

v48 BC-Chamfer ablation: 128 held-out objects, matched 4-epoch budget

variant	Chamfer ↓	PSNR ↑	SSIM ↑	LPIPS ↓	ΔPSNR
baseline	1.54e-3	25.57	0.956	0.124	--
- PCA pose-norm	1.73e-3	24.90	0.954	0.133	-0.67
- geom attention	1.95e-3	24.37	0.949	0.140	-1.20
- hierarchy*	1.71e-3	25.39	0.953	0.126	-0.18

red = largest observed degradation; green = smallest observed degradation; * approximate 1x1 ablation