

C-3 Report on Intensity Values

The USGS Lidar Base Specification Version 1.3 states: "Intensity values are required for each multiple discrete return. The values recorded in the LAS files shall be normalized to 16 bit, as required by the LAS Specification version 1.4-R13 (ASPRS, 2011). It warrants re-emphasis that intensity normalization is strictly linear. Common image stretches (minimum-maximum, standard deviations, percent clip, histogram, and so forth) are expressly forbidden."

The purpose of this section is to report on the presence and quantities of lidar intensity in the LAS data.

[Data Source - Z:\MARS_OC\2900112_Lot_7\Generated Swath](#)

| File | Minimum | Maximum | Mean | Median | Mode |
|--------------|---------|---------|--------|--------|--------|
| CS_00001.las | 16 | 65,520 | 13,718 | 14,576 | 15,600 |
| CS_00002.las | 16 | 65,520 | 13,519 | 14,464 | 15,872 |
| CS_00004.las | 16 | 65,520 | 12,717 | 13,760 | 14,944 |
| CS_00005.las | 16 | 65,520 | 13,264 | 14,192 | 15,856 |
| CS_00006.las | 16 | 65,520 | 14,034 | 14,784 | 15,632 |
| CS_00008.las | 16 | 65,520 | 9,454 | 10,416 | 11,904 |
| CS_00009.las | 16 | 65,520 | 12,950 | 13,856 | 15,424 |
| CS_00010.las | 16 | 65,520 | 9,237 | 10,304 | 12,112 |
| CS_00011.las | 16 | 65,520 | 13,314 | 14,208 | 15,696 |
| CS_00012.las | 16 | 65,520 | 14,073 | 14,784 | 15,680 |
| CS_00013.las | 16 | 65,520 | 13,045 | 14,128 | 15,312 |
| CS_00014.las | 16 | 65,520 | 12,460 | 13,744 | 15,456 |
| CS_00015.las | 16 | 65,520 | 12,377 | 13,296 | 14,832 |
| CS_00016.las | 16 | 65,520 | 13,607 | 14,496 | 15,632 |
| CS_00017.las | 16 | 65,520 | 9,824 | 10,720 | 11,984 |
| CS_00018.las | 16 | 65,520 | 13,327 | 14,224 | 15,392 |
| CS_00019.las | 16 | 65,520 | 12,815 | 13,744 | 15,328 |
| CS_00020.las | 16 | 65,520 | 12,601 | 13,600 | 14,816 |
| CS_00021.las | 16 | 65,520 | 13,829 | 14,672 | 15,440 |
| CS_00022.las | 16 | 65,520 | 13,116 | 14,096 | 14,848 |
| CS_00024.las | 16 | 65,520 | 8,953 | 10,112 | 1,152 |
| CS_00025.las | 16 | 65,520 | 12,356 | 13,280 | 14,704 |
| CS_00026.las | 16 | 65,520 | 13,634 | 14,544 | 15,584 |
| CS_00027.las | 16 | 65,520 | 13,825 | 14,768 | 16,080 |
| CS_00028.las | 16 | 65,520 | 12,580 | 13,616 | 15,280 |
| CS_00030.las | 16 | 65,520 | 12,285 | 13,184 | 14,464 |
| CS_00031.las | 16 | 65,520 | 12,839 | 13,808 | 15,152 |

C-3 Report on Intensity Values - continued

| File | Minimum | Maximum | Mean | Median | Mode |
|--------------|---------|---------|--------|--------|--------|
| CS_00032.las | 16 | 65,520 | 12,238 | 13,280 | 14,944 |
| CS_00103.las | 16 | 65,520 | 10,202 | 10,704 | 11,344 |
| CS_00104.las | 16 | 65,520 | 10,072 | 10,576 | 11,520 |
| CS_00105.las | 16 | 65,520 | 10,058 | 10,576 | 11,552 |
| CS_00106.las | 16 | 65,520 | 9,907 | 10,480 | 11,344 |
| CS_00107.las | 16 | 65,520 | 9,474 | 10,144 | 11,344 |
| CS_00108.las | 16 | 65,520 | 9,741 | 10,352 | 11,296 |
| CS_00109.las | 16 | 65,520 | 9,666 | 10,352 | 11,392 |
| CS_00110.las | 16 | 65,520 | 9,581 | 10,336 | 11,504 |
| CS_00111.las | 16 | 65,520 | 9,413 | 10,160 | 11,344 |
| CS_00112.las | 16 | 65,520 | 9,408 | 10,160 | 11,472 |
| CS_00113.las | 16 | 65,520 | 9,428 | 10,144 | 11,536 |
| CS_00114.las | 16 | 65,520 | 9,538 | 10,288 | 11,504 |
| CS_00115.las | 16 | 65,520 | 9,615 | 10,352 | 11,584 |
| CS_00116.las | 16 | 65,520 | 9,635 | 10,384 | 11,584 |
| CS_00117.las | 16 | 65,520 | 9,511 | 10,240 | 11,296 |
| CS_00118.las | 16 | 65,520 | 7,691 | 8,224 | 8,880 |
| CS_00119.las | 16 | 65,520 | 7,889 | 8,384 | 8,864 |
| CS_00120.las | 16 | 65,520 | 7,882 | 8,400 | 8,944 |
| CS_00121.las | 16 | 65,520 | 7,928 | 8,432 | 9,168 |
| CS_00122.las | 16 | 65,520 | 7,820 | 8,352 | 9,168 |
| CS_00123.las | 16 | 65,520 | 8,173 | 8,736 | 9,472 |
| CS_00124.las | 16 | 65,520 | 8,043 | 8,624 | 9,408 |
| CS_00125.las | 16 | 65,520 | 8,291 | 8,800 | 9,360 |
| CS_00126.las | 16 | 65,520 | 8,219 | 8,736 | 9,360 |
| CS_00127.las | 16 | 65,520 | 8,221 | 8,736 | 9,280 |
| CS_00128.las | 16 | 65,520 | 10,162 | 10,800 | 11,584 |
| CS_00129.las | 16 | 65,520 | 10,060 | 10,688 | 11,520 |
| CS_00130.las | 16 | 65,520 | 9,987 | 10,640 | 11,520 |
| CS_00131.las | 16 | 65,520 | 9,884 | 10,544 | 11,616 |
| CS_00132.las | 16 | 65,520 | 10,090 | 10,848 | 12,128 |
| CS_00133.las | 16 | 65,520 | 10,151 | 10,816 | 11,952 |
| CS_00134.las | 16 | 65,520 | 10,162 | 10,896 | 12,144 |

C-3 Report on Intensity Values - continued

| File | Minimum | Maximum | Mean | Median | Mode |
|--------------|---------|---------|-------|--------|--------|
| CS_00135.las | 16 | 65,520 | 9,823 | 10,640 | 12,288 |
| CS_00136.las | 16 | 65,520 | 9,618 | 10,416 | 12,320 |
| CS_00137.las | 16 | 65,520 | 9,374 | 10,160 | 11,952 |
| CS_00138.las | 16 | 65,520 | 9,135 | 9,904 | 12,000 |
| CS_00139.las | 16 | 65,520 | 8,920 | 9,680 | 11,760 |
| CS_00140.las | 16 | 65,520 | 8,784 | 9,472 | 11,968 |
| CS_00141.las | 16 | 65,520 | 8,850 | 9,648 | 11,680 |
| CS_00142.las | 16 | 65,520 | 8,931 | 9,776 | 12,016 |
| CS_00143.las | 16 | 65,520 | 9,000 | 9,856 | 11,968 |
| CS_00144.las | 16 | 65,520 | 9,047 | 9,920 | 12,144 |
| CS_00145.las | 16 | 65,520 | 9,006 | 9,904 | 11,680 |
| CS_00146.las | 16 | 65,520 | 9,184 | 10,032 | 12,080 |
| CS_00147.las | 16 | 65,520 | 9,124 | 9,984 | 11,840 |
| CS_00148.las | 16 | 65,520 | 9,006 | 9,728 | 11,856 |
| CS_00149.las | 16 | 65,520 | 9,090 | 9,856 | 12,032 |
| CS_00150.las | 16 | 65,520 | 9,345 | 10,224 | 12,080 |
| CS_00151.las | 16 | 65,520 | 9,437 | 10,400 | 12,080 |
| CS_00152.las | 16 | 65,520 | 9,235 | 10,176 | 11,952 |
| CS_00153.las | 288 | 65,520 | 7,427 | 8,272 | 9,440 |
| CS_00154.las | 16 | 65,520 | 7,581 | 8,416 | 9,712 |
| CS_00155.las | 16 | 65,520 | 7,600 | 8,448 | 9,776 |
| CS_00156.las | 16 | 65,520 | 7,555 | 8,432 | 9,696 |
| CS_00157.las | 16 | 65,520 | 7,584 | 8,480 | 9,728 |
| CS_00158.las | 16 | 65,520 | 7,512 | 8,464 | 9,664 |
| CS_00159.las | 16 | 65,520 | 7,490 | 8,416 | 9,808 |
| CS_00160.las | 16 | 65,520 | 7,424 | 8,400 | 9,568 |
| CS_00161.las | 16 | 65,520 | 7,262 | 8,192 | 9,616 |
| CS_00162.las | 16 | 65,520 | 7,105 | 8,000 | 9,712 |
| CS_00163.las | 16 | 65,520 | 7,232 | 8,192 | 9,808 |
| CS_00164.las | 16 | 65,520 | 6,868 | 7,760 | 9,376 |
| CS_00165.las | 16 | 65,520 | 6,947 | 7,872 | 9,392 |
| CS_00166.las | 16 | 65,520 | 7,009 | 8,000 | 9,408 |
| CS_00167.las | 16 | 65,520 | 6,776 | 7,456 | 9,680 |

C-3 Report on Intensity Values - continued

| File | Minimum | Maximum | Mean | Median | Mode |
|--------------|---------|---------|--------|--------|--------|
| CS_00168.las | 16 | 65,520 | 6,769 | 7,424 | 9,584 |
| CS_00169.las | 16 | 65,520 | 6,501 | 6,480 | 1,472 |
| CS_00170.las | 16 | 65,520 | 6,618 | 6,880 | 9,792 |
| CS_00171.las | 16 | 65,520 | 6,642 | 6,640 | 1,456 |
| CS_00172.las | 16 | 65,520 | 6,902 | 7,808 | 9,568 |
| CS_00173.las | 16 | 65,520 | 6,729 | 7,360 | 9,600 |
| CS_00174.las | 448 | 65,520 | 6,574 | 6,592 | 1,600 |
| CS_00175.las | 16 | 65,520 | 6,762 | 7,344 | 9,792 |
| CS_00176.las | 32 | 65,520 | 14,534 | 15,216 | 16,416 |
| CS_00177.las | 16 | 65,520 | 14,819 | 15,328 | 15,696 |
| CS_00178.las | 16 | 65,520 | 14,579 | 15,120 | 15,872 |
| CS_00179.las | 16 | 65,520 | 14,517 | 15,136 | 16,144 |
| CS_00180.las | 16 | 65,520 | 14,405 | 15,072 | 16,176 |
| CS_00181.las | 16 | 65,520 | 14,749 | 15,216 | 15,680 |
| CS_00182.las | 16 | 65,520 | 14,843 | 15,376 | 16,112 |
| CS_00183.las | 16 | 65,520 | 14,948 | 15,504 | 16,336 |
| CS_00184.las | 16 | 65,520 | 14,997 | 15,520 | 16,064 |
| CS_00185.las | 16 | 65,520 | 14,502 | 15,136 | 16,144 |
| CS_00186.las | 16 | 65,520 | 15,063 | 15,728 | 16,480 |
| CS_00187.las | 16 | 65,520 | 14,877 | 15,568 | 16,496 |
| CS_00188.las | 16 | 65,520 | 14,846 | 15,504 | 16,192 |
| CS_00189.las | 16 | 65,520 | 15,032 | 15,680 | 16,208 |
| CS_00190.las | 16 | 65,520 | 14,536 | 15,120 | 15,712 |
| CS_00191.las | 16 | 65,520 | 14,853 | 15,456 | 16,176 |
| CS_00192.las | 16 | 65,520 | 14,712 | 15,376 | 16,592 |
| CS_00193.las | 16 | 65,520 | 14,716 | 15,344 | 16,368 |
| CS_00194.las | 16 | 65,520 | 14,085 | 14,816 | 15,840 |
| CS_00195.las | 16 | 65,520 | 13,729 | 14,432 | 15,488 |
| CS_00196.las | 16 | 65,520 | 14,389 | 15,152 | 16,336 |
| CS_00197.las | 16 | 65,520 | 13,814 | 14,496 | 15,664 |
| CS_00198.las | 16 | 65,520 | 13,891 | 14,656 | 15,632 |
| CS_00199.las | 16 | 65,520 | 13,666 | 14,624 | 15,824 |
| CS_00200.las | 16 | 65,520 | 13,823 | 14,608 | 15,520 |

C-3 Report on Intensity Values - continued

| File | Minimum | Maximum | Mean | Median | Mode |
|--------------------|---------|---------|--------|--------|--------|
| CS_00201.las | 16 | 65,520 | 14,343 | 15,120 | 16,368 |
| CS_00202.las | 16 | 65,520 | 13,658 | 14,464 | 15,632 |
| CS_00203.las | 16 | 65,520 | 13,745 | 14,704 | 15,888 |
| CS_00204.las | 16 | 65,520 | 14,237 | 14,992 | 16,144 |
| CS_00205.las | 16 | 65,520 | 14,118 | 14,896 | 16,016 |
| CS_00206.las | 16 | 65,520 | 14,360 | 15,136 | 16,288 |
| CS_00207.las | 16 | 65,520 | 14,156 | 14,848 | 16,032 |
| CS_00208.las | 16 | 65,520 | 14,255 | 15,072 | 16,096 |
| CS_00209.las | 16 | 65,520 | 9,841 | 10,448 | 11,296 |
| CS_00210.las | 16 | 65,520 | 10,428 | 10,992 | 11,840 |
| CS_00211.las | 16 | 65,520 | 10,584 | 11,136 | 11,920 |
| CS_00212.las | 16 | 65,520 | 10,602 | 11,120 | 11,808 |
| CS_00213.las | 16 | 65,520 | 10,649 | 11,184 | 11,952 |
| CS_00214.las | 16 | 65,520 | 10,329 | 10,944 | 11,744 |
| CS_00215.las | 16 | 65,520 | 10,033 | 10,672 | 11,616 |
| CS_00216.las | 16 | 65,520 | 10,191 | 10,768 | 11,520 |
| CS_00217.las | 16 | 65,520 | 10,102 | 10,752 | 11,632 |
| CS_00218.las | 16 | 65,520 | 10,162 | 10,656 | 11,456 |
| CS_00219.las | 16 | 65,520 | 10,142 | 10,768 | 11,664 |
| Overall Statistics | 16 | 65,520 | 10,366 | 10,448 | 9,952 |

C-3 Report on Intensity Values - continued

The purpose of this section is to show a frequency distribution chart of intensities throughout all of the lidar files.

[Data Source - Z:\MARS_OC\2900112_Lot_7\Generated_Swath](#)

