



JBL PROFESSIONAL

THIELE SMALL LOW FREQUENCY DRIVER PARAMETERS AND DEFINITIONS

July 31, 2007
Page 1 of 5

NOTE: The Parameters marked with an asterisk(*) are the minimum set required for a complete low-frequency system design.

SMALL SIGNAL

| PARAMETER | DESCRIPTION | UNITS |
|------------|--|---------------|
| * f_s | Resonance frequency of driver in free-air | hertz |
| * Q_{ts} | Total Q of driver at " f_s " including all driver loss mechanisms | dimensionless |
| * Eff | Reference efficiency n_o (half-space acoustic load) | % |
| Q_{es} | Volume of air having same acoustic compliance as driver suspension | cubic feet |
| Q_{ms} | Q of driver as " f_s " considering electromagnetic damping only | dimensionless |
| | Q of driver as " f_s " considering mechanical loss mechanisms only (non-electromagnetic) | dimensionless |
| L_e | Voice coil inductance | mH |

LARGE SIGNAL

| PARAMETER | DESCRIPTION | UNITS |
|---------------|---|---------------|
| * P_e (Max) | Thermally-limited maximum electrical input power | watts |
| X_{max} | Peak linear displacement of driver diaphragm | inches |
| S_D | Effective projected surface area of driver diaphragm | square inches |
| * V_D | Peak displacement volume of driver diaphragm(0 to peak) | cubic inches |
| * R_E | dc resistance of driver voice coil | ohms |

MISC.DATA

| PARAMETER | DESCRIPTION | UNITS |
|-----------|--|--------|
| Dia | Piston diameter | inches |
| BL | BL Product | N/A |
| M_{ms} | Effective moving mass | grams |
| $flux$ | Flux density | tesla |
| V_{as} | Volume of air having some acoustic compliance as driver suspension | liters |

Note: We will no longer be providing the flux as is not required for TS parameters only the BL product.



JBL PROFESSIONAL

THIELE SMALL LOW FREQUENCY DRIVER PARAMETERS AND DEFINITIONS

April 21, 2004

Page 1 of 5

NOTE: The Parameters marked with an asterisk(*) are the minimum set required for a complete low-frequency system design.

SMALL SIGNAL

| PARAMETER | DESCRIPTION | UNITS |
|------------|--|---------------|
| * f_s | Resonance frequency of driver in free-air | hertz |
| * Q_{ts} | Total Q of driver at " f_s " including all driver loss mechanisms | dimensionless |
| * Eff | Reference efficiency n_o (half-space acoustic load) | % |
| | Volume of air having same acoustic compliance as driver suspension | cubic feet |
| Q_{es} | Q of driver as " f_s " considering electromagnetic damping only | dimensionless |
| Q_{ms} | Q of driver as " f_s " considering mechanical loss mechanisms only (non-electromagnetic) | dimensionless |
| L_c | Voice coil inductance | mH |

LARGE SIGNAL

| PARAMETER | DESCRIPTION | UNITS |
|---------------|---|---------------|
| * P_e (Max) | Thermally-limited maximum electrical input power | watts |
| X_{max} | Peak linear displacement of driver diaphragm | millimeters |
| S_D | Effective projected surface area of driver diaphragm | square meters |
| * V_D | Peak displacement volume of driver diaphragm(0 to peak) | cubic inches |
| * R_E | dc resistance of driver voice coil | ohms |

MISC.DATA

| PARAMETER | DESCRIPTION | UNITS |
|-----------|-----------------------|--------|
| Dia | Piston diameter | inches |
| BL | BL Product | N/A |
| M_{ms} | Effective moving mass | grams |
| $flux$ | Flux density | tesla |



JBL PROFESSIONAL

THIELE SMALL LOW FREQUENCY DRIVER PARAMETERS AND DEFINITIONS

March 17, 2008

Page 2 of 5

| MODEL | FS | QTS | QMS | QES | VAS | EFF | PE | XMAX | RE | LE | SD | BI | MMS | FLUX |
|-----------|-------|------|-------|------|-------|------|-----|-------|------|-------|--------|------|-------|------|
| 112A | 40 | 0.21 | 4 | 0.22 | 34.0 | 0.9 | 60 | 2.79 | 5.8 | 0.3 | 0.018 | 12 | 22 | 0.95 |
| 116A | 28 | 0.46 | 5 | 0.51 | 73.6 | 0.3 | 50 | 4.83 | 5.2 | 0.6 | 0.018 | 6.7 | 25 | 0.85 |
| 122A | 17 | 0.23 | 7 | 0.24 | 339.8 | 0.67 | 50 | 6.86 | 5.7 | 1.5 | 0.053 | 16 | 100 | 1.08 |
| 123A | 25 | 0.49 | 8.5 | 0.52 | 235.1 | 0.68 | 50 | 7.87 | 4.4 | 0.6 | 0.049 | 8.9 | 85 | 1 |
| 124A | 16 | 0.14 | 6 | 0.14 | 399.3 | 1.1 | 100 | 5.08 | 6.3 | 1.4 | 0.053 | 21 | 100 | 1.2 |
| 125A | 25 | 43 | 7.5 | 0.46 | 235.1 | 0.77 | 50 | 4.83 | 5.2 | 0.7 | 0.049 | 7.5 | 32 | 0.85 |
| 127A | 25 | 0.43 | 7.5 | 0.46 | 235.1 | 0.77 | 50 | 4.83 | 5.2 | 0.7 | 0.049 | 7.5 | 32 | 0.85 |
| 127H | 25 | 0.43 | 7.5 | 46 | 237.9 | 0.77 | 50 | 4.83 | 6.6 | 0.7 | 0.032 | 7.5 | 33 | 1.07 |
| 127H-2 | 30.17 | 0.26 | 2.73 | 0.28 | 4.8 | 1.23 | 125 | | 5.6 | 0.738 | 0.0345 | 11.3 | 34.6 | 11.3 |
| 127H-3 | 37 | 0.37 | 4.18 | 0.40 | 91 | 1.1 | 200 | 6 | 5.6 | 0.8 | 0.0358 | 10.8 | 36 | |
| 127H-4 | 64.3 | 0.5 | 3.08 | 0.60 | 27.9 | 1.2 | 200 | 6 | 4.1 | 1.3 | 0.034 | 10 | 36 | |
| 128H | 20 | 0.24 | 7 | 0.25 | 280.4 | 0.86 | 100 | 7.87 | 5.7 | 0.6 | 0.053 | 16 | 90 | 1.07 |
| 130A | 37 | 0.18 | 4 | 0.19 | 297.4 | 7.7 | 100 | 2.03 | 5.7 | 0.8 | 0.090 | 22.5 | 70 | 1.1 |
| 136A | 16 | 0.21 | 5.5 | 0.22 | 736.3 | 1.4 | 100 | 5.08 | 6.3 | 1.4 | 0.008 | 21 | 151 | 1.2 |
| 136HS | 35 | 0.38 | 7.7 | 0.4 | 153.5 | 1.59 | 300 | 7.87 | 5 | 1.5 | 0.008 | 20 | 146 | 1.22 |
| 218F | 45 | 0.38 | 4.2 | 0.42 | 26 | 0.55 | 200 | 15.7 | 1.8 | 0.15 | 0.215 | 6.1 | 31 | |
| 218F-1 | 45 | 0.38 | 4.2 | 0.42 | 26 | 0.55 | 200 | 15.7 | 1.8 | 0.15 | 0.215 | 6.1 | 31 | |
| 227H | 34 | 0.43 | 10.53 | 0.45 | 77 | 0.70 | 120 | 7 | 5.75 | 3 | 0.0357 | 16.7 | 50 | |
| 252F | 24 | 0.29 | 67 | 0.3 | 171 | 0.75 | 150 | 7 | 1.38 | 0.35 | 0.053 | 8.4 | 103 | |
| 252G | 23 | 0.25 | 6.3 | 0.26 | 178 | 0.79 | 150 | 7 | 4.4 | 1.24 | 0.053 | 16.3 | 110 | |
| 262G | 53 | 0.36 | 3.56 | 0.41 | 55 | 2.0 | 300 | 3.5 | 1.47 | 1.47 | 0.056 | 9.15 | 69 | 0.52 |
| 262F | 53 | 0.36 | 3.56 | 41 | 55 | 20 | 300 | 4.0 | 1.47 | 0.24 | 0.056 | 9.15 | 69 | 0.52 |
| 262F-1 | 52 | 0.29 | 3 | 0.32 | 65 | 2.7 | 300 | 4.0 | 1.36 | 0.24 | 0.056 | 9.5 | 65 | 0.52 |
| 262H | 54 | 0.34 | 5.23 | 0.36 | 66 | 2.7 | 300 | 16 | 5.5 | 1.5 | 0.056 | 17.3 | 58 | 0.52 |
| 262H-1 | 54 | 0.34 | 5.23 | 0.36 | 66 | 2.7 | 300 | 2.5 | 5.5 | 1.5 | 0.056 | 17.3 | 58 | 0.52 |
| 265F | 34 | 0.3 | 5.1 | 0.31 | 239 | 3 | 300 | 2.5 | 1.35 | | 0.086 | | 92 | 0.52 |
| 265F-1 | 34 | 0.3 | 5.1 | 0.31 | 239 | 3 | 300 | 2.5 | 1.34 | 1.03 | 0.086 | 9.5 | 92 | 0.52 |
| 265H | 33 | 0.3 | 5.7 | 0.31 | 264 | 2.9 | 300 | 2.5 | 5.2 | 1.03 | 0.086 | 17.8 | 92 | 0.52 |
| 265H-1 | 39 | 0.32 | 3.7 | 0.35 | 170 | 2.7 | | 6.5 | 5.4 | | 0.086 | 19.7 | 103 | 0.52 |
| 506G | 50 | 0.5 | 2.5 | 0.65 | 19.8 | 0.42 | 50 | 10.67 | 4.5 | 0.6 | 0.014 | 6 | 13 | 1.05 |
| 508G | 45 | 0.6 | 7.5 | 0.65 | 42.5 | 0.66 | 100 | 10.41 | 5.9 | 0.7 | 0.021 | 7 | 17 | 1 |
| 1400 | 52 | 0.31 | 4.1 | 0.34 | 62.3 | 2.5 | 600 | 7.62 | 4.1 | 0.9 | 0.064 | 18.4 | 85 | 0.56 |
| 2012H | 60 | 0.22 | 4.34 | 0.23 | 1.34 | 3.47 | 300 | 5 | 4.65 | | 0.031 | 13.9 | 0.025 | |
| 2020H | 66 | 0.25 | 5 | 0.26 | 51.5 | 5.43 | 400 | 5.08 | 4.8 | 0.02 | 0.053 | 18.3 | 44 | 1 |
| 2022H | 75 | 0.4 | 4.3 | 0.44 | 42.5 | 3.9 | 300 | 6.35 | 4.6 | 0.7 | 0.053 | 14.6 | 43 | 1 |
| 2023H | 67 | 0.37 | 5.5 | 0.37 | 48.8 | 3.5 | 300 | 8.6 | 5.25 | 1.6 | 0.0547 | 16.2 | 45 | |
| 2025H | 48 | 0.22 | 4 | 0.23 | 78.4 | 3.55 | 400 | 7.11 | 3.9 | 0.15 | 0.053 | 16.6 | 55 | 1 |
| 2032H | 57 | 0.54 | 5.5 | 0.6 | 133.1 | 4 | 300 | 6.35 | 4.2 | 0.6 | 0.088 | 12.8 | 65 | 1 |
| 2033H | 50 | 0.42 | 7.8 | 0.44 | 170 | 4.3 | 300 | 8.6 | 5.2 | 1.6 | 0.091 | 16 | 69 | |
| 2035H | 48 | 0.34 | 5 | 0.36 | 140.5 | 4.13 | 400 | 7.11 | 3.9 | 0.25 | 0.088 | 16.6 | 85 | 1 |
| 2035HPL-1 | 43 | 0.34 | 4.9 | 0.36 | 6.8 | 3.8 | 300 | 7 | 4.7 | 0.25 | 0.088 | 16.5 | 0.082 | 1 |
| 2042H | 39 | 0.4 | 5 | 0.44 | 337.0 | 4.5 | 300 | 7.62 | 4.3 | 0.8 | 0.127 | 16.2 | 110 | 1 |
| 2043G | 31 | 0.32 | 7.3 | 0.36 | 384.0 | 3.3 | 350 | 8 | 2.7 | 1.1 | 0.127 | 15.5 | 153 | 1 |
| 2044E | 36 | 0.53 | 6.05 | 0.58 | 308.0 | 2.4 | 500 | 8 | 1 | 0.28 | 0.127 | 7.5 | 144 | |
| MODEL | FS | QTS | QMS | QES | VAS | EFF | PE | XMAX | RE | LE | SD | BI | MMS | FLUX |



JBL PROFESSIONAL

THIELE SMALL LOW FREQUENCY DRIVER PARAMETERS AND DEFINITIONS

March 17, 2008

Page 3 of 5

| MODEL | FS | QTS | QMS | QES | VAS | EFF | PE | XMAX | RE | LE | SD | BI | MMS | FLUX |
|---------|-----|------|------|------|-------|------|-----|-------|------|------|---------|------|------|------|
| 2044G | 31 | 0.32 | 7 | 0.34 | 374.0 | 3.2 | 500 | 9.5 | 2.5 | 1 | 0.127 | 15.3 | 161 | |
| 2044H | 31 | 0.32 | 11 | 0.33 | 374.0 | 3.2 | 500 | 9.5 | 5 | 2 | 0.127 | 21.7 | 161 | |
| 2104H | 207 | 0.66 | 207 | 0.87 | 1.0 | 0.9 | 50 | 1.3 | 4.24 | 0.5 | 0.0062 | 4.8 | 3.6 | 1.25 |
| 2105H | 200 | 0.53 | 3 | 0.65 | 1.0 | 1.2 | 25 | 1.52 | 6.1 | 0.3 | 0.006 | 6.6 | 3.5 | 1.35 |
| 2106H | 386 | 0.88 | 12.4 | 0.95 | 0.2 | 1.5 | 100 | 0.418 | 4.68 | 0.64 | 0.0095 | 8.79 | 9.65 | |
| 2108 | 40 | 0.17 | 4.5 | 0.18 | 36.8 | 1.2 | 75 | 1.52 | 5.8 | 0.5 | 0.018 | 13 | 20 | 1.02 |
| 2110 | 60 | 0.31 | 3.5 | 0.34 | 34.0 | 2.1 | 25 | 2.54 | 6 | 0.3 | 0.021 | 6.8 | 11 | 0.85 |
| 2115A | 55 | 0.48 | 4 | 0.54 | 34.0 | 1 | 30 | 5.59 | 5.5 | 0.3 | 0.018 | 6.8 | 11 | 0.85 |
| 2118H | 85 | 0.35 | 2.4 | 0.4 | 14.2 | 2.1 | 100 | 3.05 | 5.5 | 0.6 | 0.021 | 11 | 17 | 1.05 |
| 2118J | 85 | 0.35 | 2.4 | 0.4 | 14.2 | 2.1 | 100 | 3.05 | 10.3 | 0.9 | 0.021 | 15 | 17 | 1.05 |
| 2119H | 78 | 0.37 | 4.5 | 0.37 | 0.5 | 1.68 | 175 | 2.54 | 5.3 | 0.55 | 0.0218 | | | 0.10 |
| 2120 | 65 | 0.36 | 4 | 0.4 | 45.3 | 3 | 75 | 1.52 | 6 | 0.4 | 0.032 | 10.3 | 17 | 1.02 |
| 2121 | 35 | 0.19 | 5.5 | 0.2 | 110.4 | 2.7 | 75 | 1.52 | 6.8 | 0.9 | 0.032 | 12.7 | 25 | 1 |
| 2121H | 35 | 0.16 | 5.5 | 0.17 | 110.4 | 2.7 | 75 | 1.52 | 6 | 0.8 | 0.032 | 13.7 | 26 | 1.02 |
| 2122H | 40 | 0.23 | 1.9 | 0.26 | 65.1 | 2.4 | 100 | 3.05 | 5.8 | 0.6 | 0.032 | 13.2 | 28 | 1.02 |
| 2123H | 85 | 0.32 | 2.5 | 0.37 | 19.8 | 3.5 | 250 | 2.54 | 4.2 | 0.4 | 0.032 | 13 | 25 | 1.07 |
| 2123J | 85 | 0.32 | 2.5 | 0.37 | 19.8 | 3.5 | 250 | 2.54 | 8.7 | 0.8 | 0.032 | 18.7 | 25 | 1.07 |
| 2125 | 45 | 0.45 | 4.5 | 0.5 | 135.9 | 2.5 | 50 | 2.54 | 6 | 0.5 | 0.053 | 12.4 | 45 | 1 |
| 2130 | 50 | 0.2 | 4 | 0.21 | 121.8 | 6.9 | 100 | 1.52 | 6.3 | 0.6 | 0.053 | 18 | 35 | 1.2 |
| 2135 | 40 | 0.25 | 4 | 0.27 | 297.4 | 6.7 | 125 | 1.52 | 6.3 | 0.6 | 0.089 | 18 | 60 | 1.2 |
| 2142H | 72 | 0.75 | 4.2 | 0.92 | 45.3 | 1.82 | 100 | 6.35 | 5.2 | 0.85 | 0.053 | 9.95 | 46 | |
| 2145A | 30 | 0.51 | 12 | 0.53 | 155.8 | 0.76 | 50 | 3.56 | 5 | 0.4 | 0.044 | 9.4 | 50 | 1 |
| 2150 | 55 | 0.64 | 5 | 0.73 | 99.1 | 2.2 | 50 | 2.54 | 5.5 | 1 | 0.075 | 22.3 | 105 | 1.2 |
| 2152H | 85 | 0.39 | 3.3 | 0.44 | 36.8 | 5.1 | 150 | 2.54 | 4.5 | 0.5 | 0.053 | | | 10.2 |
| 2155H | 53 | 0.47 | 4.47 | 0.53 | 164.3 | 4.4 | 150 | 2.54 | 4.2 | 0.48 | 0.090 | | | 10.2 |
| 2168H | 120 | 0.38 | 5.5 | 0.41 | 3.71 | 1.6 | 350 | 7 | 5.2 | 0.9 | 0.019 | 15.3 | 23 | 1 |
| 2168H-1 | 70 | 0.3 | 5.6 | 0.32 | 9.2 | 1.3 | 350 | 6.8 | 5.1 | 0.93 | 189 | 14.2 | 28 | 0.82 |
| 2168J | 122 | 0.04 | 5.8 | 0.43 | 3.4 | 1.3 | 350 | 7 | 10.1 | 1.6 | 0.019 | 21.3 | 25.5 | 1 |
| 2168J-1 | 77 | 0.4 | 5.7 | 0.42 | 8.3 | 1.3 | 350 | 6.4 | 10.1 | 0.24 | 189.000 | 17.5 | 27 | 0.82 |
| 2169H | 320 | 0.61 | 6.5 | 0.68 | 0.55 | 1.3 | 200 | 3 | 5.1 | 0.9 | 0.020 | 19.8 | 26 | 1 |
| 2202A | 50 | 0.17 | 3.5 | 0.18 | 87.8 | 5.5 | 100 | 3.05 | 5.5 | 1 | 0.053 | 22 | 50 | 1.2 |
| 2202H | 50 | 0.16 | 3.5 | 0.18 | 87.8 | 6 | 150 | 3.56 | 5.5 | 1.1 | 0.053 | 22.5 | 50 | 1.2 |
| 2202J | 50 | 0.16 | 4.3 | 0.18 | 87.8 | 6 | 150 | 3.56 | 11 | 1.8 | 0.053 | 27.8 | 50 | 1.2 |
| 2203A | 16 | 0.14 | 6 | 0.14 | 399.3 | 1.1 | 100 | 5.08 | 6.3 | 1.4 | 0.053 | 21 | 100 | 1.2 |
| 2203H | 16 | 0.14 | 6 | 0.14 | 399.3 | 1.1 | 100 | 5.08 | 6.3 | 1.4 | 0.053 | 21 | 100 | 1.2 |
| 2204H | 45 | 0.35 | 1.7 | 0.44 | 87.8 | 1.8 | 350 | 6.86 | 6.2 | 0.7 | 0.054 | 15 | 57 | 1.2 |
| 2204J | 45 | 0.35 | 1.7 | 0.44 | 87.8 | 1.8 | 350 | 6.86 | 12.4 | 1.6 | 0.054 | 25.5 | 57 | 1.2 |
| 2205A | 30 | 0.21 | 5 | 0.22 | 297.3 | 3.5 | 150 | 2.54 | 5.5 | 1.3 | 0.090 | 22.3 | 105 | 1.2 |
| 2205H | 30 | 0.21 | 5 | 0.22 | 297.3 | 3.5 | 150 | 2.54 | 5.5 | 1.3 | 0.090 | 22.3 | 105 | 1.2 |
| 2206H | 52 | 0.32 | 4.45 | 0.34 | 62.3 | 2.5 | 600 | 7.62 | 5.3 | 1.5 | 0.055 | 18.1 | 65 | 1 |
| 2206J | 52 | 0.34 | 4.5 | 0.37 | 62.0 | 2.21 | 600 | 7.62 | 9.9 | 3 | 0.055 | 24 | 66 | 1 |
| 2213 | 25 | 0.49 | 8.5 | 0.52 | 235.0 | 0.68 | 50 | 7.87 | 4.4 | 0.6 | 0.049 | 8.9 | 85 | 1 |
| 2213H | 25 | 0.49 | 8.5 | 0.52 | 235.0 | 0.68 | 75 | 7.87 | 4.4 | 0.6 | 0.049 | 8.9 | 85 | 1 |
| 2214H | 23 | 0.24 | 10.5 | 0.25 | 223.7 | 1.1 | 200 | 6.60 | 5.6 | 1.3 | 0.053 | 16 | 90 | 1.07 |
| MODEL | FS | QTS | QMS | QES | VAS | EFF | PE | XMAX | RE | LE | SD | BI | MMS | FLUX |



JBL PROFESSIONAL

THIELE SMALL LOW FREQUENCY DRIVER PARAMETERS AND DEFINITIONS

March 17, 2008

Page 4 of 5

| MODEL | FS | QTS | QMS | QES | VAS | EFF | PE | XMAX | RE | LE | SD | BI | MMS | FLUX |
|---------|-------|------|-------|------|-------|------|------|------|-------|-------|--------|-------|-------|-------|
| 2215A | 20 | 0.21 | 5.5 | 0.22 | 736.2 | 2.6 | 100 | 4.06 | 5.7 | 1 | 0.090 | 22 | 97 | 0.9 |
| 2215B | 20 | 0.21 | 5.5 | 0.22 | 736.2 | 2.5 | 100 | 4.06 | 8.8 | 2.2 | 0.088 | 22 | 97 | 0.9 |
| 2215H | 20 | 0.21 | 5.5 | 0.22 | 736.2 | 2.6 | 100 | 4.06 | 5.7 | 1 | 0.090 | 22 | 97 | 0.09 |
| 2217H | 45 | 0.31 | 6 | 0.33 | 83.8 | 2.19 | 600 | 7.62 | 5 | 1.8 | 0.063 | 18.7 | 83 | 1 |
| 2220A | 37 | 0.18 | 4 | 0.19 | 297.3 | 7.7 | 100 | 2.03 | 5.7 | 0.8 | 0.090 | 22.5 | 70 | 1.1 |
| 2220H | 37 | 0.17 | 5 | 0.18 | 297.3 | 8.7 | 100 | | 5.7 | 1.06 | 0.089 | 22.3 | | 1.15 |
| 2220J | 37 | 0.17 | 5 | 0.18 | 297.3 | 8.7 | 100 | | 13.2 | 2.41 | 0.089 | 33 | | 1.15 |
| 2225H | 40 | 0.28 | 2.5 | 0.31 | 169.9 | 3.5 | 200 | 5.08 | 6.3 | 1.1 | 0.090 | 23 | 105 | 1.2 |
| 2225J | 40 | 0.28 | 2.5 | 0.31 | 169.9 | 3.5 | 200 | 5.08 | 12.9 | 2.2 | 0.090 | 34 | 105 | 1.2 |
| 2226G | 40 | 0.31 | 5 | 0.33 | 175.6 | 3.3 | 600 | 7.62 | 2.5 | 0.92 | 0.088 | 13.5 | 98 | 1.05 |
| 2226H | 40 | 0.31 | 5 | 0.33 | 175.6 | 3.3 | 600 | 7.62 | 5 | 1.75 | 0.088 | 19.2 | 98 | 1 |
| 2226J | 40 | 0.31 | 5 | 0.33 | 175.6 | 3.3 | 600 | 7.62 | 10 | 3.5 | 0.088 | 27.1 | 98 | 1 |
| 2227H | 40 | 0.21 | 5 | 0.22 | 175.6 | 4.9 | 600 | 5.08 | 4.7 | 0.55 | 0.088 | 23 | 99 | |
| 2231A | 16 | 0.21 | 5.5 | 0.22 | 736.2 | 1.4 | 100 | 5.08 | 6.3 | 1.4 | 0.088 | 21 | 151 | 1.2 |
| 2231H | 16 | 0.21 | 5.5 | 0.22 | 736.2 | 1.4 | 100 | 5.08 | 6.3 | 1.4 | 0.088 | 21 | 151 | 1.2 |
| 2234H | 23 | 0.22 | 2 | 0.25 | 458.7 | 2.1 | 150 | 8.38 | 6 | 1.2 | 0.090 | 20.5 | 105 | 1.2 |
| 2235H | 20 | 0.25 | 2.5 | 0.28 | 458.7 | 1.3 | 150 | 8.38 | 6 | 1.2 | 0.090 | 20.5 | 155 | 1.2 |
| 2240G | 30 | 0.25 | 2.5 | 0.25 | 481.4 | 5 | 300 | 5.59 | 2.5 | 0.7 | 0.130 | 17.1 | 164 | 1.22 |
| 2240H | 30 | 0.23 | 2.2 | 25 | 481.4 | 5 | 300 | 5.59 | 6 | 1.4 | 0.130 | 25 | 164 | 1.22 |
| 2241G | 35 | 0.4 | 5.7 | 0.43 | 311.5 | 2.9 | 600 | 7.62 | 2.5 | 0.86 | 0.123 | 13.6 | 145 | |
| 2241H | 35 | 0.4 | 5.7 | 0.43 | 311.5 | 2.9 | 600 | 7.62 | 5 | 1.75 | 0.123 | 19.2 | 145 | |
| 2242H | 35 | 0.28 | 5 | 0.29 | 282.3 | 4 | 800 | 7.87 | 4.7 | 1.25 | 0.124 | 23.7 | 158 | |
| 2245H | 20 | 0.27 | 2.2 | 0.27 | 821.2 | 2.1 | 300 | 9.65 | 5.8 | 1.4 | 0.130 | 21 | 185 | 1.22 |
| 2250H | 188 | 0.47 | 4.5 | 0.53 | 1.67 | 2 | 350 | 3 | 5.2 | 1 | 0.0204 | 17 | 25 | 1.0 |
| 2250J | 185 | 0.45 | 4.8 | 0.47 | 1.5 | 2.3 | 350 | 3.0 | 8.7 | 1.7 | 0.0204 | 22.5 | 24 | 1 |
| 2251J | 61 | 0.2 | 4 | 0.21 | 1.011 | 2.89 | 388 | 5.7 | 12.65 | | 0.031 | 26.77 | 0.032 | |
| 2254J | 46.63 | 0.16 | 2.47 | 0.17 | 2.60 | 4.20 | 600 | 6.35 | 11.16 | | 0.063 | 10.99 | 0.088 | |
| 2255H | 39 | 0.30 | 3.68 | 0.33 | 170 | 2.9 | 650 | 8 | 5.0 | 1.5 | 0.088 | 20.1 | 109 | |
| 2256G | 24.2 | 0.47 | 7.79 | 0.5 | 138.5 | | 600 | 20.3 | 3.1 | 0.7 | 0.078 | 15.7 | 284 | 0.657 |
| 2258H | 31 | 0.27 | 4.82 | 0.28 | 407 | | 800 | 8 | 5.2 | 1.24 | 0.124 | 22.3 | 140 | |
| 2261FF | 58 | 0.31 | 4 | 0.34 | 29 | 1.6 | 500 | 6 | 2.6 | 0.28 | 0.0363 | 11.6 | 49 | 0.6 |
| 2262FF | 51 | 0.28 | 1.9 | 0.31 | 51 | 2.2 | 700 | 8 | 2.9 | 0.425 | 0.057 | 16.0 | 87 | |
| 2262G | 48 | 0.33 | 2.33 | 0.38 | 58.5 | 17 | 500 | 8 | 2.65 | | 0.055 | 13 | 79 | 0.6 |
| 2262H | 56.2 | 0.34 | 90.39 | 42.2 | 2.2 | 700 | 8 | 5.2 | 5.2 | 0.055 | 18 | 68.0 | 68 | 0.6 |
| 2265G | 38 | 0.35 | 3 | 0.39 | 162 | 2.2 | 750 | 8 | 2.5 | 0.8 | 0.088 | 3.5 | 116 | 0.6 |
| 2265G-1 | 42 | 0.37 | 2.8 | 0.43 | 133 | 2.3 | 675 | 8 | 2.45 | 0.8 | 0.088 | 13.6 | 116 | 0.6 |
| 2265H | 37 | 0.32 | 3.3 | 0.36 | 176 | 2.5 | 750 | 8 | 5.1 | 1.7 | 0.088 | 19.5 | 112 | 0.6 |
| 2266H | 31 | 0.37 | 4.8 | 0.4 | 110 | 0.8 | 700 | 11 | 4.8 | 2.63 | 0.088 | 24.7 | 260 | 0.6 |
| 2268FF | 32 | 0.36 | 3.3 | 0.40 | 318 | 2.7 | 800 | 23 | 2.7 | 1.1 | 0.1269 | 15.4 | 172 | 0.49 |
| 2268G | 29 | 0.35 | 4.4 | 0.38 | 386 | 2.4 | 750 | 23 | 2.75 | | 0.1269 | 15.2 | 175 | 0.49 |
| 2268H | 33 | 0.36 | 3.8 | 0.39 | 328 | 2.8 | 800 | 23 | 5.3 | 1.85 | 0.1269 | 21.5 | 168 | 0.6 |
| 2269G | 26 | 0.39 | 7.5 | 0.41 | 234 | 0.9 | 1200 | 19 | 2.7 | 1.2 | 1225 | 19.2 | 340 | 0.6 |
| 2269H | 28 | 0.36 | 4.8 | 0.39 | 237 | 1.2 | 1200 | 19 | 5.3 | 2.5 | 1225 | 26.4 | 294 | 0.6 |
| D123 | 45 | 0.45 | 4.5 | 0.5 | 135.9 | 2.5 | 50 | 2.54 | 6 | 0.5 | 0.053 | 12.4 | 45 | 1 |
| MODEL | FS | QTS | QMS | QES | VAS | EFF | PE | XMAX | RE | LE | SD | BI | MMS | FLUX |



JBL PROFESSIONAL

THIELE SMALL LOW FREQUENCY DRIVER PARAMETERS AND DEFINITIONS

March 17, 2008

Page 5 of 5

| MODEL | FS | QTS | QMS | QES | VAS | EFF | PE | XMAX | RE | LE | SD | BI | MMS | FLUX |
|---------|-----|-------|-----|------|-------|------|-----|------|-----|------|--------|------|------|------|
| D130 | 40 | 0.25 | 4 | 0.27 | 297.3 | 6.7 | 75 | 0.76 | 6.3 | 0.6 | 0.090 | 18 | 60 | 1.2 |
| D131 | 50 | 0.18 | 8.5 | 0.18 | 127.4 | 8.4 | 75 | 0.76 | 6.3 | 0.5 | 0.053 | 18 | 35 | 1.2 |
| D208 | 60 | 0.31 | 3.5 | 0.34 | 34.0 | 2.1 | 25 | 2.54 | 6 | 0.3 | 0.021 | 6.8 | 11 | 0.85 |
| E110 | 65 | 0.36 | 4 | 0.4 | 45.3 | 3 | 75 | 2.54 | 6 | 0.4 | 0.032 | 12.1 | 21 | 1.03 |
| E120 | 60 | 0.17 | 1.8 | 0.19 | 79.3 | 8.6 | 150 | 3.05 | 6.3 | 0.4 | 0.053 | 21.7 | 36 | 1.35 |
| E130 | 40 | 0.19 | 1.8 | 0.21 | 297.3 | 8.6 | 150 | 2.54 | 6.3 | 0.4 | 0.090 | 21.1 | 60 | 1.35 |
| E140 | 32 | 0.17 | 5 | 0.19 | 297.3 | 4.9 | 200 | 3.56 | 5.5 | 1.11 | 0.090 | 24.1 | 94 | 1.35 |
| E145 | 35 | 0.25 | 6 | 0.26 | 274.7 | 4.3 | 150 | 7.11 | 5.7 | 1.6 | 0.090 | 16.1 | 55 | 0.97 |
| E155-4 | 30 | 0.2 | 2.2 | 0.22 | 424.8 | 4.9 | 300 | 5.08 | 2.5 | 0.7 | 0.114 | 17 | 125 | 1.22 |
| E155-8 | 30 | 0.2 | 2.2 | 0.22 | 424.8 | 4.9 | 300 | 5.08 | 6 | 1.4 | 0.114 | 25 | 125 | 1.22 |
| G125-8 | 65 | 0.32 | 5.5 | 0.34 | 70.8 | 5.5 | 200 | 2.54 | 5.2 | 0.5 | 0.053 | 13.7 | 37 | 0.98 |
| G135-8 | 45 | 0.36 | 5.5 | 0.38 | 235.0 | 5.5 | 200 | 2.54 | 5.2 | 0.5 | 0.090 | 13.7 | 60 | 0.98 |
| G135-A | 45 | 0.48 | 6.6 | 0.51 | 218.0 | 3.8 | 200 | 6.10 | 6 | 0.75 | 0.090 | 15.8 | 60 | 0.98 |
| K110 | 65 | 0.36 | 4 | 0.4 | 45.3 | 3 | 75 | 1.52 | 6 | 0.4 | 0.032 | 10.3 | 17 | 1.02 |
| K120 | 50 | 0.2 | 4 | 0.21 | 121.8 | 6.9 | 100 | 1.52 | 6.3 | 0.6 | 0.053 | 18 | 35 | 1.2 |
| K130 | 40 | 0.25 | 4 | 0.27 | 297.3 | 6.7 | 125 | 0.76 | 6.3 | 0.6 | 0.090 | 18 | 60 | 1.2 |
| K140 | 30 | 0.21 | 5 | 0.22 | 297.3 | 3.5 | 150 | 5.08 | 5.5 | 1.3 | 0.090 | 22.3 | 105 | 1.2 |
| K145 | 35 | 0.29 | 6 | 0.3 | 243.5 | 3.4 | 150 | 5.08 | 8.8 | 2.2 | 0.079 | 21.7 | 75 | 0.9 |
| K151 | 30 | 0.27 | 6 | 0.28 | 365.3 | 3.4 | 150 | 2.54 | 6 | 2 | 0.107 | 22 | 125 | 1.2 |
| LE5-10 | 250 | 1 | 3 | 1.6 | 0.7 | 0.69 | 25 | 1.52 | 6 | 0.05 | 0.006 | 4.3 | 3 | 1.3 |
| LE8T | 45 | 0.49 | 4 | 0.55 | 34.0 | 0.5 | 25 | 4.57 | 5.5 | 0.3 | 0.018 | 6.2 | 16 | 0.85 |
| LE8TH | 45 | 0.56 | 4 | 0.65 | 34.0 | 0.5 | 25 | 5.59 | 5.5 | 0.3 | 0.018 | 6.2 | 16 | 0.85 |
| LE10A | 30 | 0.41 | 6 | 0.44 | 101.9 | 0.6 | 75 | 6.10 | 4.4 | 0.6 | 0.032 | 8.1 | 35 | 1.02 |
| LE10H | 33 | 0.37 | 6.9 | 0.39 | 76.5 | 0.7 | 75 | 6.10 | 4.8 | 0.6 | 0.032 | 9.7 | 40 | 1.02 |
| LE111A | 25 | 0.17 | 6 | 0.18 | 101.9 | 0.87 | 75 | 6.10 | 5.7 | 1.5 | 0.032 | 16 | 50 | 1.08 |
| LE12C | 30 | 0.51 | 12 | 0.53 | 155.7 | 0.76 | 50 | 3.56 | 5 | 0.4 | 0.044 | 9.4 | 50 | 1 |
| LE14A | 28 | 0.32 | 6.5 | 0.34 | 147.2 | 0.95 | 100 | 5.08 | 6.3 | 1.4 | 0.066 | 21.5 | 140 | 1.2 |
| LE14H | 26 | 0.27 | 2.3 | 0.3 | 147.2 | 0.89 | 150 | 8.38 | 5.9 | 1.3 | 0.066 | 22 | 139 | 1.25 |
| LE15A | 20 | 0.21 | 5.5 | 0.22 | 736.2 | 2.6 | 100 | 4.06 | 8.8 | 2.2 | 0.088 | 22 | 97 | 0.9 |
| MI-10 | 75 | 0.33 | 1.8 | 0.41 | 36.8 | 3.5 | 150 | 3.05 | 5.6 | 0.6 | 0.034 | 11.6 | 21 | 1.05 |
| MI-12 | 65 | 0.46 | 2.2 | 0.58 | 76.5 | 3.5 | 150 | 3.05 | 5.6 | 0.6 | 0.055 | 11.6 | 34 | 1.05 |
| MI-15 | 55 | 0.62 | 2.8 | 0.79 | 169.9 | 3.5 | 150 | 3.05 | 5.6 | 0.6 | 0.090 | 11.6 | 55 | 1.05 |
| MI-15A | 40 | 0.42 | 4 | 0.47 | 271.8 | 3.5 | 150 | 3.56 | 5.6 | 0.9 | 0.090 | 11.6 | 55 | 1.05 |
| M121-8 | 60 | 0.245 | 4 | 0.25 | 70.8 | 6 | 300 | 4.57 | 5.2 | 0.63 | 0.053 | 17.5 | 39 | 1 |
| M151-4 | 50 | 0.28 | 6 | 0.3 | 148.7 | 5.92 | 300 | 5.08 | 2.4 | 0.42 | 0.088 | 13.6 | 74 | 1 |
| M151-8 | 45 | 0.25 | 4.8 | 0.27 | 198.2 | 6.5 | 300 | 5.08 | 4.8 | 0.72 | 0.088 | 18.8 | 70 | 1 |
| M112-8 | 79 | 0.36 | 2 | 0.44 | 0.45 | 4.8 | 225 | 5.1 | 5.2 | 1.2 | 0.0564 | 15.5 | 41.4 | |
| M115-8 | 46 | 0.42 | 9.5 | 0.4 | 230 | 5 | 225 | 5.1 | 5.5 | 1.3 | 0.0830 | 13.9 | 53 | |
| M115-8A | 46 | 0.39 | 5.1 | 0.42 | 225 | 5 | 250 | 5.1 | 5.5 | 1.3 | 0.0845 | 14 | 53 | |
| M209-8 | 91 | 0.39 | 2 | 0.48 | 13.3 | 2.01 | 150 | 1.78 | 4.9 | 0.27 | 0.022 | 9.5 | 16 | 1.05 |
| M222-8 | 71 | 0.48 | 3.6 | 0.55 | 41.9 | 2.62 | 300 | 6.35 | 4.2 | 0.43 | 0.053 | 12.8 | 48 | 1 |
| M252-8 | 51 | 0.56 | 4.6 | 0.64 | 137.1 | 2.71 | 300 | 6.35 | 4.2 | 0.43 | 0.088 | 12.8 | 79 | 1 |
| MODEL | FS | QTS | QMS | QES | VAS | EFF | PE | XMAX | RE | LE | SD | BI | MMS | FLUX |