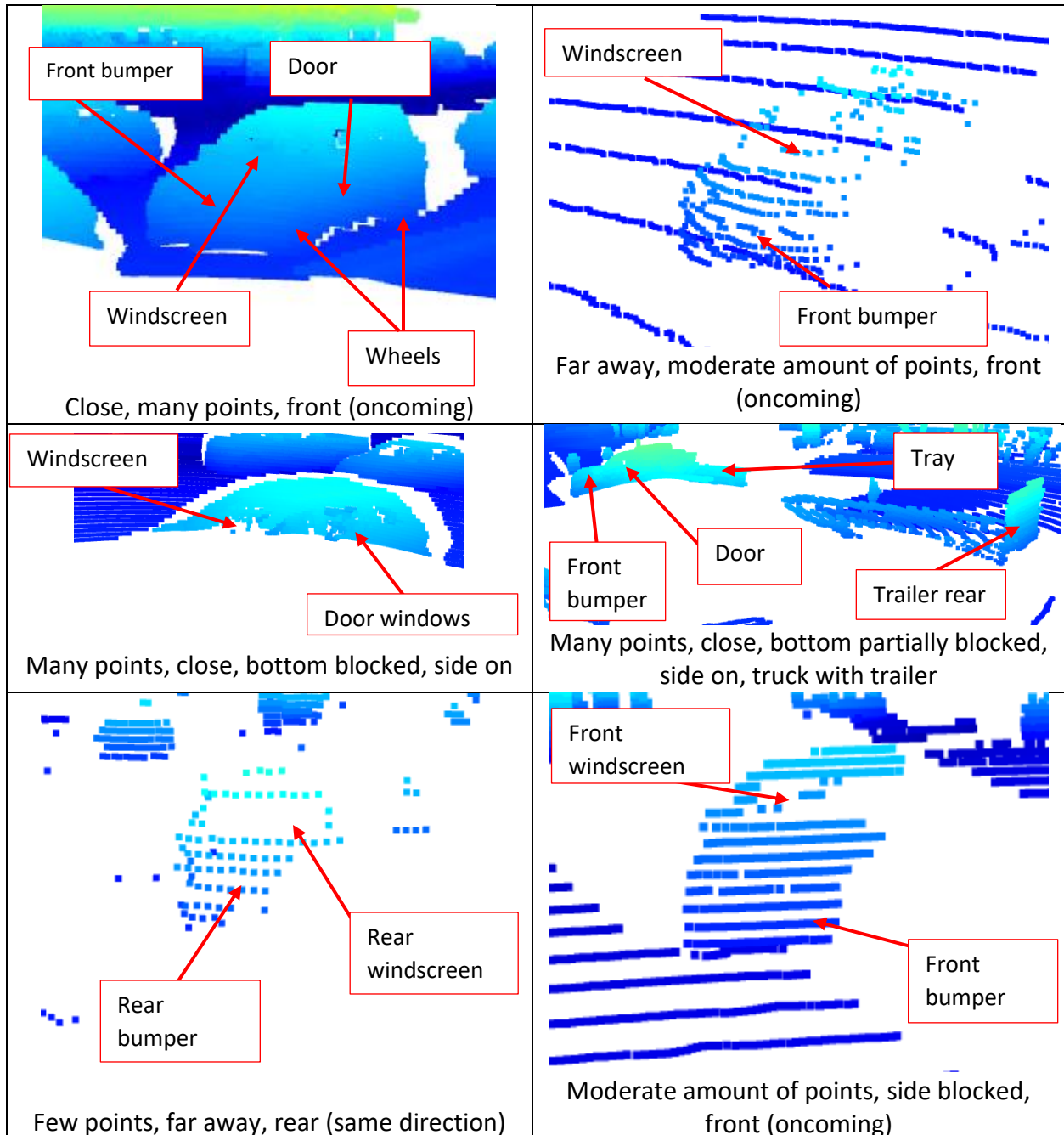
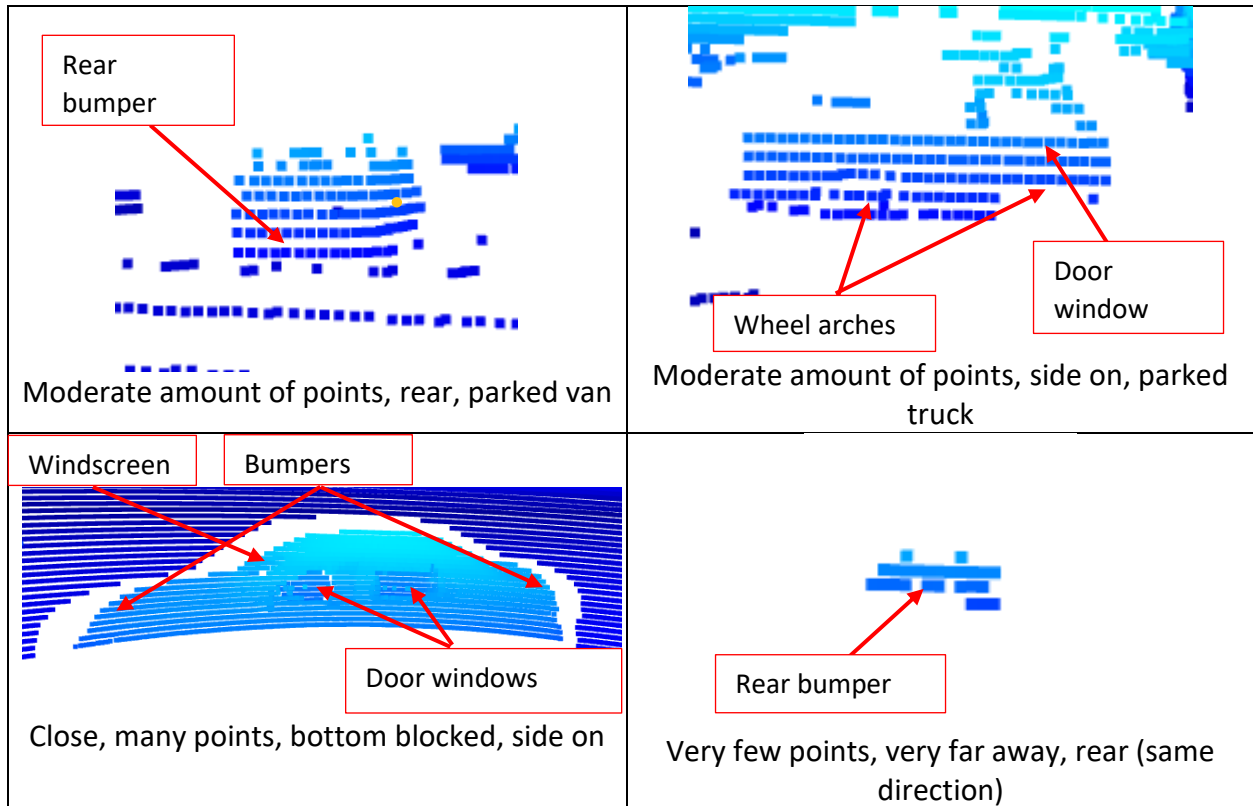


10 vehicles within the point-cloud with varying degrees of visibility:

Key features have been identified.





In general, the vertical surfaces on vehicles are very consistently visible in the point-cloud. This is to be expected, as these surfaces are orthogonal to the direction of the lidar beams, and thus provide a large area of reflection. In this dataset (and in general) most vehicles are travelling either towards or away from the sensor, making the front and rear faces the most commonly seen. On these faces the bumpers and windscreens are consistently seen and identified, the former thanks to its large and recognizable shape, and the latter thanks to the contrast between the transparent windscreen glass and adjacent reflective pillars.

These observations are supported by the range and intensity images below, where it can be observed that the majority of pixels representing any vehicle are in either the front or rear bumper areas, and that lidar travels straight through windscreens leaving a recognizable hole. From figures 2 & 3 it can be seen that reflective features such as license plates and lights really stand out in the intensity channel. When considering all channels available, these reflective features are the most clearly identifiable.



Figure 1: Range image from lidar sensor.



Figure 2: Intensity image from lidar sensor.



Figure 3: Intensity image from lidar sensor.

Stable and identifiable features:

- License plates
- Taillights and headlights
- Windscreens
- Bumpers