29 22.47	1.67 2.07 1.84	5.39 6.17 6.02	12.97 15.17 14.89	7.80 7.58	5.30 5.49 5.75	14.05 14.64 15.06	26.74 27.43 28.44	15.36 15.85 16.42	67.00 85.90 89.96		30.72 14.45 10.06	27.29 28.69 28.48	45.32 45.96 46.62	53.88 54.68 55.10	39.30 35.94 35.07	65.02 74.12 78.10	90.67 93.35 93.87	35.56 27.51 23.50	9.97 11.50 11.72	21.51 23.34 23.52	37.29 38.87 38.99	22.92 24.57 24.75	22.74 24.35 24.66	40.67 42.80 43.14	58.50 60.58 61.16	40.67 42.58 42.99	3.46 4.09 4.12	8.05 9.12 9.02	15.64 16.90 16.94	9.05 10.04 10.03	7.47 7.99 8.16	15.67 16.35 16.70	27.50 28.71 29.02	16.88 17.68 17.96
+MAGSAC <sub>↓</sub>	25.59		-	48.54 <b>51.16</b> <b>50.94</b>	66.25	78.16	62.64 65.19 65.12	50.70 50.48 50.65	67.68 67.53 68.19	80.22 80.04 80.54	66.20 66.02 66.46	29.05 38.07 41.49	72.34 72.90 73.02	68.78 62.31 58.80	10.12 12.52 12.87		36.13 39.85 40.33	22.54 25.89 26.31	16.71 16.43 16.91	32.70 32.72 33.18	48.64 48.71 49.19	32.69 32.62 33.09	46.14	80.58 82.59 83.11	72.84 61.40	43.62 43.39 44.14	58.80 58.50 59.22	65.44 65.07 65.41	59.95 57.54	24.98 27.90 30.06	95.84 96.47 96.63	82.67 80.19 77.98	39.74 44.45 44.90	60.06	78.12	54.65 50.02 50.36	56.96 56.91 56.95	72.37	83.04 83.09 83.02	70.79 70.81 70.78	17.60 20.82 20.84	28.78 <b>32.31</b> <b>32.54</b>	41.72 45.88 45.91	29.37 32.74 32.99	24.82 24.86 24.48	40.14 39.89 39.98	56.46 56.31 56.49	40.26 40.32
+MAGSAC <sub>↓</sub>	49.69 58.28	88.28 89.02	75.11 54.39 45.81	28.14 33.05 32.69	43.77 48.61 47.97	58.91 62.82 62.21	43.61 48.16 47.62	39.31 40.58 41.93	55.53 56.91 58.08	68.78 69.98 70.65	54.54 55.82 56.89		68.80 67.33 67.45	48.55 37.44 32.34	5.53 6.96 6.68	13.95 16.08 15.59	25.46 28.05 27.35	14.98 17.03 16.54	10.33 10.67 10.05	22.50 23.46 22.15	37.05 37.70 36.79	23.29 23.94 23.00	38.01 76.38 83.88	81.07 81.59	61.98 26.53 18.15	39.48 41.14 40.66	54.84 55.69 54.93	62.08 62.42 61.18	54.59 46.44 43.73	29.78 51.36 59.33	88.76 91.82 92.44	70.83 51.96 43.96	24.41 29.12 29.08	38.40 43.56 43.55	58.20	38.78 43.63 43.63	45.10	61.61	72.57 74.02 74.25	58.40 60.24 60.61	9.28 11.87 11.97	17.27 20.92 21.00	27.90 32.14 32.12	18.15 21.64 21.69	16.64 17.96 18.78	29.26 31.12 31.84		30.00 31.69 32.40
+MAGSAC <sub>↓</sub>	82.92	90.02 94.31 95.07	29.50 22.24 18.94	18.64 17.97 17.12	32.51 31.03 30.69	49.50 47.90 47.38	33.55 32.30 31.73	17.64 20.78 22.14	33.93 37.94 40.11	52.47 56.79 58.64	34.68 38.50 40.30	62.08 72.38 75.29	71.06 72.00 71.97	34.26 26.74 23.64	4.42 4.68 4.66	11.71 12.28 12.41	22.91 23.82 23.77	13.61 13.61	7.32 6.85 7.45	17.54 17.51 17.84	30.75 30.57 31.01	18.54 18.31 18.77	84.72 88.47	81.98	28.04 13.03 8.93	30.84 32.46 32.74	47.23 48.12 48.69	55.08 55.55 56.19	40.29 37.29 36.64	69.75 77.93 81.15	90.97 94.10 94.68	30.59 23.49 20.27	16.46 17.37 17.32	29.52 30.14 30.12	45.24 45.19 45.30	30.41 30.90 30.92	25.08 26.74 27.50	41.97 43.95 45.16	58.82 60.98 62.10	41.96 43.89 44.92	5.75 6.10 6.11	11.99 12.39 12.29	20.99 21.24 21.07	12.91 13.24 13.16	7.96 8.85 9.10	16.39 17.52 18.18	28.40 29.85 30.85	17.58 18.74 19.38
+MAGSAC <sub>↓</sub>	16.76 43.53 53.25	93.89 94.70	83.97 61.29 51.54	14.31 19.93 20.12	26.19 33.24 33.55	41.78 49.62 49.63	27.43 34.26 34.43	32.18 35.42 35.79	51.59 54.44 55.33	68.59 70.67 71.11	50.79 53.51 54.08	41.91 57.43 63.07	71.05 70.06 70.13	55.77 42.81 37.09	3.50 4.94 4.27	9.03 12.21 11.59	18.47 23.40 23.13	10.33 13.52 13.00	9.65 9.69 9.41	21.65 21.95 22.00	35.98 36.23 37.12	22.43 22.62 22.84	12.10 65.96 76.23	75.30 81.51 82.15	82.95 34.70 23.58	43.53 44.69 <b>45.00</b>	57.90 58.31 58.47	64.50 64.21 64.19	62.22 50.48 47.81	21.88 45.62 54.56	90.58 94.08 94.74	78.93 58.17 49.20	15.39 19.52 19.45	27.09 32.65 32.79	42.32 48.81 48.95	28.26 33.66 33.73	39.35 41.06 41.42	57.99 59.61 59.91	72.76 74.07 74.39	56.70 58.25 58.57	5.15 7.03 7.09	10.98 13.80 13.79	19.61 23.32 23.33	11.91 14.72 14.74	13.70 14.30 14.25	25.67 26.55 26.66	40.78 41.91 42.31	26.72 27.58 27.74
+MAGSAC <sub>†</sub> +MAGSAC <sub>↓</sub>	93.02	90.66 91.54 91.84	10.17 8.43 7.48	3.82 3.57 3.55	8.96 8.17 8.39	18.37 17.52 17.44	10.38 9.75 9.79	6.39 6.28 6.42	14.68 15.57 15.44	29.72 30.61 31.61	16.93 17.49 17.82	88.31 91.78 92.39	70.07 62.88 62.91	10.96 8.21 7.71	0.99 0.71 0.84	3.11 2.73 2.82	7.65 7.91	4.19 3.70 3.85	1.75 2.01 2.36	6.12 6.07 6.47	13.95 13.82 13.96	7.28 7.30 7.59	94.45 95.72	75.27 79.91 80.54	9.23 4.75 3.41	17.10 17.31 17.34	33.35 33.53 33.68	42.24 43.24 42.89	25.48 24.71 24.33	89.90 91.90 92.82	91.05 91.72 92.00	10.30 8.50 7.58	4.18 3.95 4.03	10.20 9.93 9.82	20.86 20.42 20.33	11.75 11.43 11.39	10.32 10.61 11.08	21.97 22.65 23.27	37.85 38.89 39.54	23.38 24.05 24.63	1.54 1.41 1.47	3.97 3.84 3.84	8.62 8.38 8.36	4.71 4.55 4.56	3.21 3.31 3.63	7.79 8.04 8.51	15.58 16.16 16.55	8.86 9.17 9.56
	45.80	88.79 94.32 95.22	99.29 71.63 60.16	31.71 37.41 37.76	48.32 54.22 54.60	64.51 70.17 69.86	48.18 53.93 54.08	45.95 47.54 47.27	63.18 64.87 64.76	76.83 78.11 78.15	61.99 63.51 63.39	10.20 38.02 47.39	68.85 71.09 71.23	89.20 62.97 53.41	7.37 11.58 11.98	17.44 24.68 25.10	31.03 39.66 40.25	18.61 25.31 25.77	17.07 17.00 16.77	33.48 33.89 33.39	49.69 50.31 49.54	33.41 33.73 33.23	7.89 66.70 77.37	74.92 82.28 82.87	90.37 37.23 25.24	42.62 44.56 44.64	58.06 59.30 59.66	65.41 65.61 66.09	64.11 51.67 48.91	1.66 34.13 45.34	89.53 94.30 95.02	98.46 70.72 59.47	28.41 35.52 35.72	43.90 51.37 51.46	59.47 66.33 66.39	43.93 51.07 51.19	51.33 53.08 53.44	68.24 69.66 69.89	80.46 81.36 81.49	66.67 68.03 68.27	10.82 14.60 14.75	19.88 25.22 25.40	31.59 37.99 38.03	20.76 25.94 26.06	20.79 21.86 22.18	35.37 36.92 36.96	53.30	35.94 37.32 37.48
$+MAGSAC_{\downarrow}$		88.72 94.35 95.25	99.74 71.87 60.39	31.71 37.31 37.90	48.49 54.36 54.98	64.65 70.11 70.32	48.28 53.93 54.40	45.35 47.18 47.05	62.75 64.70 64.54	76.71 78.25 77.98	61.60 63.38 63.19	6.48 36.02 45.52	68.77 71.27 71.44	91.71 64.18 54.57	7.04 11.52 11.93	17.13 24.89 25.11	30.62 40.01 40.37	18.27 25.48 25.80	17.69 17.82	33.97 34.63 34.79	50.28 50.99 51.01	33.78 34.44 34.54	6.98 66.55 77.27	74.83 82.24 82.82	90.77 37.21 25.26	42.61 44.96 44.63	58.31 59.54 <b>59.75</b>	65.36 65.73 66.31	64.26 51.86 48.99	0.98 33.87 45.09	89.46 94.34 95.07	70.93 59.68	28.05 36.02 36.07	43.44 51.82 51.93		43.51 51.50 51.60	51.25 53.24 53.69	68.32 69.77 70.09	80.54 81.51 81.64	66.70 68.17 68.47	10.66 14.79 14.97	19.60 25.55 25.67	31.16 38.50 38.45	20.48 26.28 26.36	20.63 22.09 22.16	35.19 37.08 37.15	53.52	35.78 37.56 37.64
$+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$		85.90 96.32 96.76	99.36 84.96 80.53					52.53 82.28 51.62	69.76 69.22	81.98 81.96 81.61	69.08 69.00 67.48	6.48 38.78 44.78	65.80 71.35 71.48	89.20 61.95 55.94	5.06 14.82 14.45	13.11 28.17 28.44	42.94		18.26 18.85 19.45	35.45 35.70 36.32	51.98 51.95 52.50	35.21 35.50 36.00	6.98 38.61 48.20	76.09 82.87 83.14	73.00 61.91	40.15 43.90 44.47	55.95 58.93 58.45	63.54 65.49 64.94	60.33 57.44	0.98 33.03 37.83	83.38 95.46 95.89	93.29 73.71 68.90	15.86 41.10 <b>41.81</b>		43.23 69.59 <b>70.30</b>		57.01	72.40 <b>72.42</b>	83.02 83.03	71.02 70.78 70.83	5.41 18.36 18.72	10.91 29.56 29.90	19.54 42.25 <b>42.81</b>		24.35 24.25 24.45	39.91 39.66 <b>39.99</b>	56.87 56.38 56.54	40.31 40.10 <b>40.33</b>
$+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$	0.90 25.98 30.42	85.68 96.22 96.62	98.49 84.15 79.65	20.33 47.18 48.03	34.39 62.52 63.24	75.19 75.60	35.29 61.63 62.29	49.81 50.46 50.80	67.27 67.95 68.35	80.12 80.86 81.18	65.73 66.42 66.78	10.20 40.63 46.41	65.79 71.10 71.28	86.66 60.91 55.08	5.02 14.01 13.70	27.82	<b>42.15</b> 42.11	14.22 27.98 27.88	17.62 18.53 18.58	34.74 35.08 35.44	51.55 51.18 51.53	34.64 34.93 35.18	7.89 38.77 47.89	75.81 82.77 83.08	72.88 62.19	41.10 44.80 44.31	56.23 58.60 59.32	63.26 64.59 65.67	64.35 60.22 57.87	1.66 33.41 38.13	83.16 95.30 95.72	92.48 73.25 68.52	15.38 40.32 41.05	55.03	68.33 68.97	55.27	56.76 56.65		83.27 82.80 82.76	<b>71.12</b> 70.56 70.49	5.35 18.13 18.58		41.73	11.80 29.65 30.21	24.27 24.46	40.08 39.81 39.87	56.44 56.30	40.48 40.17 40.21
+MCC $+$ MAGSAC $_{\downarrow}$ $+$ MAGSAC $_{\downarrow}$	38.44	92.71	66.61	17.80 38.49 38.72	52.24	65.04	32.37 51.92 52.29	42.28 42.64 43.31	58.29 59.52 60.10	71.65 73.46 73.79	58.54	0.00 40.60 47.19	64.93 71.18 71.31	91.23 59.11 52.58	4.70 12.71 12.60	26.06	40.75	13.49 26.51 26.22	17.12 17.32 18.08	34.54 34.22 34.15	51.04 50.79 50.33		0.00 67.28 74.87	60.92 81.69 82.41	33.69	36.73 40.57 40.71	55.82	60.51 62.58 63.17	55.68 48.16 46.35	0.00 45.90 52.25	76.48 92.32 92.87	84.44 57.01 50.79	13.55 30.89 31.27	44.77	58.81	44.82		63.28	75.54	61.39 62.16 62.07	4.51 13.10 13.14	9.58 22.28 22.37		10.55 22.87 23.00	18.71 19.38 19.57		47.30 48.16 48.09	33.47