| Models                            | #Trainable<br>Params | NoCaps Zero-shot (validation set) |             |              |             |              |      |              |             | COCO Fine-tuned |              |
|-----------------------------------|----------------------|-----------------------------------|-------------|--------------|-------------|--------------|------|--------------|-------------|-----------------|--------------|
|                                   |                      | in-domain                         |             | near-domain  |             | out-domain   |      | overall      |             | Karpathy test   |              |
|                                   |                      | C                                 | S           | C            | S           | C            | S    | C            | S           | B@4             | С            |
| OSCAR (Li et al., 2020)           | 345M                 | -                                 | -           | -            | -           | -            | -    | 80.9         | 11.3        | 37.4            | 127.8        |
| VinVL (Zhang et al., 2021)        | 345M                 | 103.1                             | 14.2        | 96.1         | 13.8        | 88.3         | 12.1 | 95.5         | 13.5        | 38.2            | 129.3        |
| BLIP (Li et al., 2022)            | 446M                 | 114.9                             | 15.2        | 112.1        | 14.9        | 115.3        | 14.4 | 113.2        | 14.8        | 40.4            | 136.7        |
| OFA (Wang et al., 2022a)          | 930M                 | -                                 | -           | -            | -           | -            | -    | -            | -           | 43.9            | <u>145.3</u> |
| Flamingo (Alayrac et al., 2022)   | 10.6B                | -                                 | -           | -            | -           | -            | -    | -            | -           | -               | 138.1        |
| SimVLM (Wang et al., 2021b)       | $\sim$ 1.4B          | 113.7                             | -           | 110.9        | -           | 115.2        | -    | 112.2        | -           | 40.6            | 143.3        |
| BLIP-2 ViT-g OPT <sub>2.7B</sub>  | 1.1B                 | 123.0                             | 15.8        | 117.8        | <u>15.4</u> | 123.4        | 15.1 | 119.7        | <u>15.4</u> | 43.7            | 145.8        |
| BLIP-2 ViT-g OPT <sub>6.7B</sub>  | 1.1B                 | 123.7                             | <u>15.8</u> | <u>119.2</u> | 15.3        | <u>124.4</u> | 14.8 | <u>121.0</u> | 15.3        | 43.5            | 145.2        |
| BLIP-2 ViT-g FlanT5 <sub>XL</sub> | 1.1B                 | 123.7                             | 16.3        | 120.2        | 15.9        | 124.8        | 15.1 | 121.6        | 15.8        | 42.4            | 144.5        |