UNLOADED SOUND TEST SUMMARY SHEET

NAME OF DEVICE UNDER TEST (DUT)	Circular Saw
TOOL OPERATOR	Unloaded
COMPUTER OPERATOR	Brian Kim, Ed Zechmann
TEST DATE	6/4/2009
TEST DESCRIPTION	Sound Power Level Measurement
TEST LOCATION	UC anechoic lab
MANUFACTURER	Skil
MODEL	5680
SERIAL NUMBER	89229
MODE OF OPERATION	FULL SPEED, UNLOADED
RUN NUMBER	1
YEAR MADE	2008
DIMENSIONS (inches)	Length 11.0", Width 9.0", Height 7.0"
WEIGHT (lbs.)	10.6
TECHNICAL SPECIFICATIONS	7 1/4 inch saw blade
MOUNTING CONDITIONS	free-free, bungee cords
LOADING CONDITIONS	Full speed no load
K1 (dBA)	0
K2 (dBA)	0.18
TEMPERATURE (CELSIUS)	24
HUMIDITY %	41
BAROMETRIC PRESSURE ("Hg)	30.00
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)	1680
ACTUAL INPUT POWER (WATTS)	750
VOLTAGE (VOLTS)	116
CURRENT (AMPS)	6.8
RATED RPM	5300
ACTUAL RPM	4879
SOUND POWER LEVEL (dBA)	104.1
SOUND POWER (WATTS) A-weighted	0.02548
SWLA - k2 (dBA)	103.9
SWLA - k2 (WATTS) A-weighted	0.02443
SOUND PRESSURE LEVEL (dBA) @ 2 meters	90.1
AT THE NOMINAL HEARING ZONE OF OPERATOR	
SOUND PRESSURE LEVEL (dBA)	97.7

Average Directivity Study

TEST DATE	6/4/2009
DUT	Circular Saw
Manufacturer	Skil
Model Number	5680
Serial Number	89229
Mode	FULL SPEED, UNLOADED
Run Number	1

A-weighted Sound Pressure Level

	Position1
Mic #	dBA
0	88.9
1	89.3
2	91.2
3	91.1
4	87.3
5	87.8
6	90.4
7	90.8
8	88.9
9	92.4
10	97.7
dB difference	5.1

A-weighted Directivity Index

Mic #	dBA
0	-0.9
1	-0.5
2	1.4
3	1.3
4	-2.5
5	-2.0
6	0.6
7	1.0
8	-0.9
9	2.6

SOUND DATA SHEET

PRODUCT INFORMATION		TEST CONDITIONS	
TEST DATE	6/4/2009		
DUT	Circular Saw	Actual Power (watt)	750
Manufacturer	Skil	Voltage (Volts)	116
Model Number	5680	Current (Amps)	6.8
Serial Number	89229	Actual RPM	4879
Mode of Operation	FULL SPEED, UNLOADED	Temperature (Deg. F)	24
Run Number	1	Humidity (%)	41
		Baro. Press. (inch of Hg)	30

Measurement Data

Linear (unweighted) Position 1

Sound Power (dB)	104.01	103.99	104.02	103.94	103.94
Sound Power (Watts)	0.02518	0.02507	0.02523	0.02479	0.02480
Sound Pressure (dB)	90.01	89.99	90.02	89.94	89.94

A-weighted Position 1

Sound Power (dBA)	104.10	104.08	104.09	104.01	104.03
Sound Power (Watts)	0.02573	0.02557	0.02565	0.02516	0.02529
Sound Pressure (dBA)	90.10	90.08	90.09	90.01	90.03

Calculations

Average A-weighted Sound Data

Sound Power (dBA)	104.06
Sound Power (Watts)	0.0255
Sound Pressure (dBA)	90.06
Std. Deviation SWLA	0.0417
95 % Confidence Level	0.0517
Mean SPLA-k2	89.88

UNLOADED VIBRATIONS TEST SUMMARY SHEET

NAME OF DEVICE UNDER TEST (DUT)	Circular Saw
TOOL OPERATOR (SUBJECT OF TEST)	Unloaded
COMPUTER OPERATOR	Brian Kim, Ed Zechmann
TEST DATE	6/4/2009
TEST DESCRIPTION	Human Exposure to Vibrations
TEST LOCATION	UC ANECHOIC LAB
MANUFACTURER	Skil
MODEL	5680
SERIAL NUMBER	89229
MODE OF OPERATION	FULL SPEED, UNLOADED
RUN NUMBER	1
YEAR MADE	2008
DIMENSIONS (inches)	Length 11.0", Width 9.0", Height 7.0"
WEIGHT (lbs.)	10.6
TECHNICAL SPECIFICATIONS	7 1/4 inch saw blade
MOUNTING CONDITIONS	free-free, bungee cords
LOADING CONDITIONS	Full speed no load
TEMPERATURE (CELSIUS)	24
HUMIDITY %	41
BAROMETRIC PRESSURE ("Hg)	30
TEST ENVIRONMENT	SEMI ANECHOIC, SEMI HEMISPHERICAL
MEASUREMENT STANDARD	ISO 5349-1and ISO 5349-2
ACCELEROMETER SETUP	2 - ACCELEROMETERS
SETUP DIAGRAM	circular_saw_13_sv_accel_setup.doc
LOCATION ACCEL 1	right hand, right handle, near electrical switch
ORIENTATION ACCEL 1	X toward blade housing, Y toward top of tool, Z toward right of tool
LOCATION ACCEL 2	left hand, left grip, on top of tool
ORIENTATION ACCEL 2	X toward left side of tool, Y away from blade housing, Z toward top of tool
ADAPTER TYPE	Accel 1-side adapter, Accel 2-side adapter
OPERATOR PRESSURE	-
HAND GRIP FORCE	Band clamp over rubber mechanical low-pass filter
RATED POWER (WATTS)	1680
ACTUAL INPUT POWER (WATTS)	750
VOLTAGE (VOLTS)	116
CURRENT (AMPS)	6.8
RATED RPM	5300
ACTUAL RPM	4879
Vibrations	
Accelerometer 1	
X, Y, Z arms m/s^2 weighted	1.4, 1.1, 2
X, Y, Z arms m/s^2 linear	36.5, 14.4, 55.4
Total arms m/s^2 (weighted, linear)	2.7, 67.9
Accelerometer 2	
X, Y, Z arms m/s^2 weighted	1.4, 1.1, 0.7
X, Y, Z arms m/s^2 linear	26.4, 21.8, 21.8
Total arms m/s^2 (weighted, linear)	2, 40.6

VIBRATIONS DATA SHEET

TEST DATE	6/4/2009		
DUT	Circular Saw	Actual Power (watt)	750
Manufacturer	Skil	Voltage (Volts)	116
Model Number	5680	Current (Amps)	6.8
Serial Number	89229	Actual RPM	4879
Mode of Operation	FULL SPEED, UNLOADED	Temperature	24
Run Number	1	Humidity (%)	41

Accelerometer 1	arms weighted m/s^2				
Axis	1	2	3	4	5
X	1.4	1.4	1.2	1.5	1.4
Y	1.0	1.0	1.2	1.1	1.1
Z	1.9	1.9	2.0	2.0	2.1
Total arms	2.5	2.6	2.6	2.7	2.8
Accelerometer 1	arms linear m/s^2				
X	36.8	37.3	32.0	39.0	37.5
Y	13.2	13.4	16.8	13.8	14.9
Z	51.7	54.2	56.3	55.7	59.1
Total arms	64.8	67.2	66.9	69.4	71.5

Accelerometer 2	arms weighted m/s^2				
Axis	1	2	3	4	5
X	1.3	1.4	1.4	1.4	1.4
Y	1.2	1.2	1.1	1.2	1.1
Z	0.8	0.8	0.7	0.7	0.7
Total arms	1.9	2.0	2.0	2.0	2.0
Accelerometer 2	arms linear m/s^2				
X	24.9	25.9	26.7	27.0	27.4
Y	23.2	22.8	20.0	22.7	20.4
Z	23.4	23.0	19.4	23.0	20.2
Total arms	41.3	41.5	38.5	42.1	39.7

Average arms

Weighted m/s^2	Accel 1	Accel 2	Linear	Accel 1	Accel 2
X	1.4	1.4	X	36.5	26.4
Y	1.1	1.1	Y	14.4	21.8
Z	2.0	0.7	Z	55.4	21.8
Total arms m/s^2	2.7	2.0		67.9	40.6
Std. Deviation	0.1	0.0		2.6	1.5
95 % Confidence Level	0.1	0.0		3.2	1.8