LOADED SOUND TEST SUMMARY SHEET

NAME OF DEVICE UNDER TEST (DUT)	Circular Saw
TOOL OPERATOR	Edward Zechmann
COMPUTER OPERATOR	Automated Mode Xiangdong Zhu
TEST DATE	4/28/2006
TEST DESCRIPTION	Sound Power Level Measurement
TEST LOCATION	UC anechoic lab
MANUFACTURER	Milwaukee
MODEL	6460
SERIAL NUMBER	607D804110259
MODE OF OPERATION	Normal
RUN NUMBER	4
YEAR MADE	
DIMENSIONS (inches)	Length 15, Width 12, Height 11
WEIGHT (lbs.)	19.3 lbs.
TECHNICAL SPECIFICATIONS	10 1/4 inch saw blade, 28 Teeth, No. 48-40-4170
MOUNTING CONDITIONS	SLIDING ON BOARD, PUSHED BY OPERATOR
LOADING CONDITIONS	FULL SPEED, LOADED WITH OAK BOARD, NO GUIDE
K1 (dBA)	0
K2 (dBA)	1.44
TEMPERATURE (CELSIUS)	24 C
HUMIDITY %	25
BAROMETRIC PRESSURE ("Hg)	30.23 "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)	1800
ACTUAL INPUT POWER (WATTS)	NA
VOLTAGE (VOLTS)	NA
CURRENT (AMPS)	NA
RATED RPM	5200
ACTUAL RPM	NA
SOUND POWER LEVEL (dBA)	112.7
SOUND POWER (WATTS) A-weighted	0.18691
SWLA - k2 (dBA)	111.3
SWLA - k2 (WATTS) A-weighted	0.13428
SOUND PRESSURE LEVEL (dBA) @ 2 meters	98.7
AT THE NOMINAL HEARING ZONE OF OPERATOR	
SOUND PRESSURE LEVEL (dBA)	107.9

Average Directivity Study

TEST DATE	4/28/2006
DUT	Circular Saw
Manufacturer	Milwaukee
Model Number	6460
Serial Number	607D804110259
Mode	Normal
Run Number	4

A-weighted Sound Pressure Level

	Position1	Position2
Mic #	dBA	dBA
0	99.0	96.9
1	100.3	98.7
2	98.4	99.0
3	93.0	97.0
4	99.2	98.1
5	99.9	92.2
6	96.5	99.4
7	94.7	101.4
8	100.8	97.3
9	99.1	101.5
10	107.9	104.8
dB difference	7.8	9.4

A-weighted Directivity Index

Mic #	dBA	dBA
0	0.9	-1.2
1	2.2	0.6
2	0.3	0.8
3	-5.1	-1.2
4	1.1	0.0
5	1.8	-6.0
6	-1.6	1.2
7	-3.4	3.3
8	2.7	-0.8
9	1.0	3.4

SOUND DATA SHEET

PRODUCT INFORMATION		TEST CONDITIONS	
TEST DATE	4/28/2006		
DUT	Circular Saw	Actual Power (watt)	NA
Manufacturer	Milwaukee	Voltage (Volts)	NA
Model Number	6460	Current (Amps)	NA
Serial Number	607D804110259	Actual RPM	NA
Mode of Operation	Normal	Temperature (Deg. F)	24 C
Run Number	4	Humidity (%)	25
		Baro. Press. (inch of Hg)	30.23 "Hg

Measurement Data

Linear (unweighted) Position 1					
Sound Power (dB)	113.21	111.85	113.60	113.38	112.40
Sound Power (Watts)	0.20935	0.15302	0.22921	0.21773	0.17387
Sound Pressure (dB)	99.21	97.85	99.60	99.38	98.40

Linear (unweighted) Position 2					
Sound Power (dB)	113.87	112.55	112.93	112.77	112.08
Sound Power (Watts)	0.24376	0.17994	0.19636	0.18917	0.16151
Sound Pressure (dB)	99.87	98.55	98.93	98.77	98.08

A-weighted Position 1					
Sound Power (dBA)	112.92	111.59	113.27	113.13	112.11
Sound Power (Watts)	0.19608	0.14412	0.21235	0.20543	0.16254
Sound Pressure (dBA)	98.92	97.58	99.27	99.12	98.11

A-weighted Position 2					
Sound Power (dBA)	113.65	112.51	112.79	112.63	112.17
Sound Power (Watts)	0.23191	0.17835	0.19030	0.18330	0.16468
Sound Pressure (dBA)	99.65	98.51	98.79	98.63	98.16

Calculations

Average A-weighted Sound Data	
Sound Power (dBA)	112.72
Sound Power (Watts)	0.1869
Sound Pressure (dBA)	98.71
Std. Deviation SWLA	0.6130
95 % Confidence Level	0.3512
Mean SPLA-k2	97.27

LOADED VIBRATIONS TEST SUMMARY SHEET

NAME OF DEVICE UNDER TEST (DUT)	Circular Saw
TOOL OPERATOR (SUBJECT OF TEST)	Edward Zechmann
COMPUTER OPERATOR	Automated Mode Xiangdong Zhu
TEST DATE	4/28/2006
TEST DESCRIPTION	Human Exposure to Vibrations
TEST LOCATION	UC ANECHOIC LAB
MANUFACTURER	Milwaukee
MODEL	6460
SERIAL NUMBER	607D804110259
MODE OF OPERATION	Normal
RUN NUMBER	4
YEAR MADE	
DIMENSIONS (inches)	Length 15, Width 12, Height 11
WEIGHT (lbs.)	19.3 lbs.
TECHNICAL SPECIFICATIONS	10 1/4 inch saw blade, 28 Teeth, No. 48-40-4170
MOUNTING CONDITIONS	SLIDING ON BOARD, PUSHED BY OPERATOR
LOADING CONDITIONS	FULL SPEED, LOADED WITH OAK BOARD, NO GUIDE
TEMPERATURE (CELSIUS)	24 C
HUMIDITY %	25
BAROMETRIC PRESSURE ("Hg)	30.23 "Hg
TEST ENVIRONMENT	SEMI ANECHOIC, SEMI HEMISPHERICAL
MEASUREMENT STANDARD	ISO 5349-1and ISO 5349-2
ACCELEROMETER SETUP	2 - ACCELEROMETERS
SETUP DIAGRAM	Accelerometer Location and Orientation Diagram for Circular Saws 2
LOCATION ACCEL 1	right hand, trigger handle near electrical switch
ORIENTATION ACCEL 1	X see diagram, Y see diagram, Z toward blade housing
LOCATION ACCEL 2	left hand, front handle knob
ORIENTATION ACCEL 2	X toward bottom of tool, Y away from blade housing, Z toward front handle
ADAPTER TYPE	Accel 1-side adapter, Accel 2-tall two stem adapter
OPERATOR PRESSURE	Standing over tool, both hands gripping and sliding tool through the cut
HAND GRIP FORCE	Hands gripping tightly to control tool and pressing electrical switch
RATED POWER (WATTS)	1800
ACTUAL INPUT POWER (WATTS)	NA
VOLTAGE (VOLTS)	NA
CURRENT (AMPS)	NA
RATED RPM	5200
ACTUAL RPM	NA
Vibrations	
Accelerometer 1	
X, Y, Z arms m/s^2 weighted	5.1, 3.7, 2.4
X, Y, Z arms m/s^2 linear	72.7, 66.8, 57.6
Total arms m/s^2 (weighted, linear)	6.8, 114.4
Accelerometer 2	
X, Y, Z arms m/s^2 weighted	3.2, 1.8, 1.8
X, Y, Z arms m/s^2 linear	22.6, 24, 50.3
Total arms m/s^2 (weighted, linear)	4.2, 60.5

VIBRATIONS DATA SHEET

TEST DATE	4/28/2006		
DUT	Circular Saw	Actual Power (watt)	NA
Manufacturer	Milwaukee	Voltage (Volts)	NA
Model Number	6460	Current (Amps)	NA
Serial Number	607D804110259	Actual RPM	NA
Mode of Operation	Normal	Temperature	24 C
Run Number	4	Humidity (%)	25

Accelerometer 1	arms weighted m/s^2									
Axis	1	2	3	4	5	6	7	8	9	10
X	5.6	4.5	6.4	6.6	5.1	4.6	4.3	4.5	4.9	4.4
Y	3.7	3.1	4.6	4.6	3.2	3.7	3.4	3.5	4.0	3.6
Z	1.8	1.7	2.5	2.4	1.7	2.6	2.8	2.8	2.7	2.7
Total arms	6.9	5.7	8.3	8.4	6.2	6.4	6.2	6.3	6.9	6.3
Accelerometer 1	arms linear m/s^2									
X	78.5	67.2	90.0	90.6	70.4	68.2	60.5	65.7	74.2	62.1
Y	74.1	69.7	74.9	79.7	63.8	59.2	55.6	61.9	69.3	60.1
Z	60.3	50.8	70.0	70.7	54.8	57.8	50.9	52.1	54.7	53.9
Total arms	123.6	109.3	136.4	139.8	109.6	107.2	96.7	104.2	115.3	101.9

Accelerometer 2	arms weighted m/s^2									
Axis	1	2	3	4	5	6	7	8	9	10
X	3.5	1.6	3.0	1.7	2.0	5.1	5.2	2.3	4.3	3.1
Y	1.9	1.2	2.1	1.6	2.3	1.6	2.1	1.5	1.9	1.4
Z	2.0	1.5	2.2	1.9	1.7	1.6	1.8	2.0	1.9	1.7
Total arms	4.5	2.5	4.3	3.0	3.5	5.6	5.9	3.4	5.1	3.8
Accelerometer 2	arms linear m/s^2									
X	27.9	12.4	25.1	16.8	18.3	36.2	31.1	15.3	27.0	16.3
Y	29.0	15.1	31.5	18.4	23.4	26.2	23.5	21.6	25.1	26.2
Z	54.7	36.4	61.3	52.6	50.6	52.6	46.7	46.7	52.4	49.4
Total arms	67.9	41.3	73.3	58.2	58.7	69.0	60.8	53.7	64.0	58.2

Average arms

Weighted m/s^2	Accel 1	Accel 2	Linear	Accel 1	Accel 2
X	5.1	3.2	X	72.7	22.6
Y	3.7	1.8	Y	66.8	24.0
Z	2.4	1.8	Z	57.6	50.3
Total arms m/s^2	6.8	4.2		114.4	60.5
Std. Deviation	0.9	1.1		14.5	9.0
95 % Confidence Level	0.5	0.6		8.3	5.2