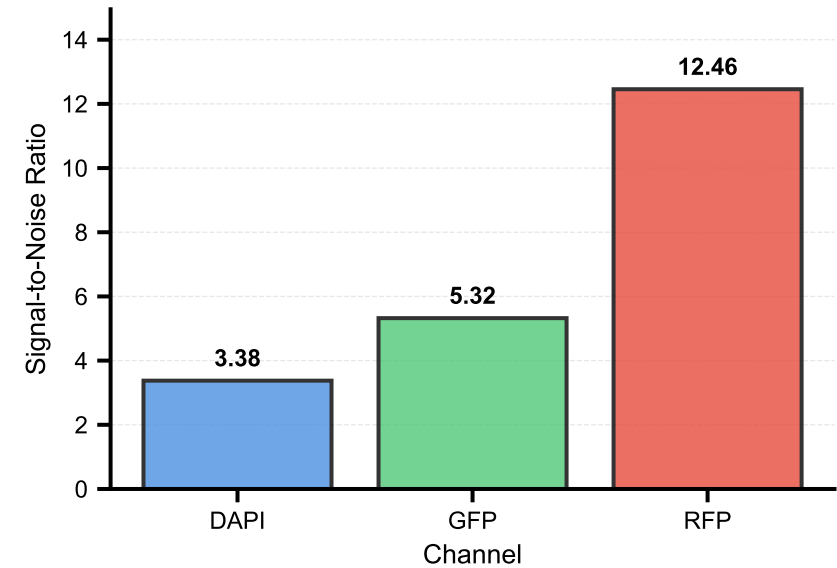
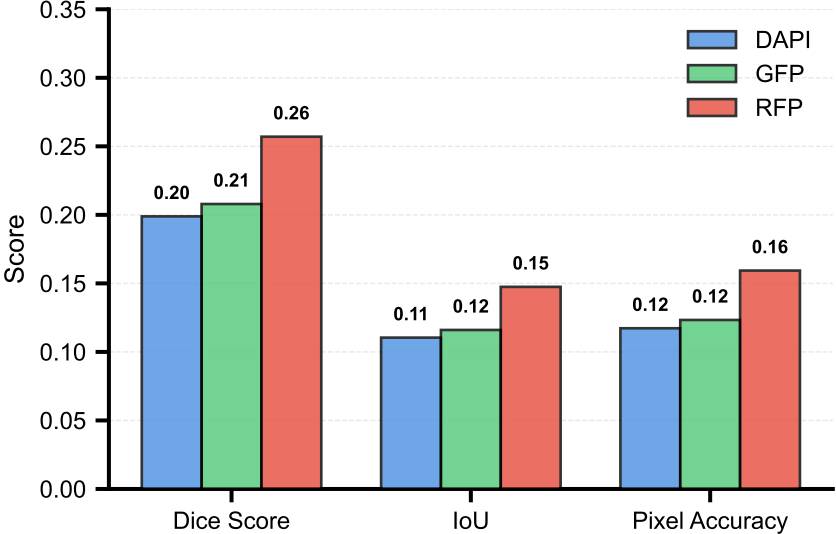


Multi-Channel Fluorescence Microscopy Analysis: Comprehensive Overview

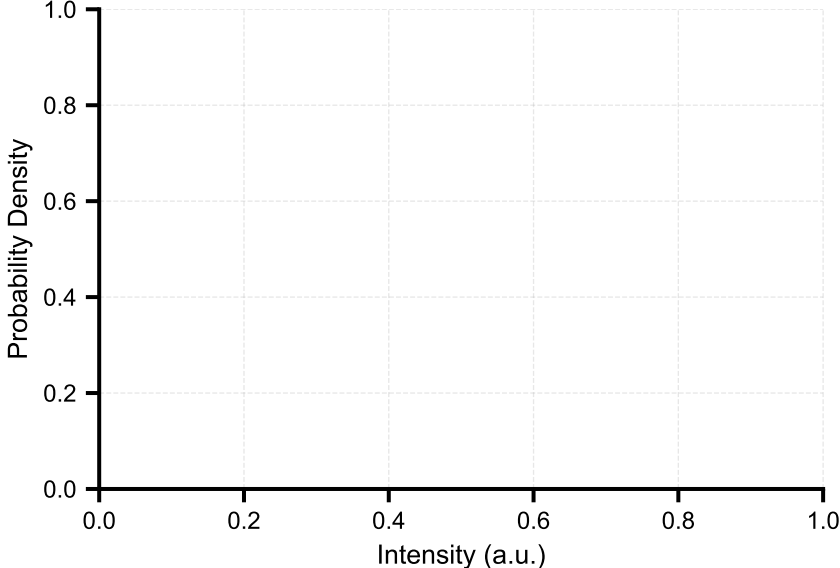
A. Signal-to-Noise Ratio Comparison



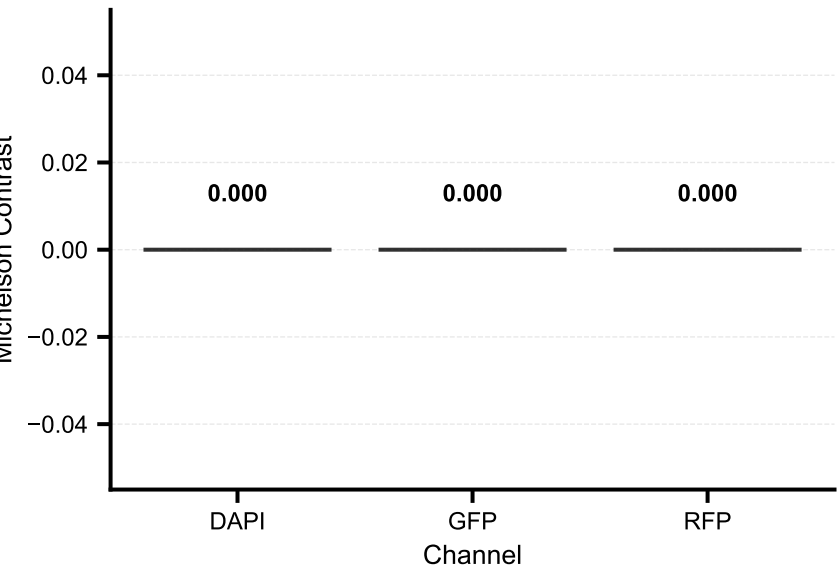
B. Segmentation Quality Metrics



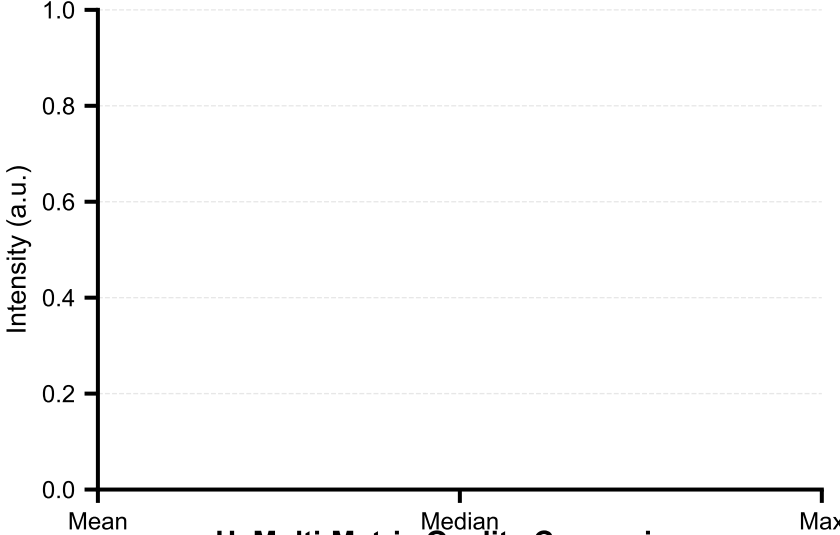
C. Intensity Distribution Comparison



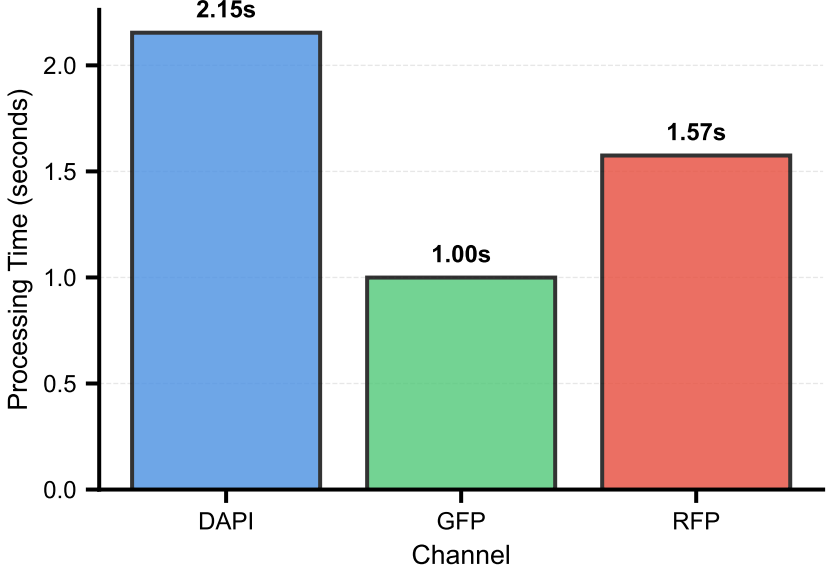
D. Contrast Comparison



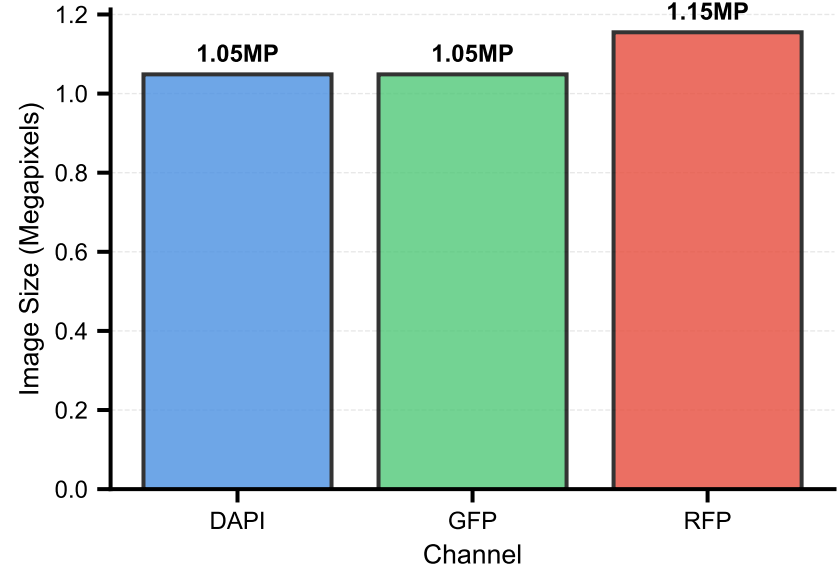
E. Intensity Statistics Comparison



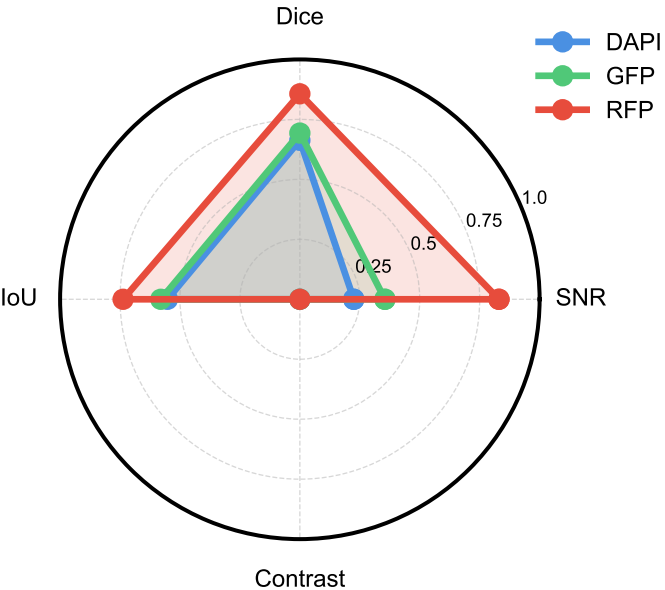
F. Processing Time Comparison



G. Image Resolution Comparison



H. Multi-Metric Quality Comparison



I. Summary Statistics

| Channel | Dimensions | SNR | Dice | Time |
|---------|------------|-------|-------|-------|
| DAPI | 1024×1024 | 3.38 | 0.199 | 2.15s |
| GFP | 1024×1024 | 5.32 | 0.208 | 1.00s |
| RFP | 1272×908 | 12.46 | 0.257 | 1.57s |