

LOADED SOUND TEST SUMMARY SHEET

NAME OF DEVICE UNDER TEST (DUT)	Reciprocating Saw
TOOL OPERATOR	Edward Zechmann
COMPUTER OPERATOR	Won Joon Song
TEST DATE	2/10/2006
TEST DESCRIPTION	Sound Power Level Measurement
TEST LOCATION	UC anechoic lab
MANUFACTURER	DeWalt
MODEL	DW308M
SERIAL NUMBER	3923
MODE OF OPERATION	Normal
RUN NUMBER	1
YEAR MADE	
DIMENSIONS (inches)	Length 17, Width 6, Height 4
WEIGHT (lbs.)	7.2 lbs.
TECHNICAL SPECIFICATIONS	3/4 inch stroke length, 6 TPI # 4802
MOUNTING CONDITIONS	HELD BY OPERATOR, OAK CLAMPED TO WORK TABLE
LOADING CONDITIONS	FULL SPEED, LOADED WITH OAK BOARD, NO ORBITAL
K1 (dBA)	0
K2 (dBA)	1.49
TEMPERATURE (CELSIUS)	23 C
HUMIDITY %	14
BAROMETRIC PRESSURE ("Hg)	30.10 "Hg
TEST ENVIRONMENT	SEMI ANECHOIC, SEMI HEMISPHERICAL
TOOL TESTING STANDARD	ANSI S12.15-1992
MEASUREMENT STANDARD	ISO 3744:1994-05-01
MICROPHONE SET-UP	10-MICROPHONES
SURFACE RADIUS	2.00 meters
RATED POWER (WATTS)	1140
ACTUAL INPUT POWER (WATTS)	NA
VOLTAGE (VOLTS)	NA
CURRENT (AMPS)	NA
RATED RPM	2800
ACTUAL RPM	NA
SOUND POWER LEVEL (dBA)	108.4
SOUND POWER (WATTS) A-weighted	0.06840
SWLA - k2 (dBA)	106.9
SWLA - k2 (WATTS) A-weighted	0.04853
SOUND PRESSURE LEVEL (dBA) @ 2 meters	94.4
AT THE NOMINAL HEARING ZONE OF OPERATOR	
SOUND PRESSURE LEVEL (dBA)	99.3

Average Directivity Study

TEST DATE 2/10/2006
DUT Reciprocating Saw
Manufacturer DeWalt
Model Number DW308M
Serial Number 3923
Mode Normal
Run Number 1

A-weighted Sound Pressure Level

	Position1	Position2
Mic #	dBA	dBA
0	90.2	91.3
1	85.4	86.0
2	93.4	95.0
3	94.9	95.6
4	94.6	97.0
5	96.6	92.1
6	88.8	90.2
7	96.1	98.2
8	88.2	88.2
9	96.6	98.3
10	95.6	99.3
dB difference	11.3	12.3

A-weighted Directivity Index

Mic #	dBA	dBA
0	-2.3	-1.9
1	-7.1	-7.2
2	0.9	1.8
3	2.4	2.4
4	2.1	3.8
5	4.1	-1.1
6	-3.6	-3.0
7	3.6	5.0
8	-4.3	-5.0
9	4.1	5.1

SOUND DATA SHEET

PRODUCT INFORMATION

TEST DATE 2/10/2006
 DUT Reciprocating Saw
 Manufacturer DeWalt
 Model Number DW308M
 Serial Number 3923
 Mode of Operation Normal
 Run Number 1

TEST CONDITIONS

Actual Power (watt) NA
 Voltage (Volts) NA
 Current (Amps) NA
 Actual RPM NA
 Temperature (Deg. F) 23 C
 Humidity (%) 14
 Baro. Press. (inch of Hg) 30.10 "Hg

Measurement Data

Linear (unweighted) Position 1

Sound Power (dB)	109.44	108.98	108.61	108.54	108.79
Sound Power (Watts)	0.08786	0.07915	0.07255	0.07141	0.07560
Sound Pressure (dB)	95.44	94.98	94.60	94.54	94.78

Linear (unweighted) Position 2

Sound Power (dB)	109.04	109.03	109.73	109.44	109.88
Sound Power (Watts)	0.08020	0.08006	0.09399	0.08784	0.09738
Sound Pressure (dB)	95.04	95.03	95.73	95.43	95.88

A-weighted Position 1

Sound Power (dBA)	108.77	107.85	107.51	107.29	107.61
Sound Power (Watts)	0.07527	0.06090	0.05637	0.05356	0.05771
Sound Pressure (dBA)	94.76	93.84	93.51	93.29	93.61

A-weighted Position 2

Sound Power (dBA)	108.45	108.13	109.09	108.80	109.46
Sound Power (Watts)	0.06992	0.06498	0.08116	0.07590	0.08824
Sound Pressure (dBA)	94.44	94.13	95.09	94.80	95.45

Calculations

Average A-weighted Sound Data

Sound Power (dBA)	108.35
Sound Power (Watts)	0.0684
Sound Pressure (dBA)	94.35

Std. Deviation SWLA	0.7313
95 % Confidence Level	0.4191
Mean SPLA-k2	92.86

LOADED VIBRATIONS TEST SUMMARY SHEET

NAME OF DEVICE UNDER TEST (DUT)	Reciprocating Saw
TOOL OPERATOR (SUBJECT OF TEST)	Edward Zechmann
COMPUTER OPERATOR	Won Joon Song
TEST DATE	2/10/2006
TEST DESCRIPTION	Human Exposure to Vibrations
TEST LOCATION	UC ANECHOIC LAB
MANUFACTURER	DeWalt
MODEL	DW308M
SERIAL NUMBER	3923
MODE OF OPERATION	Normal
RUN NUMBER	1
YEAR MADE	
DIMENSIONS (inches)	Length 17, Width 6, Height 4
WEIGHT (lbs.)	7.2 lbs.
TECHNICAL SPECIFICATIONS	3/4 inch stroke length, 6 TPI # 4802
MOUNTING CONDITIONS	HELD BY OPERATOR, OAK CLAMPED TO WORK TABLE
LOADING CONDITIONS	FULL SPEED, LOADED WITH OAK BOARD, NO ORBITAL
TEMPERATURE (CELSIUS)	23 C
HUMIDITY %	14
BAROMETRIC PRESSURE ("Hg)	30.10 "Hg
TEST ENVIRONMENT	SEMI ANECHOIC, SEMI HEMISPHERICAL
MEASUREMENT STANDARD	ISO 5349-1 and ISO 5349-2
ACCELEROMETER SETUP	2 - ACCELEROMETERS
SETUP DIAGRAM	Accelerometer Location and Orientation Diagram for reciprocating saws 2
LOCATION ACCEL 1	right hand, rear handle, near electrical switch
ORIENTATION ACCEL 1	X toward bottom of tool, Y toward saw blade, Z toward right side of saw
LOCATION ACCEL 2	left hand, front grip, near saw blade
ORIENTATION ACCEL 2	X toward right side of saw, Y away from saw blade, Z toward bottom of tool
ADAPTER TYPE	Accel 1 side adapter, Accel 2 tall two stem adapter,
OPERATOR POSTURE	Standing and holding the tool with both hands, pushing tool into wood
HAND GRIP FORCE	Hands gripping tightly to control tool and press electrical switch
RATED POWER (WATTS)	1140
ACTUAL INPUT POWER (WATTS)	NA
VOLTAGE (VOLTS)	NA
CURRENT (AMPS)	NA
RATED RPM	2800
ACTUAL RPM	NA
Vibrations	
Accelerometer 1	
X, Y, Z arms m/s^2 weighted	10.8, 15.5, 11.3
X, Y, Z arms m/s^2 linear	93.4, 139.8, 63.8
Total arms m/s^2 (weighted, linear)	22.1, 179.9
Accelerometer 2	
X, Y, Z arms m/s^2 weighted	11.5, 15.6, 10.4
X, Y, Z arms m/s^2 linear	34.3, 74.9, 74.7
Total arms m/s^2 (weighted, linear)	22.3, 111.5

VIBRATIONS DATA SHEET

TEST DATE	2/10/2006		
DUT	Reciprocating Saw	Actual Power (watt)	NA
Manufacturer	DeWalt	Voltage (Volts)	NA
Model Number	DW308M	Current (Amps)	NA
Serial Number	3923	Actual RPM	NA
Mode of Operation	Normal	Temperature	23 C
Run Number	1	Humidity (%)	14

Accelerometer 1	arms weighted m/s ²									
Axis	1	2	3	4	5	6	7	8	9	10
X	7.6	10.2	9.6	10.1	10.8	10.7	13.1	11.8	12.4	11.6
Y	13.8	15.9	14.8	15.8	16.4	15.4	16.9	16.1	15.5	14.6
Z	11.1	9.6	10.6	11.3	10.0	11.5	11.8	11.9	12.5	13.1
Total arms	19.3	21.2	20.5	21.9	22.0	22.0	24.4	23.2	23.5	22.8

Accelerometer 1	arms linear m/s ²									
X	83.3	88.5	87.2	94.7	92.1	91.0	103.0	97.7	97.3	99.1
Y	121.1	127.2	133.2	148.3	140.9	146.6	153.0	146.4	141.3	140.4
Z	55.9	57.2	61.3	64.3	58.6	65.4	67.9	68.5	68.4	70.3
Total arms	157.3	165.1	170.6	187.3	178.2	184.5	196.5	188.8	184.7	185.7

Accelerometer 2	arms weighted m/s ²									
Axis	1	2	3	4	5	6	7	8	9	10
X	16.6	9.2	10.2	12.0	10.0	17.0	8.5	8.2	8.0	14.7
Y	16.5	17.1	15.5	16.7	17.2	14.3	14.6	15.3	15.2	14.0
Z	7.3	8.7	8.8	9.1	9.1	10.4	13.4	12.9	12.2	11.7
Total arms	24.5	21.3	20.5	22.5	21.9	24.5	21.6	21.7	21.1	23.4

Accelerometer 2	arms linear m/s ²									
X	47.7	30.7	32.1	34.4	30.5	49.6	26.3	25.9	24.0	41.4
Y	85.6	81.2	78.3	78.3	81.9	73.5	68.3	71.0	63.7	67.6
Z	91.7	74.2	78.5	71.9	73.5	74.8	70.5	73.6	65.9	72.5
Total arms	134.2	114.2	115.4	111.7	114.2	116.0	101.6	105.5	94.8	107.5

Average arms										
Weighted m/s ²	Accel 1	Accel 2	Linear	Accel 1	Accel 2					
X	10.8	11.5	X	93.4	34.3					
Y	15.5	15.6	Y	139.8	74.9					
Z	11.3	10.4	Z	63.8	74.7					
Total arms m/s ²	22.1	22.3		179.9	111.5					
Std. Deviation	1.5	1.4		12.1	10.5					
95 % Confidence Level	0.9	0.8		6.9	6.0					