# TEST REPORT

| | | |
|---|---|---|
| **Report Reference No.** | : 6061340.51QS | |
| Tested by (name + signature) | : Jiawei Chen | Jiawei Chen |
| Approved by (name + signature) | : David Yang | David Yang |
| Date of testing | : 2019-08-19 | |
| Date of issue | : 2019-08-20 | |
| Pages | : 9 pages | |
| Contents / enclosures | : N/A | |
| **Testing Laboratory** | : DEKRA Testing and Certification (Shanghai) Ltd. | |
| Testing location / address | : No.1050, Xingxian Road, Shanghai, China | |
| **Applicant** | : LEE YEONG INDUSTRIAL CO., Ltd. | |
| Address | : No.2, Kejia Rd. Douliu City 64057 YUNLIN COUNTY TAIWAN | |
| **Test specification:** | | |
| Standards | : EN 60745-1:2009+A11:2010; EN 60745-2-22:2011+A11:2013 | |
| Test procedure | : ☐ Basic safety test ☐ Screen test ☐ Quick scan<br>☐ Basic EMC test ☐ Flash test ☐ IP 54<br>☒ Noise test ☒ Vibration test | |
| **Test object description** | : Ring Saw | |
| Trade Mark | : AGP | |
| Manufacturer | : LEE YEONG INDUSTRIAL CO., Ltd. | |
| Address | : No.2, Kejia Rd. Douliu City 64057 YUNLIN COUNTY TAIWAN | |
| Model/Type reference | : R16; QRS400 | |
| Ratings | : 480 V; 3~ (power supply to high frequency inverter) | |
| **Number of test objects** | : 1 pc for noise and vibration measurement | |

**Conclusion:**

- The following noise and vibration values (minimum) shall be declared on instruction manual:

**Declared dual-number noise emission values in accordance with ISO 4871**

| | |
|---|---|
| Measured A-weighted sound power level, $L_{WA}$(ref.1pW),in decibels | **109,5 dB(A)** |
| Uncertainty, $K_{WA}$,in decibels | **3 dB(A)** |
| Measured A-weighted emission sound pressure level at the work station, $L_{pA}$(ref.20μPa),in decibels | **98,5 dB(A)** |
| Uncertainty, $K_{pA}$,in decibels | **3 dB(A)** |

**Vibration total values (triaxial vector sum) determined according to EN60745**

| | cutting concrete slab | | No load with saw blade | | No load without saw blade | |
|---|---|---|---|---|---|---|
| | **Main** | **Auxiliary** | **Main** | **Auxiliary** | **Main** | **Auxiliary** |
| Vibration emission Value $a_h$ | **5,5 m/s²** | **5,1 m/s²** | **4,9 m/s²** | **5,4 m/s²** | **1,6 m/s²** | **1,9 m/s²** |
| Uncertainty $K$ | **1,5 m/s²** | **1,5 m/s²** | **1,5 m/s²** | **1,5 m/s²** | **1,5 m/s²** | **1,5 m/s²** |

**Summary of testing:**
R16; QRS400 are identical, only the types are different.
Vibration for no-load condition with and without cutting means is not required by EN 60745-2-22. It's only according to client's special requirement.

**Location of testing and Environmental condition:**

| | |
|---|---|
| Location: | Noise lab of DEKRA Testing and Certification (Shanghai) Ltd. |
| Address: | No. 1050, Xingxian Road, Shanghai, China |
| Background noise: | 31,8 dB(A) |
| Dimension: | 3,95m*2,8m*2,4m |
| Air temperature: | 30℃ |
| Relative humidity: | 36% |
| Barometric pressure: | 101,1kPa |
| Wind velocity: | 0m/s |

**Test equipment list:**

| Equipment | Type | Serial number | Manufacturer | Calibration due date |
|---|---|---|---|---|
| Soundmeter | 2250 | 3025106 | Brüel & Kjær | 2020/02/24 |
| Pulse | 3050-A-060 | 3050-112000 | Brüel & Kjær | 2020/02/27 |
| Calibrator | 4231 | 3022391 | Brüel & Kjær | 2020/02/24 |
| Accelerometer | 4535B001 | 32675 | Brüel & Kjær | 2020/02/27 |
| Accelerometer | 4535B001 | 32674 | Brüel & Kjær | 2020/02/27 |

## Part 1 Noise test

### 1.1 Test standards

EN 60745-1:2009+A11:2010; EN 60745-2-22:2011+A11:2013

### 1.2 Description of the hand-held tool

Product: Ring Saw

Model: R16

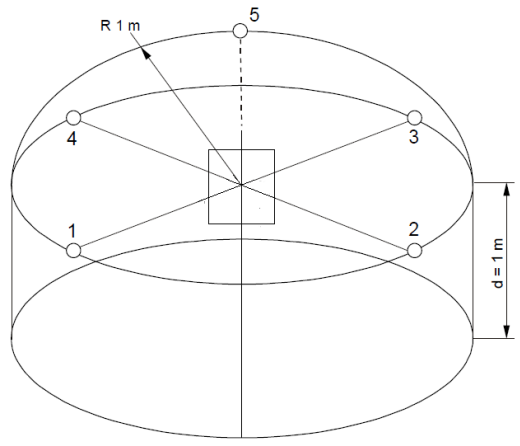
Technical data: 480 V; 3~

### 1.3 Description of mounting and operation conditions

Mounting: The machine was held by the operator.

Operating conditions: Cutting concrete slab.

### 1.4 Microphone positions:



**1.5 Measurement data**

| cycle \ point | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 98,8 | 99,1 | 99,5 | 97,1 | 96,4 |
| 2 | 98,7 | 99,4 | 99,5 | 97,3 | 96,3 |
| 3 | 99,0 | 99,0 | 99,7 | 96,8 | 96,5 |
| 4 | 98,5 | 99,3 | 99,3 | 96,9 | 96,4 |
| 5 | 98,6 | 99,3 | 99,4 | 97,0 | 96,5 |

**1.6 Test result**

**sound power level:** $L_{WA} = 109,3dB(A)$

**Emission sound pressure level:** $L_{pA} = 98,3dB(A)$

**Part 2 Vibration test**

**2.1 Mode "Cutting concrete slab"**

**2.1.1 Test standards**

EN 60745-1:2009+A11:2010; EN 60745-2-22:2011+A11:2013

**2.1.2 Description of the hand-held tool**

Product: Ring Saw

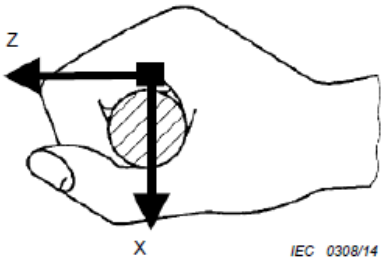
Model: R16

Technical data: 480 V; 3~

**2.1.3 Description of operating and testing conditions**

Testing conditions: Cutting concrete slab.

**2.1.4 Measurement direction**




**2.1.5 Measurement data**

**Main handle:**

| **Operator A** | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,391 | 3,837 | 2,678 | 5,254 |
| 2 | 2,131 | 4,663 | 2,028 | 5,514 |
| 3 | 2,248 | 4,190 | 2,493 | 5,369 |
| 4 | 2,581 | 4,337 | 1,716 | 5,330 |
| 5 | 2,080 | 4,191 | 2,690 | 5,397 |
| the arithmetic mean total vibration | | | | 5,373 |

| Operator B | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,076 | 4,384 | 2,538 | 5,474 |
| 2 | 2,394 | 4,115 | 2,249 | 5,265 |
| 3 | 2,442 | 4,141 | 1,767 | 5,122 |
| 4 | 2,409 | 4,387 | 2,577 | 5,630 |
| 5 | 2,687 | 4,479 | 2,054 | 5,613 |
| the arithmetic mean total vibration | | | | 5,421 |

| Operator C | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,661 | 4,769 | 2,037 | 5,829 |
| 2 | 2,224 | 4,883 | 2,671 | 5,994 |
| 3 | 2,072 | 4,385 | 1,953 | 5,228 |
| 4 | 2,364 | 3,922 | 1,980 | 4,989 |
| 5 | 2,630 | 4,655 | 2,538 | 5,919 |
| the arithmetic mean total vibration | | | | 5,592 |

**Auxiliary handle:**

| Operator A | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,014 | 1,346 | 4,620 | 5,216 |
| 2 | 2,636 | 1,317 | 4,522 | 5,398 |
| 3 | 2,214 | 1,433 | 4,373 | 5,107 |
| 4 | 2,706 | 1,309 | 4,258 | 5,212 |
| 5 | 2,142 | 1,391 | 4,086 | 4,818 |
| the arithmetic mean total vibration | | | | 5,150 |

| Operator B | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,046 | 1,430 | 4,346 | 5,012 |
| 2 | 2,540 | 1,391 | 4,282 | 5,169 |
| 3 | 2,691 | 1,324 | 4,583 | 5,477 |
| 4 | 2,496 | 1,489 | 4,487 | 5,346 |
| 5 | 2,538 | 1,347 | 4,490 | 5,331 |
| the arithmetic mean total vibration | | | | 5,267 |

| Operator C | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,280 | 1,394 | 4,152 | 4,938 |
| 2 | 2,291 | 1,211 | 4,187 | 4,924 |
| 3 | 2,135 | 1,006 | 4,039 | 4,678 |
| 4 | 2,016 | 1,074 | 4,394 | 4,952 |
| 5 | 2,528 | 1,064 | 4,260 | 5,067 |
| the arithmetic mean total vibration | | | | 4,912 |

**2.1.6 Test result**

**Main handle: The average vibration total value $a_h$: 5,462 $m/s^2$**

**Auxiliary handle: The average vibration total value $a_h$: 5,110 $m/s^2$**

**2.2 Mode "No load with saw blade"**

**2.2.1 Test standards**

EN 60745-1:2009+A11:2010; EN 60745-2-22:2011+A11:2013

**2.2.2 Description of the hand-held tool**

Product: Ring Saw

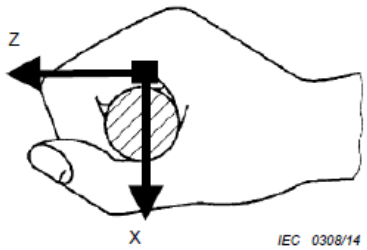
Model: R16

Technical data: 480 V; 3~

**2.2.3 Description of operating and testing conditions**

Testing conditions: No load/max.speed

**2.2.4 Measurement direction**




**2.2.5 Measurement data**

**Main handle:**

| Operator A | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,191 | 4,290 | 1,815 | 5,148 |
| 2 | 1,997 | 4,380 | 1,901 | 5,176 |
| 3 | 2,050 | 3,507 | 2,048 | 4,549 |
| 4 | 2,390 | 3,803 | 1,843 | 4,855 |
| 5 | 2,541 | 3,729 | 1,735 | 4,834 |
| the arithmetic mean total vibration | | | | 4,912 |

| Operator B | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,115 | 3,892 | 1,990 | 4,856 |
| 2 | 2,208 | 3,569 | 1,660 | 4,513 |
| 3 | 2,246 | 3,527 | 1,689 | 4,510 |
| 4 | 2,109 | 4,169 | 1,651 | 4,956 |
| 5 | 2,331 | 4,127 | 1,799 | 5,070 |
| the arithmetic mean total vibration | | | | 4,781 |

| Operator C | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,480 | 4,210 | 1,916 | 5,248 |
| 2 | 2,104 | 3,747 | 1,768 | 4,647 |
| 3 | 1,906 | 4,390 | 1,628 | 5,055 |
| 4 | 2,353 | 3,931 | 1,947 | 4,978 |
| 5 | 1,920 | 3,752 | 1,875 | 4,613 |
| the arithmetic mean total vibration | | | | 4,908 |

**Auxiliary handle:**

| Operator A | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,442 | 1,651 | 4,441 | 5,331 |
| 2 | 2,691 | 1,390 | 4,905 | 5,765 |
| 3 | 2,558 | 1,857 | 4,395 | 5,413 |
| 4 | 2,142 | 1,659 | 4,331 | 5,109 |
| 5 | 2,573 | 1,299 | 4,740 | 5,548 |
| the arithmetic mean total vibration | | | | 5,433 |

| Operator B | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,294 | 1,639 | 4,322 | 5,160 |
| 2 | 2,593 | 1,665 | 4,552 | 5,497 |
| 3 | 2,328 | 1,762 | 4,582 | 5,433 |
| 4 | 2,691 | 1,809 | 4,996 | 5,956 |
| 5 | 2,773 | 1,742 | 4,350 | 5,445 |
| the arithmetic mean total vibration | | | | 5,498 |

| Operator C | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 2,890 | 1,645 | 5,007 | 6,011 |
| 2 | 2,192 | 1,340 | 4,442 | 5,132 |
| 3 | 2,327 | 1,686 | 4,496 | 5,336 |
| 4 | 2,444 | 1,720 | 4,313 | 5,248 |
| 5 | 2,106 | 1,329 | 4,634 | 5,261 |
| the arithmetic mean total vibration | | | | 5,397 |

**2.2.6 Test result**

**Main handle: The average vibration total value $a_h$: 4,867 $m/s^2$**

**Auxiliary handle: The average vibration total value $a_h$: 5,443 $m/s^2$**

**2.3 Mode "No load without saw blade"**

**2.3.1 Test standards**

EN 60745-1:2009+A11:2010; EN 60745-2-22:2011+A11:2013

**2.3.2 Description of the hand-held tool**

Product: Ring Saw

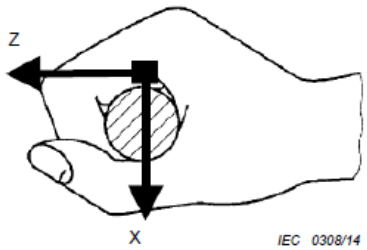
Model: R16

Technical data: 480 V; 3~

**2.3.3 Description of operating and testing conditions**

Testing conditions: No load/max.speed

**2.3.4 Measurement direction**




**2.3.5 Measurement data**

**Main handle:**

| Operator A | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 0,961 | 1,027 | 0,700 | 1,572 |
| 2 | 0,921 | 1,012 | 0,737 | 1,555 |
| 3 | 1,063 | 1,073 | 0,698 | 1,664 |
| 4 | 0,976 | 1,125 | 0,663 | 1,630 |
| 5 | 0,973 | 1,007 | 0,695 | 1,563 |
| the arithmetic mean total vibration | | | | 1,597 |

| **Operator B** | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 1,042 | 1,119 | 0,762 | 1,709 |
| 2 | 1,015 | 1,154 | 0,710 | 1,693 |
| 3 | 0,909 | 1,184 | 0,763 | 1,676 |
| 4 | 1,024 | 1,045 | 0,653 | 1,602 |
| 5 | 0,901 | 1,136 | 0,709 | 1,614 |
| the arithmetic mean total vibration | | | | 1,659 |

| **Operator C** | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 0,934 | 1,074 | 0,677 | 1,576 |
| 2 | 0,903 | 1,021 | 0,683 | 1,525 |
| 3 | 1,053 | 1,018 | 0,756 | 1,648 |
| 4 | 1,086 | 1,009 | 0,725 | 1,650 |
| 5 | 1,051 | 1,183 | 0,680 | 1,722 |
| the arithmetic mean total vibration | | | | 1,624 |

**Auxiliary handle:**

| **Operator A** | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 0,679 | 0,476 | 1,931 | 2,102 |
| 2 | 0,712 | 0,452 | 1,556 | 1,770 |
| 3 | 0,700 | 0,471 | 1,917 | 2,095 |
| 4 | 0,722 | 0,540 | 1,528 | 1,774 |
| 5 | 0,620 | 0,465 | 1,710 | 1,877 |
| the arithmetic mean total vibration | | | | 1,924 |

| **Operator B** | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 0,733 | 0,488 | 1,911 | 2,103 |
| 2 | 0,772 | 0,504 | 1,629 | 1,871 |
| 3 | 0,613 | 0,475 | 1,812 | 1,971 |
| 4 | 0,728 | 0,542 | 1,619 | 1,856 |
| 5 | 0,732 | 0,544 | 1,483 | 1,741 |
| the arithmetic mean total vibration | | | | 1,909 |

| Operator C | | | | |
|---|---|---|---|---|
| Direction / No. | $a_{hwx}$ | $a_{hwy}$ | $a_{hwz}$ | The vibration total value |
| 1 | 0,653 | 0,548 | 1,744 | 1,942 |
| 2 | 0,647 | 0,501 | 1,511 | 1,719 |
| 3 | 0,775 | 0,541 | 1,535 | 1,803 |
| 4 | 0,718 | 0,541 | 1,936 | 2,134 |
| 5 | 0,767 | 0,522 | 1,656 | 1,899 |
| the arithmetic mean total vibration | | | | 1,899 |

**2.3.6 Test result**

**Main handle: The average vibration total value $a_h$: 1,626 $m/s^2$**

**Auxiliary handle: The average vibration total value $a_h$: 1,910 $m/s^2$**

**The test results shown in this report relate only to the tests performed according to the test program. The test object has not been submitted to a full test program.**



**----------End----------**