

LOADED SOUND TEST SUMMARY SHEET

NAME OF DEVICE UNDER TEST (DUT)
TOOL OPERATOR
COMPUTER OPERATOR
TEST DATE

Circular Saw
Edward Zechmann
Automated Mode, Xiangdong Zhu
4/27/2006

TEST DESCRIPTION
TEST LOCATION
MANUFACTURER
MODEL
SERIAL NUMBER
MODE OF OPERATION
RUN NUMBER
YEAR MADE

Sound Power Level Measurement
UC anechoic lab
Skil
5600
H29125
Normal
2

DIMENSIONS (inches)
WEIGHT (lbs.)
TECHNICAL SPECIFICATIONS
MOUNTING CONDITIONS
LOADING CONDITIONS
K1 (dBA)
K2 (dBA)
TEMPERATURE (CELSIUS)
HUMIDITY %
BAROMETRIC PRESSURE ("Hg)

Length 11, Width 9, Height 9
10.6 lbs.
7 1/4 inch saw blade, 18 Teeth
SLIDING ON BOARD, PUSHED BY OPERATOR
FULL SPEED, LOADED WITH OAK BOARD, NO GUIDE
0
1.44
24 C
25
30.23 "Hg

TEST ENVIRONMENT
TOOL TESTING STANDARD
MEASUREMENT STANDARD
MICROPHONE SET-UP
SURFACE RADIUS

SEMI ANECHOIC, SEMI HEMISPHERICAL
ANSI S12.15-1992
ISO 3744:1994-05-01
10-MICROPHONES
2.00 meters

RATED POWER (WATTS)
ACTUAL INPUT POWER (WATTS)
VOLTAGE (VOLTS)
CURRENT (AMPS)
RATED RPM
ACTUAL RPM

1560
NA
NA
NA
4600
NA

SOUND POWER LEVEL (dBA)
SOUND POWER (WATTS) A-weighted
SWLA - k2 (dBA)
SWLA - k2 (WATTS) A-weighted
SOUND PRESSURE LEVEL (dBA) @ 2 meters

113.3
0.21489
111.9
0.15417
99.3

AT THE NOMINAL HEARING ZONE OF OPERATOR
SOUND PRESSURE LEVEL (dBA)

109.7

Average Directivity Study

TEST DATE 4/27/2006
DUT Circular Saw
Manufacturer Skil
Model Number 5600
Serial Number H29125
Mode Normal
Run Number 2

A-weighted Sound Pressure Level

	Position1	Position2
Mic #	dBA	dBA
0	99.4	98.3
1	100.0	100.8
2	95.9	99.6
3	93.4	97.5
4	99.7	99.4
5	97.4	92.5
6	96.0	100.6
7	94.4	103.5
8	100.1	98.7
9	98.7	103.4
10	109.7	106.6
dB difference	6.7	10.9

A-weighted Directivity Index

Mic #	dBA	dBA
0	1.9	-1.1
1	2.5	1.4
2	-1.6	0.2
3	-4.1	-1.9
4	2.2	0.0
5	-0.1	-6.9
6	-1.5	1.2
7	-3.1	4.0
8	2.6	-0.7
9	1.2	3.9

SOUND DATA SHEET

PRODUCT INFORMATION

TEST DATE 4/27/2006
DUT Circular Saw
Manufacturer Skil
Model Number 5600
Serial Number H29125
Mode of Operation Normal
Run Number 2

TEST CONDITIONS

Actual Power (watt) NA
Voltage (Volts) NA
Current (Amps) NA
Actual RPM NA
Temperature (Deg. F) 24 C
Humidity (%) 25
Baro. Press. (inch of Hg) 30.23 "Hg

Measurement Data

Linear (unweighted) Position 1

Sound Power (dB)	112.20	112.97	112.35	112.62	112.35
Sound Power (Watts)	0.16593	0.19833	0.17162	0.18282	0.17176
Sound Pressure (dB)	98.20	98.97	98.34	98.62	98.35

Linear (unweighted) Position 2

Sound Power (dB)	114.07	114.25	115.05	114.70	114.41
Sound Power (Watts)	0.25524	0.26630	0.31988	0.29510	0.27614
Sound Pressure (dB)	100.07	100.25	101.05	100.70	100.41

A-weighted Position 1

Sound Power (dBA)	111.74	112.61	111.87	112.19	111.86
Sound Power (Watts)	0.14937	0.18238	0.15389	0.16572	0.15335
Sound Pressure (dBA)	97.74	98.61	97.87	98.19	97.85

A-weighted Position 2

Sound Power (dBA)	113.88	113.99	114.82	114.51	114.20
Sound Power (Watts)	0.24429	0.25063	0.30369	0.28227	0.26333
Sound Pressure (dBA)	99.88	99.99	100.82	100.50	100.20

Calculations

Average A-weighted Sound Data

Sound Power (dBA)	113.32
Sound Power (Watts)	0.2149
Sound Pressure (dBA)	99.32

Std. Deviation SWLA	1.2240
95 % Confidence Level	0.7013
Mean SPLA-k2	97.88

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	4/27/2006
TEST DESCRIPTION	Human Exposure to Vibrations
TEST LOCATION	UC ANECHOIC LAB
MANUFACTURER	Skil
MODEL	5600
SERIAL NUMBER	H29125
MODE OF OPERATION	Normal
RUN NUMBER	2
YEAR MADE	
DIMENSIONS (inches)	Length 11, Width 9, Height 9
WEIGHT (lbs.)	10.6 lbs.
TECHNICAL SPECIFICATIONS	7 1/4 inch saw blade, 18 Teeth
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 5349-1 and 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 POSTURE	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)	1560
ACTUAL INPUT POWER (WATTS)	NA
VOLTAGE (VOLTS)	NA
CURRENT (AMPS)	NA
RATED RPM	4600
ACTUAL RPM	NA
Vibrations	
Accelerometer 1	
X, Y, Z arms m/s ² weighted	2.2, 2.3, 2.3
X, Y, Z arms m/s ² linear	20.8, 32.3, 20.8
Total arms m/s ² (weighted, linear)	4, 43.7
Accelerometer 2	
X, Y, Z arms m/s ² weighted	4, 3.1, 2.1
X, Y, Z arms m/s ² linear	14.1, 13.7, 29.1
Total arms m/s ² (weighted, linear)	5.6, 35.3

VIBRATIONS DATA SHEET

TEST DATE	4/27/2006		
DUT	Circular Saw	Actual Power (watt)	NA
Manufacturer	Skil	Voltage (Volts)	NA
Model Number	5600	Current (Amps)	NA
Serial Number	H29125	Actual RPM	NA
Mode of Operation	Normal	Temperature	24 C
Run Number	2	Humidity (%)	25

Accelerometer 1	arms weighted m/s ²									
Axis	1	2	3	4	5	6	7	8	9	10
X	2.0	2.0	1.8	2.5	2.2	3.1	1.8	2.8	1.9	1.8
Y	2.0	2.3	2.0	2.4	2.3	2.5	1.8	2.9	2.5	2.6
Z	2.6	2.3	1.8	2.5	2.1	2.5	1.8	2.8	2.5	2.2
Total arms	3.8	3.8	3.2	4.3	3.8	4.7	3.1	4.9	4.0	3.9

Accelerometer 1	arms linear m/s ²									
X	20.5	21.0	18.4	21.3	20.9	21.4	18.9	26.4	19.2	19.5
Y	28.2	36.4	26.4	35.2	39.0	35.1	23.7	34.0	30.7	34.0
Z	21.6	22.4	19.2	22.3	23.2	20.4	17.6	20.9	20.8	20.0
Total arms	41.0	47.6	37.5	46.8	49.9	45.9	35.0	47.8	41.7	43.9

Accelerometer 2	arms weighted m/s ²									
Axis	1	2	3	4	5	6	7	8	9	10
X	3.1	4.5	3.1	2.8	2.9	4.0	2.8	7.2	3.6	6.2
Y	3.3	3.3	2.3	2.4	3.3	5.3	1.9	3.1	3.4	2.5
Z	1.8	2.0	2.0	2.3	2.0	2.5	1.6	2.5	2.3	2.0
Total arms	4.9	5.9	4.4	4.3	4.8	7.1	3.7	8.2	5.4	7.0

Accelerometer 2	arms linear m/s ²									
X	13.2	15.7	11.8	10.0	11.1	13.2	9.2	22.7	15.0	18.6
Y	14.6	13.8	12.6	9.7	12.8	21.3	9.0	13.8	17.4	12.1
Z	29.4	31.4	29.9	28.0	31.8	28.5	21.4	32.9	33.0	24.6
Total arms	35.3	37.8	34.5	31.3	36.0	37.9	25.0	42.3	40.2	33.1

Average arms						
Weighted m/s ²	Accel 1	Accel 2	Linear	Accel 1	Accel 2	
X	2.2	4.0	X	20.8	14.1	
Y	2.3	3.1	Y	32.3	13.7	
Z	2.3	2.1	Z	20.8	29.1	
Total arms m/s ²	4.0	5.6		43.7	35.3	
Std. Deviation	0.6	1.4		4.8	4.9	
95 % Confidence Level	0.3	0.8		2.8	2.8	