

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 - Y:\Mapping\Projects\65220171_USGS-TX_West_Texas\Production\Final_Client_Deliverables\Lot10_utm13\point_cloud\Swaths](#)

File	Minimum	Maximum	Mean	Median	Mode
CS_00176.las	16	65,520	14,421	15,504	16,720
CS_00177.las	16	65,520	14,140	15,152	16
CS_00182.las	16	53,680	14,554	15,664	16
CS_00226.las	16	65,520	15,149	16,016	18,320
CS_00243.las	16	65,520	15,307	16,112	16,048
CS_00245.las	16	65,520	15,188	16,032	16,144
CS_02002.las	64	65,535	6,624	6,944	7,456
CS_02032.las	224	65,535	6,689	6,976	7,392
CS_02034.las	192	65,535	7,372	7,616	7,904
CS_02037.las	32	65,535	7,144	7,328	7,616
CS_02040.las	32	65,535	7,118	7,360	7,840
CS_02043.las	32	65,535	7,246	7,488	7,936
CS_02045.las	32	65,535	7,078	7,360	7,808
CS_02049.las	32	65,535	7,032	7,264	7,744
CS_02059.las	32	65,535	7,383	7,712	8,320
CS_02063.las	32	65,535	6,193	6,560	6,912
CS_02073.las	224	65,535	6,680	6,944	7,328
CS_02075.las	32	65,535	7,018	7,264	7,712
CS_02077.las	32	65,535	6,986	7,136	7,360
CS_02083.las	32	65,535	7,205	7,424	7,776
CS_02088.las	32	65,535	7,139	7,392	7,840
CS_02090.las	32	65,535	7,085	7,360	7,872
CS_02097.las	304	65,520	5,556	5,648	5,712
CS_02107.las	32	65,535	7,333	7,680	8,256
CS_02114.las	32	65,535	6,282	6,656	7,104

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File	Minimum	Maximum	Mean	Median	Mode
CS_02116.las	32	65,535	6,093	6,432	6,624
CS_02118.las	32	65,535	6,415	6,848	7,168
CS_02120.las	32	65,535	5,740	6,240	6,944
CS_02121.las	192	65,535	6,181	6,720	7,520
CS_02132.las	32	65,535	6,770	7,072	7,488
CS_02134.las	32	65,535	6,941	7,168	7,648
CS_02136.las	32	65,535	7,018	7,200	7,392
CS_02139.las	32	65,535	7,160	7,328	7,648
CS_02143.las	32	65,535	7,488	7,808	8,160
CS_02147.las	32	65,535	7,163	7,456	7,904
CS_02149.las	32	65,535	7,180	7,456	7,904
CS_02154.las	32	65,535	7,134	7,360	7,840
CS_02158.las	32	65,535	7,340	7,680	8,160
CS_02163.las	64	65,520	5,792	5,872	5,824
CS_02168.las	32	65,535	7,181	7,552	8,128
CS_02177.las	32	65,535	5,269	5,440	5,536
CS_02179.las	32	65,535	6,167	6,496	6,720
CS_02183.las	32	65,535	5,660	6,144	6,784
CS_02184.las	32	65,535	6,109	6,656	7,424
CS_02185.las	192	65,535	6,340	6,816	7,520
CS_02200.las	192	65,535	6,760	7,008	7,392
CS_02203.las	32	65,535	6,973	7,200	7,584
CS_02208.las	32	65,535	7,214	7,392	7,776
CS_02216.las	32	65,535	7,227	7,520	8,000
CS_02218.las	32	65,535	7,283	7,552	7,968
CS_02223.las	32	65,535	7,262	7,488	7,968
CS_02227.las	32	65,535	7,336	7,680	8,192
CS_02228.las	112	42,160	5,208	5,328	5,472
CS_02230.las	32	65,535	7,365	7,712	8,224
CS_02234.las	32	65,535	7,393	7,616	7,808
CS_02238.las	32	65,535	7,189	7,552	8,128
CS_02248.las	32	65,535	5,310	5,504	5,632
CS_02250.las	32	65,535	6,159	6,528	6,816

C-3 Report on Intensity Values - continued

File	Minimum	Maximum	Mean	Median	Mode
CS_02253.las	128	65,535	6,076	6,624	7,200
CS_02254.las	32	65,535	6,183	6,784	7,552
CS_02256.las	192	65,535	6,312	6,784	7,392
CS_02268.las	288	65,535	6,307	6,592	6,912
CS_02271.las	64	65,535	6,758	7,040	7,616
CS_02274.las	32	65,535	7,058	7,232	7,520
CS_02280.las	32	65,535	7,294	7,520	7,872
CS_02283.las	32	65,535	7,436	7,712	8,064
CS_02289.las	32	65,535	7,329	7,584	8,032
CS_02290.las	32	65,535	7,279	7,552	7,936
CS_02295.las	32	65,535	7,352	7,584	8,000
CS_02296.las	32	65,535	7,589	7,904	8,352
CS_02299.las	32	65,535	7,218	7,552	8,096
CS_02300.las	96	65,520	5,227	5,328	5,360
CS_02302.las	32	65,535	7,330	7,680	8,224
CS_02306.las	32	65,535	7,490	7,744	8,032
CS_02308.las	32	65,535	7,174	7,552	8,192
CS_02316.las	32	65,535	5,308	5,504	5,696
CS_02317.las	32	65,535	6,221	6,560	6,912
CS_02319.las	32	65,535	6,346	6,784	7,104
CS_02320.las	64	65,535	6,006	6,528	7,040
CS_02323.las	128	65,535	6,545	6,976	7,552
CS_02338.las	32	65,535	6,913	7,232	7,904
CS_02341.las	32	65,535	7,018	7,200	7,520
CS_02350.las	32	65,535	7,387	7,648	8,000
CS_02355.las	32	65,535	7,390	7,648	8,032
CS_02356.las	32	65,535	7,193	7,488	8,032
CS_02360.las	32	65,535	7,617	7,936	8,352
CS_02362.las	112	65,520	4,941	5,216	5,760
CS_02363.las	32	65,535	7,331	7,712	8,160
CS_02364.las	160	65,520	4,915	5,184	5,792
CS_02368.las	112	65,520	5,483	5,632	5,808
CS_02369.las	608	65,520	5,666	5,664	5,744

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File	Minimum	Maximum	Mean	Median	Mode
CS_02371.las	32	65,535	7,212	7,584	8,064
CS_02379.las	32	65,535	5,335	5,568	5,728
CS_02380.las	32	65,535	6,249	6,592	6,976
CS_02382.las	192	65,535	6,340	6,752	7,104
CS_02383.las	160	65,535	6,220	6,688	7,200
CS_02384.las	160	65,535	6,074	6,656	7,392
CS_02386.las	192	65,535	6,566	6,976	7,552
CS_02400.las	96	65,535	7,161	7,456	7,776
CS_02409.las	32	65,535	7,286	7,552	7,968
CS_02415.las	32	65,535	7,136	7,424	7,968
CS_02419.las	32	65,535	7,422	7,680	8,128
CS_02420.las	32	65,535	7,538	7,840	8,192
CS_02422.las	144	65,520	5,165	5,408	5,936
CS_02424.las	336	65,520	5,044	5,296	5,632
CS_02426.las	32	65,535	7,181	7,456	8,000
CS_02428.las	48	37,072	5,417	5,536	5,616
CS_02430.las	32	65,535	7,445	7,712	8,064
CS_02432.las	32	65,535	7,129	7,552	8,224
CS_02441.las	32	65,535	6,353	6,752	7,072
CS_02442.las	32	65,535	6,211	6,688	7,232
CS_02443.las	64	65,535	6,115	6,656	7,456
CS_02444.las	32	65,535	6,700	6,912	7,040
CS_02445.las	160	65,535	6,742	7,168	7,744
CS_02450.las	32	65,535	5,906	6,208	6,272
CS_02458.las	32	65,535	6,987	7,296	7,872
CS_02467.las	32	65,535	7,303	7,584	8,032
CS_02473.las	32	65,535	7,178	7,456	7,968
CS_02477.las	32	65,535	7,474	7,744	8,160
CS_02478.las	32	65,535	7,477	7,776	8,128
CS_02480.las	144	65,520	5,128	5,312	5,664
CS_02482.las	288	32,144	5,076	5,360	5,584
CS_02484.las	32	65,535	7,208	7,488	8,032
CS_02486.las	48	65,520	5,671	5,808	6,048

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File	Minimum	Maximum	Mean	Median	Mode
CS_02487.las	32	65,535	7,350	7,616	8,096
CS_02489.las	32	65,535	7,103	7,488	8,032
CS_02500.las	32	65,535	6,361	6,752	6,944
CS_02501.las	32	65,535	6,204	6,688	7,296
CS_02502.las	128	65,535	6,400	6,944	7,744
CS_02503.las	32	65,535	6,653	6,912	7,136
CS_02504.las	736	65,520	5,706	5,680	5,632
CS_02515.las	32	65,535	7,095	7,424	7,904
CS_02529.las	32	65,535	7,255	7,552	8,032
CS_02531.las	112	65,520	4,978	5,120	5,360
CS_02533.las	32	65,535	7,451	7,712	8,160
CS_02534.las	32	65,535	7,459	7,776	8,128
CS_02536.las	64	64,576	5,482	5,680	6,000
CS_02538.las	112	51,088	5,079	5,328	5,632
CS_02540.las	32	65,535	7,157	7,456	7,968
CS_02542.las	160	52,304	5,405	5,520	5,712
CS_02543.las	32	65,535	7,274	7,520	8,000
CS_02545.las	32	65,535	6,949	7,360	7,968
CS_02554.las	32	65,535	6,046	6,496	6,784
CS_02556.las	32	65,535	6,279	6,720	7,072
CS_02557.las	32	65,535	6,036	6,528	7,168
CS_02558.las	96	65,535	6,543	7,104	7,936
CS_02559.las	32	65,535	6,534	6,784	6,944
CS_02583.las	32	65,535	7,275	7,552	8,032
CS_02585.las	176	65,520	5,371	5,536	5,808
CS_02587.las	32	65,535	7,503	7,776	8,128
CS_02588.las	32	65,535	7,446	7,776	8,192
CS_02590.las	96	65,520	5,284	5,456	5,696
CS_02591.las	96	65,520	5,413	5,648	5,808
CS_02593.las	32	65,535	7,038	7,328	7,904
CS_02595.las	48	65,520	5,587	5,728	5,968
CS_02596.las	32	65,535	7,227	7,456	7,840
CS_02598.las	32	65,535	6,833	7,232	7,808

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File	Minimum	Maximum	Mean	Median	Mode
CS_02599.las	240	65,520	5,166	5,248	5,280
CS_02606.las	32	65,535	6,165	6,592	6,880
CS_02608.las	192	65,535	6,345	6,784	7,232
CS_02609.las	32	65,535	6,171	6,656	7,264
CS_02610.las	192	65,535	6,535	7,072	7,904
CS_02612.las	192	65,535	6,668	7,104	7,648
CS_02633.las	32	65,535	7,277	7,552	8,064
CS_02635.las	128	65,520	5,270	5,424	5,584
CS_02636.las	32	65,535	7,470	7,744	8,128
CS_02637.las	32	65,535	7,488	7,840	8,224
CS_02639.las	112	65,520	5,439	5,632	5,968
CS_02640.las	112	65,520	5,070	5,248	5,424
CS_02642.las	32	65,535	7,127	7,424	7,968
CS_02644.las	112	65,520	5,376	5,488	5,584
CS_02645.las	32	65,535	7,263	7,552	8,000
CS_02654.las	32	65,535	6,242	6,624	6,880
CS_02656.las	32	65,535	6,391	6,848	7,264
CS_02657.las	32	65,535	6,094	6,560	7,104
CS_02658.las	192	65,535	6,500	7,040	7,872
CS_02659.las	32	65,535	6,653	6,880	6,976
CS_02660.las	192	65,535	6,765	7,136	7,584
CS_02680.las	32	65,535	7,226	7,520	8,032
CS_02682.las	224	65,520	5,425	5,584	5,776
CS_02683.las	32	65,535	7,433	7,712	8,192
CS_02684.las	32	65,535	7,485	7,808	8,288
CS_02686.las	48	65,520	5,211	5,376	5,760
CS_02687.las	48	65,520	5,325	5,488	5,664
CS_02691.las	224	22,528	5,441	5,584	5,792
CS_02692.las	32	65,535	7,323	7,584	8,000
CS_02696.las	32	65,535	6,888	7,328	7,904
CS_02703.las	32	65,535	6,450	6,816	7,040
CS_02704.las	32	65,535	6,359	6,816	7,264
CS_02705.las	32	65,535	6,001	6,496	7,104

C-3 Report on Intensity Values - continued

File	Minimum	Maximum	Mean	Median	Mode
CS_02706.las	160	65,535	6,397	6,976	7,776
CS_02707.las	32	65,535	6,579	6,816	6,944
CS_02708.las	96	65,535	6,707	7,040	7,296
CS_02728.las	96	65,520	5,223	5,424	5,744
CS_02729.las	32	65,535	7,477	7,776	8,320
CS_02732.las	240	65,520	5,505	5,632	5,776
CS_02733.las	64	65,520	5,242	5,408	5,600
CS_02738.las	32	65,535	7,402	7,680	8,128
CS_02747.las	32	65,535	6,365	6,752	6,944
CS_02749.las	192	65,535	6,510	6,944	7,392
CS_02750.las	96	65,535	5,867	6,400	7,136
CS_02751.las	64	65,535	6,516	7,104	7,840
CS_02752.las	32	65,535	6,667	6,880	7,008
CS_02753.las	32	65,535	6,874	7,168	7,520
CS_02773.las	160	28,480	5,440	5,648	5,744
CS_02781.las	64	34,096	5,130	5,280	5,488
CS_02782.las	32	65,535	7,480	7,744	8,128
CS_02785.las	32	65,535	6,883	7,296	7,840
CS_02792.las	32	65,535	6,502	6,976	7,456
CS_02793.las	32	65,535	5,893	6,432	7,136
CS_02794.las	32	65,535	6,415	6,944	7,584
CS_02795.las	32	65,535	6,537	6,720	6,656
CS_02796.las	128	65,535	6,932	7,200	7,456
CS_02815.las	48	38,912	5,446	5,648	5,856
CS_02816.las	32	65,535	7,573	7,872	8,352
CS_02822.las	48	24,304	5,318	5,488	5,728
CS_02823.las	32	65,535	7,374	7,648	8,160
CS_02834.las	32	65,535	6,476	6,976	7,392
CS_02835.las	32	65,535	5,815	6,336	6,944
CS_02836.las	64	65,535	6,356	6,848	7,616
CS_02837.las	160	65,535	6,984	7,264	7,648
CS_02853.las	368	62,688	5,574	5,696	5,776
CS_02859.las	96	65,520	5,265	5,408	5,472

C-3 Report on Intensity Values - continued

File	Minimum	Maximum	Mean	Median	Mode
CS_02860.las	32	65,535	7,405	7,712	8,192
CS_02863.las	32	65,535	6,836	7,264	7,776
CS_02867.las	32	65,535	6,888	7,264	7,840
CS_02873.las	32	65,535	6,271	6,816	7,520
CS_02900.las	32	65,535	6,911	7,264	7,936
CS_02927.las	32	65,535	6,929	7,296	7,872
CS_02933.las	32	65,535	7,268	7,584	8,128
CS_02979.las	64	65,520	5,641	5,760	5,824
CS_02990.las	176	65,520	5,701	5,840	5,856
CS_03036.las	32	65,535	6,807	7,232	7,872
CS_03040.las	32	65,535	6,817	7,232	7,840
Overall Statistics	16	65,535	6,806	7,008	7,776

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 - Y:\Mapping\Projects\65220171_USGS-TX_West_Texas\Production\Final_Client_Deliverables\Lot10_utm13\point_cloud\Swaths](Y:\Mapping\Projects\65220171_USGS-TX_West_Texas\Production\Final_Client_Deliverables\Lot10_utm13\point_cloud\Swaths)

