hardat.ru8

SLAC Magnetic Measurements
Date: 06-14-2001
Time: 10:33:00

Project: nlc
Magnet Type: quad
Magnet Name: protoem1
Serial Number:
Run Number: 8
Measurement Device: coil dc1bq
Operator: zw
Comment: Strength vs Current, after calibration, double coil

Standardization:
3 cycles from 2.0 A to 160.0 A to 2.0 A

Test Currents (A):

| | | | | |
|---|---|---|---|---|
| 10.0 | 20.0 | 30.0 | 40.0 | 50.0 |
| 60.0 | 70.0 | 80.0 | 90.0 | 100.0 |
| 110.0 | 120.0 | 130.0 | 140.0 | 150.0 |
| 160.0 | | | | |

Field Harmonics Data
(on the following pages)

Field Harmonics

Magnet Current, Imag = 29.972213 +- 0.000475 A

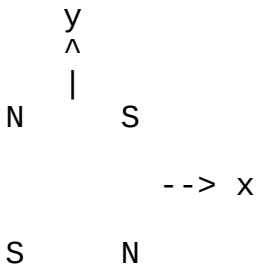
Harmonics given at R = 0.004000 m
Coil Radius, Rcoil = 0.004522 m
Main Harmonic N = 2

| n | BLn (Tm) | sigBLn (Tm) | THspole (deg) | sigTH (deg) | BLn/BLN (%) | sBLn/BLN (%) |
|---|---|---|---|---|---|---|
| 1 | 3.8366e-04 | 3.7293e-07 | 15.83 | 0.04 | 1.36752 | 0.00133 |
| 2 | 2.8055e-02 | 4.5360e-07 | 44.66 | 0.00 | 100.00000 | 0.00229 |
| 3 | 2.0810e-04 | 3.2504e-07 | 39.54 | 0.05 | 0.74175 | 0.00116 |
| 4 | 1.1404e-05 | 4.6321e-07 | -38.42 | 0.57 | 0.04065 | 0.00165 |
| 5 | 8.5632e-06 | 6.8228e-07 | -18.44 | 0.31 | 0.03052 | 0.00243 |
| 6 | 1.3803e-05 | 2.1612e-07 | -5.69 | 0.11 | 0.04920 | 0.00077 |
| 7 | 1.8010e-06 | 2.2597e-07 | -2.44 | 0.91 | 0.00642 | 0.00080 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8 | 2.2344e-06 | 4.1925e-07 | 18.37 | 1.19 | 0.00796 | 0.00149 |
| 9 | 3.7515e-06 | 2.8510e-07 | -15.74 | 0.48 | 0.01337 | 0.00101 |
| 10 | 4.1512e-06 | 2.7614e-07 | -11.19 | 0.24 | 0.01480 | 0.00098 |
| 11 | 3.5554e-06 | 2.5589e-07 | -2.74 | 0.26 | 0.01267 | 0.00091 |
| 12 | 5.3891e-06 | 1.7278e-07 | -1.34 | 0.24 | 0.01921 | 0.00061 |
| 13 | 4.4711e-06 | 1.8872e-07 | 6.38 | 0.32 | 0.01594 | 0.00067 |
| 14 | 6.7722e-06 | 3.5303e-07 | -12.00 | 0.08 | 0.02414 | 0.00126 |
| 15 | 2.5314e-06 | 2.4491e-07 | 1.18 | 0.21 | 0.00902 | 0.00087 |
| 16 | 1.0449e-06 | 2.2321e-07 | -10.27 | 0.67 | 0.00372 | 0.00079 |

Magnetic Center:
Xcenter = -0.00001554 +- 0.00000003 m
Ycenter = -0.00005245 +- 0.00000005 m

View from the lead end




## Field Harmonics

Magnet Current, Imag = 80.004713 +- 0.000370 A

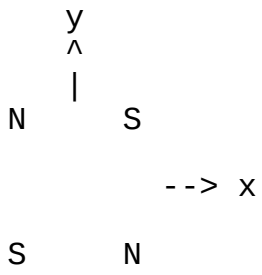
Harmonics given at R = 0.004000 m
Coil Radius, Rcoil = 0.004522 m
Main Harmonic N = 2

| n | BLn (Tm) | sigBLn (Tm) | THspole (deg) | sigTH (deg) | BLn/BLN (%) | sBLn/BLN (%) |
|---|---|---|---|---|---|---|
| 1 | 1.0225e-03 | 1.0886e-06 | 16.57 | 0.03 | 1.38223 | 0.00147 |
| 2 | 7.3973e-02 | 9.8418e-07 | 44.66 | 0.00 | 100.00000 | 0.00188 |
| 3 | 5.5898e-04 | 7.4233e-07 | 39.09 | 0.03 | 0.75565 | 0.00100 |
| 4 | 2.2497e-05 | 2.0234e-06 | -39.98 | 1.18 | 0.03041 | 0.00273 |
| 5 | 2.4752e-05 | 1.5635e-06 | -17.06 | 0.32 | 0.03346 | 0.00211 |
| 6 | 3.6770e-05 | 8.7524e-07 | -6.58 | 0.24 | 0.04971 | 0.00118 |
| 7 | 4.7521e-06 | 8.8293e-07 | -4.03 | 1.82 | 0.00642 | 0.00119 |
| 8 | 5.7380e-06 | 1.0745e-06 | 18.11 | 1.63 | 0.00776 | 0.00145 |
| 9 | 9.9593e-06 | 6.6766e-07 | -16.20 | 0.51 | 0.01346 | 0.00090 |
| 10 | 1.1301e-05 | 7.5439e-07 | -11.16 | 0.25 | 0.01528 | 0.00102 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11 | 9.7584e-06 | 8.9616e-07 | -3.63 | 0.45 | 0.01319 | 0.00121 |
| 12 | 1.4510e-05 | 4.6023e-07 | -1.64 | 0.19 | 0.01962 | 0.00062 |
| 13 | 1.0233e-05 | 6.3188e-07 | 6.11 | 0.17 | 0.01383 | 0.00085 |
| 14 | 1.7032e-05 | 3.2522e-07 | -11.73 | 0.19 | 0.02302 | 0.00044 |
| 15 | 8.4824e-06 | 4.0915e-07 | 0.66 | 0.25 | 0.01147 | 0.00055 |
| 16 | 1.3758e-06 | 6.6046e-07 | 10.71 | 0.61 | 0.00186 | 0.00089 |

Magnetic Center:
Xcenter = -0.00001640 +- 0.00000003 m
Ycenter = -0.00005280 +- 0.00000006 m

View from the lead end




## Field Harmonics

Magnet Current, Imag = 150.061425 +- 0.000614 A

Harmonics given at R = 0.004000 m
Coil Radius, Rcoil = 0.004522 m
Main Harmonic N = 2

| n | BLn (Tm) | sigBLn (Tm) | THspole (deg) | sigTH (deg) | BLn/BLN (%) | sBLn/BLN (%) |
|---|---|---|---|---|---|---|
| 1 | 1.7947e-03 | 3.1066e-06 | 16.31 | 0.08 | 1.35288 | 0.00234 |
| 2 | 1.3266e-01 | 4.6481e-06 | 44.65 | 0.00 | 100.00000 | 0.00496 |
| 3 | 9.9999e-04 | 1.5950e-06 | 38.95 | 0.03 | 0.75380 | 0.00120 |
| 4 | 4.1611e-05 | 1.5514e-06 | -34.57 | 0.49 | 0.03137 | 0.00117 |
| 5 | 4.0943e-05 | 8.7424e-07 | -19.47 | 0.54 | 0.03086 | 0.00066 |
| 6 | 6.8080e-05 | 2.9843e-06 | -7.58 | 0.42 | 0.05132 | 0.00225 |
| 7 | 7.2810e-06 | 1.3713e-06 | -6.01 | 1.47 | 0.00549 | 0.00103 |
| 8 | 1.1127e-05 | 9.0316e-07 | 16.68 | 0.60 | 0.00839 | 0.00068 |
| 9 | 1.7562e-05 | 1.2908e-06 | -16.20 | 0.56 | 0.01324 | 0.00097 |
| 10 | 1.7727e-05 | 1.8896e-06 | -11.72 | 0.47 | 0.01336 | 0.00142 |
| 11 | 1.5191e-05 | 1.0579e-06 | -2.92 | 0.35 | 0.01145 | 0.00080 |
| 12 | 2.5875e-05 | 1.5709e-06 | -1.44 | 0.17 | 0.01950 | 0.00118 |
| 13 | 1.9442e-05 | 5.7746e-07 | 6.48 | 0.16 | 0.01466 | 0.00044 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 14 | 3.2299e-05 | 1.1309e-06 | -11.92 | 0.09 | 0.02435 | 0.00085 |
| 15 | 1.3837e-05 | 1.2110e-06 | 1.24 | 0.12 | 0.01043 | 0.00091 |
| 16 | 5.0468e-06 | 1.0891e-06 | -9.68 | 0.59 | 0.00380 | 0.00082 |

Magnetic Center:
Xcenter = -0.00001584 +- 0.00000008 m
Ycenter = -0.00005175 +- 0.00000010 m

View from the lead end