M-4 CARLITE

CRGO performance data

Query summary

Grade	M-4 CARLITE
Mill and thickness	Cleveland-Cliffs · 0.27 mm
Published frequency	50 Hz / 60 Hz
Published flux density range	0.1-1.9 T
Distinct flux density levels	19
Properties	Specific core loss · Specific exciting apparent power

50 Hz performance

Table 01 · ASTM A343 Epstein

B (T)	Specific core loss Typical · W/lb	Specific exciting apparent power Typical · VA/lb
0.1	0.00189	0.00424
0.2	0.00707	0.0141
0.3	0.0153	0.0283
0.4	0.0264	0.0457
0.5	0.0402	0.0659
0.6	0.0568	0.0887
0.7	0.0761	0.114
0.8	0.0981	0.142
0.9	0.123	0.173
1	0.151	0.208
1.1	0.182	0.248
1.2	0.217	0.294
1.3	0.255	0.351
1.4	0.300	0.424
1.5	0.354	0.533
1.6	0.421	0.726
1.7	0.520	1.24
1.8	0.680	3.72
1.9	0.845	16.4

Table 02 · ASTM A804 as-sheared SST

B (T)	Specific core loss Guaranteed maximum · W/lb	Specific core loss Typical A · W/lb	Specific core loss Typical B · W/lb	Specific exciting apparent power Typical · VA/lb
0.1	-	0.00183	-	0.00472
0.2	-	0.00702	-	0.0154
0.3	-	0.0152	-	0.0305
0.4	-	0.0265	-	0.0488
0.5	-	0.0400	-	0.0699
0.6	-	0.0564	-	0.0937
0.7	-	0.0753	-	0.120
0.8	-	0.0968	-	0.149
0.9	-	0.121	-	0.181
1	-	0.148	-	0.218
1.1	-	0.179	-	0.258
1.2	-	0.214	-	0.306
1.3	-	0.253	-	0.365
1.4	-	0.298	-	0.437
1.5	0.390	0.353	0.351	0.552
1.6	-	0.418	-	0.711
1.7	0.560	0.514	0.518	1.25
1.8	-	0.658	-	3.50
1.9	-	0.770	-	12.4

60 Hz performance

Table 03 · ASTM A343 Epstein

B (T)	Specific core loss Typical · W/lb	Specific exciting apparent power Typical · VA/lb
0.1	0.00249	0.00524
0.2	0.00935	0.0176
0.3	0.0202	0.0354
0.4	0.0346	0.0574
0.5	0.0531	0.0831
0.6	0.0748	0.112
0.7	0.100	0.145
0.8	0.129	0.181
0.9	0.162	0.221
1	0.198	0.265
1.1	0.239	0.316
1.2	0.285	0.374
1.3	0.336	0.445
1.4	0.395	0.537
1.5	0.463	0.669

B (T)	Specific core loss Typical · W/lb	Specific exciting apparent power Typical · VA/lb
1.6	0.550	0.901
1.7	0.673	1.52
1.8	0.872	4.52
1.9	1.090	20.0

Table 04 · ASTM A804 as-sheared SST

B (T)	Specific core loss Guaranteed maximum · W/lb	Specific core loss Typical A · W/lb	Specific core loss Typical B · W/lb	Specific exciting apparent power Typical · VA/lb
0.1	-	0.00242	-	0.00583
0.2	-	0.00928	-	0.0192
0.3	-	0.0202	-	0.0381
0.4	-	0.0347	-	0.0613
0.5	-	0.0528	-	0.0881
0.6	-	0.0742	-	0.118
0.7	-	0.0990	-	0.152
0.8	-	0.127	-	0.189
0.9	-	0.159	-	0.231
1	-	0.195	-	0.277
1.1	-	0.236	-	0.329
1.2	-	0.281	-	0.389
1.3	-	0.333	-	0.463
1.4	-	0.391	-	0.553
1.5	0.510	0.462	0.460	0.694
1.6	-	0.546	-	0.883
1.7	0.740	0.666	0.670	1.53
1.8	-	0.845	-	4.25
1.9	-	0.990	-	15.1

A dash indicates a value that was not published.

Manufacturer sources and test conditions

Use table and row references to find the original test conditions.

Cleveland-Cliffs

CARLITE® Grain-Oriented Electrical Steels

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PDF page 8 · Table 01,03
Typical core loss · ASTM A343 Epstein
Notes on test conditions ASTM A343 Epstein specimens, as in the indicated table. Source induction in kG converted exactly to T; published original-frequency values are preserved.

PDF page 9 · Table 01,03
Typical RMS exciting power · ASTM A343 Epstein
Notes on test conditions ASTM A343 Epstein specimens, as in the indicated table. Source induction in kG converted exactly to T; published original-frequency values are preserved.

PDF page 3 · Table 02,04
TABLE 1 – GUARANTEED CORE LOSS · ASTM A804 as-sheared SST
Notes on test conditions As-sheared sheet samples cut parallel to the rolling direction, ASTM A804; nominal 7.65 g/cm³.

PDF page 8 · Table 02A,04A
Typical core loss · ASTM A804 as-sheared SST
Notes on test conditions ASTM A804 as-sheared SST specimens, as in the indicated table. Source induction in kG converted exactly to T; published original-frequency values are preserved.

PDF page 3 · Table 02B,04B
TABLE 2 – TYPICAL CORE LOSS · ASTM A804 as-sheared SST
Notes on test conditions As-sheared sheet samples cut parallel to the rolling direction, ASTM A804; nominal 7.65 g/cm³.

PDF page 9 · Table 02,04
Typical RMS exciting power · ASTM A804 as-sheared SST
Notes on test conditions ASTM A804 as-sheared SST specimens, as in the indicated table. Source induction in kG converted exactly to T; published original-frequency values are preserved.

Independent compilation

Compiled by Chenfan Electric from published mill data.
Mill specifications and written order terms govern acceptance. Typical and reference values are for assessment.
Strip data are for engineering reference. Finished-core loss requires separate validation.
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