**Irea System Industry Co., Ltd.'s Dynamo System Laboratory**

We can test a maximum of 41 kW 10,000 drive for devices including industrial electric motors, motors for rotary/ home appliances/drones, and generators

Measuring the effectiveness of electric motors (KS C IEC 60034-2-1:2014, KS C IEC 60034-2-3:2017)
1. Direct efficiency 2. Indirect efficiency (Loss separation test): automatic program execution, and automatic calculation and analysis of the result

In the process of KOLAS certificate for motor test sector (certification standard: KS C IEC 60034-2-1:2014)

## Ongoing KOLAS Certificate process

| | |
|---|---|
| Field | 03306, Industrial electric devices |
| Standard number | KS C IEC 60034-2-1:2014 |
| Field title | Rotating machines-Part2-1: Standardized testing methods to evaluate loss and effectiveness (except traction motor) |

IREA

Irea System Industry Co., Ltd.
308-314, 41, Cheonyeom-ilbanseong-gil, Wihaeksan, Cheongwon-si, Gyeongsangbuk-do, Republic of Korea
T 043.266.3500 F 043.266.3507_1

Irea System Industry Co., Ltd. & Affiliated Research Institute
314, 41, Cheonyeom-ilbanseong-gil, Wihaeksan, Cheongwon-si, Gyeongsangbuk-do, Republic of Korea

www.irealab.com

## Intelligent Integrated System

IREA
CHALLENGE AND INNOVATION

Irea System Industry Co., Ltd. which is a pioneer in the instrumentation system field, provides the best solutions for our customers' demand based on its abundant experiences and accomplishments.

www.irealab.com

## About Us

### IREA leads the instrumentation analysis diagnose system fields

Irea Co., Ltd., an expert in the automated instrumentation field, provides instrumentation systems that are required for testing and analysis of electric·electronic devices and electric motors. The company's instrumentation system can measure various physical quantities such as power consumption, output, temperature, vibration, pressure, and flow of the target device with its sensors and equipment. It collects more than thousands of data per second via the software automatically and precisely analyzes the result in a bat manner. Hash Bagging system is the one that executes standardized testing automatically and points out the testing result after its automatic analysis.

## Intellectual Property Rights

| 10NO | Contents | Application·Registration Number |
|---|---|---|
| 2014-1-13-00 | Dynamometer measuring | 10-1-13-0014 (Registered) |
| 2015-04-00 | Apparatus and Methods for Measuring Electric Conductivity | 10-15-1-13-07 (Registered) |
| 2017-1-1-00 | Dynamo Type Battery Test Device and Method | 10-1-7-0-0003 (Registered) |
| 2020-02-03 | Monitoring System of Field-becoming Apparatus and Method Thereof | 10-2-0-0-0-1-3 (Registered) |
| 2021-06-07 | Application for a Patent(Diagnosis Method and System of Component Loss for Motor) | 10-2-21-0003 (Registered) |
| 2021-07-02 | Transformer Real-time Monitoring System | 10-2-21-1-0003 (Registered) |
| 2020-08-10 | Apparatus for Motor Testing | 10-2020-0027-0003 |
| 2020-11-24 | Adapter Measuring Current for Voltage and Current Measuring Apparatus of 3 Phase | 10-2020-0-13-0-0-05 |
| 2020-12-10 | Resistance Measurement of Motor | 10-2020-0-17-0-0-7 |
| 2020-12-01 | CCTV Remote Control Security System | 10-2020-0-10-0000 |
| 2021-09-14 | Motor Dynamometer and Motor's Characteristics to Create Curves | 10-2021-0-12-0-05 |

## Business Review

### Integrated Instrumentation System

A system that evaluates and analyzes the performance of home appliances including washing machines, air conditioners, and refrigerators

Key to supplying its system to domestic manufacturers of home appliances and public testing institutions to provide accredited performance and reliability of the devices to customers by testing the durability of the home appliances and evaluating them.

**Key Technologies Related to Integrated Instrumentation System**

- Technology to analyze data instrumentation system
- Technology to analyze data and evaluate the performance
- Technology to create data instrumentation environment and controlling
- Software and firmware technology

### Dynamo System

It is a device that measures the power of a spinning machine. The system evaluates and analyzes with different characteristics of a spinning device by connecting the motor or machine and connecting the device to drag or spin.

It consists of a loading system, a method, a measuring and controlling system, an environmental chamber, and software management. It is not limited to motor performance testing but also possible to design and manufacture systems suited for various testing like inverter test, EV battery performance analysis, smart actuator, and robot testbed.

**Fields Applicable to Dynamo System**

- Automotive field: Evaluating performance and characteristics of high-speed driving motors and control inverter for electric vehicles
- Aviation field: Evaluating performance of unmanned aircraft(drones)'s propulsion motors and generators
- Shipbuilding field: Evaluating hull and propulsion systems for ships
- Robotics field: Evaluating performance of high-performance precision reducers and actuators of industrial collaborative robots and wearable robots
- General industrial field: Evaluating performance and reliability of various electric motors like pumps, fans, and home appliances as well as the effectiveness of industrial testbed motor

### Information and Communication System

Remote control provides a stable CCTV management environment. Image of a disaster may send an electric near fast round enhance security for private information.

Hash CCTV root management program', a remote-control program that could swiftly respond to errors when they arise by real-time monitoring, allows you to detect door opening and errors or faults connected to CCTV.

**Products Registered on the Public Procurement Service's Unit Price Contract for 3 Third Party**

- Distribution Function: 2270-2114 Single core
- Distribution Function: 2270-2114 Double core

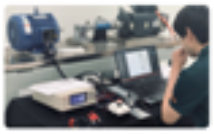
**Product Composition**

- Remote control board (2NO2): 1 main fan controls all functions of SSH (controlling door lock, smoke/temperature, and controlling alarm)
- Electronic door lock: 1 (Remotely shutdown/unlock)
- Master relay: 1 master key could control the opening and closing of the entire door (improving maintenance and protecting, enhancing security by locking the room)

### R&D

The company's affiliated research institute provides solutions for various testing devices such as integrated instrumentation systems and dynamo systems by developing instrumentation analysis and diagnosis SW solution

With its expertise's system with standardized tests and automatization of result analysis, even a layman could get an expertise's and precise test result by numbing a test.

**Software Development and Research Project**

- Developing smart dynamo with pilot driving test functions to optimize flexible motor for electric vehicle
- Designing new instrumentation diagnosis system to address manufacturing innovation' to respond to the international energy efficiency regulation on industrial electric motors
- Technological assistance for incremental budgeting of the load testing system for test evaluation sites
- Developing entry current semiconductor technology based on the harmonic method