# WORLD AUTOMION TE072A808 DCRF Device Charge and Recognition Fixture User Manual



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## DCRF
## (Device Charge & Recognition Fixture )

User Manual

V1.7

**Revision History**

| Revison | Released Date | Description | Remark |
|---|---|---|---|
| V1.4 | 2023/09/23 | 1. Change the title to match the official name;<br>2. Remark the wireless charger Max power 7.5W; | FCC ID |
| V1.4 | 2023/09/23 | Remark the Grounding ,Waterproof and dustproof | US Safety |
| V1.5 | 2023/10/21 | 1. Updated the FCC RF exposure statement<br>2. Updated the fixture weight | FCC Part15C |
| V1.6 | 2023/11/03 | 1. Added the CE requirement for wireless;<br>2. Adder the IC warning;<br>3. Added the NCC warning; | CE RED<br>IC ID<br>Taiwan NCC |
| V1.7 | 2023/11/06 | 1. Added the CE RED importer information | CE RED |
| V1.8 | 2023/12/14 | Added the DCRF fixture's brand for Taiwan NCC | Taiwan NCC |
| | | | |
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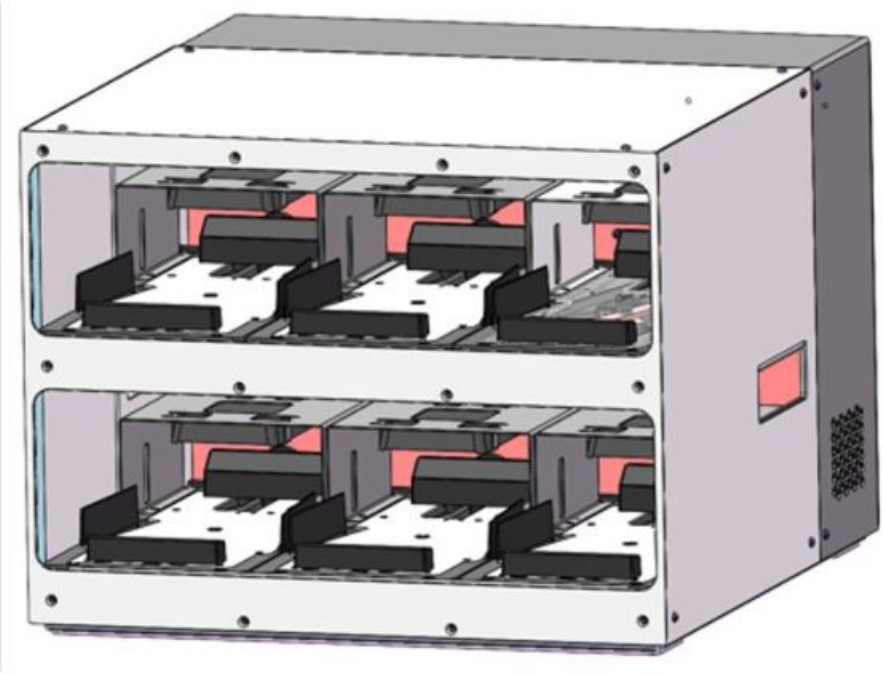
| | | | |

**Overview**

The Device Charge & Recognition Fixture (DCRF) is a fixture designed for charging and recognizing compatible wireless devices.

The fixture consists of 6 wireless Qi chargers, 6 NFC readers and LED lights that are interconnected and controlled through a USB HUB and USB Relay and powered via an internal power supply. The fixture is designed so that six devices can be placed into it at any given time.

The DCRF does not have an internal CPU, memory or embedded software of any kind. It must be connected to a computer to be controlled via USB with custom software to achieve customer demands.



**DCRF Spec Sheet**

**Model #**
TE-072-A808-00000

**General Info**
Dimensions: W x H x D
15.2 x 11.7 x 16.2 (in)
387 x 297.5 x 412 (mm)

Weight: 24.25 lbs / 11.0 kg

**Electrical**
AC Input: 100-240 VAC
DC Voltage: 12 V
Max Power: 150 W
Nominal Power: 70 W
Single Wireless Charger Output:7.5W Max

**Wireless Working Frequency Range And Maximum Transmission Power**

| Componet | RF Frequency (Range) | Output Power (H-field) |
|---|---|---|
| Wireless Charger | 123.8~146.7kHz | 12.88 dBμA/m @10m |
| NFC | 13.56MHz | 39.76 dBμA/m @3m |

**Installation**
Place on a flat, level surface. For multiple fixtures, place side by side or stacked (max 3) exactly above. Leave space on sides of fixture for adequate airflow.

**Required Accessories**

- USB-B to USB-A Cable OR USB-B to USB-C Cable for connection to PC
- AC Power Cable (region-dependent)

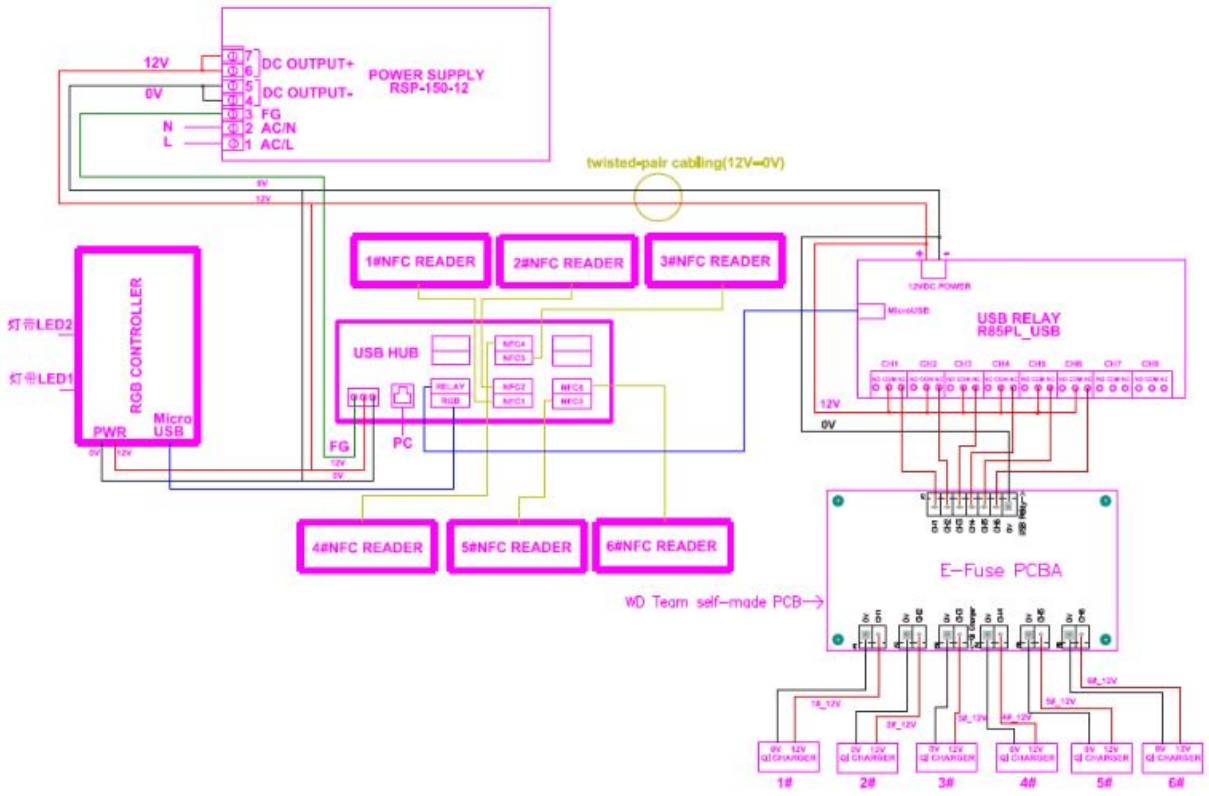
**Brand**
WORLD AUTOMION

**Service**
The DCRF is designed to be serviced on a module-by-module basis; this to help keep the fixture in service even if the centering mechanism, NFC reader, or charger are broken on an individual module. If internal components are broken, it may require further service and electrical work.

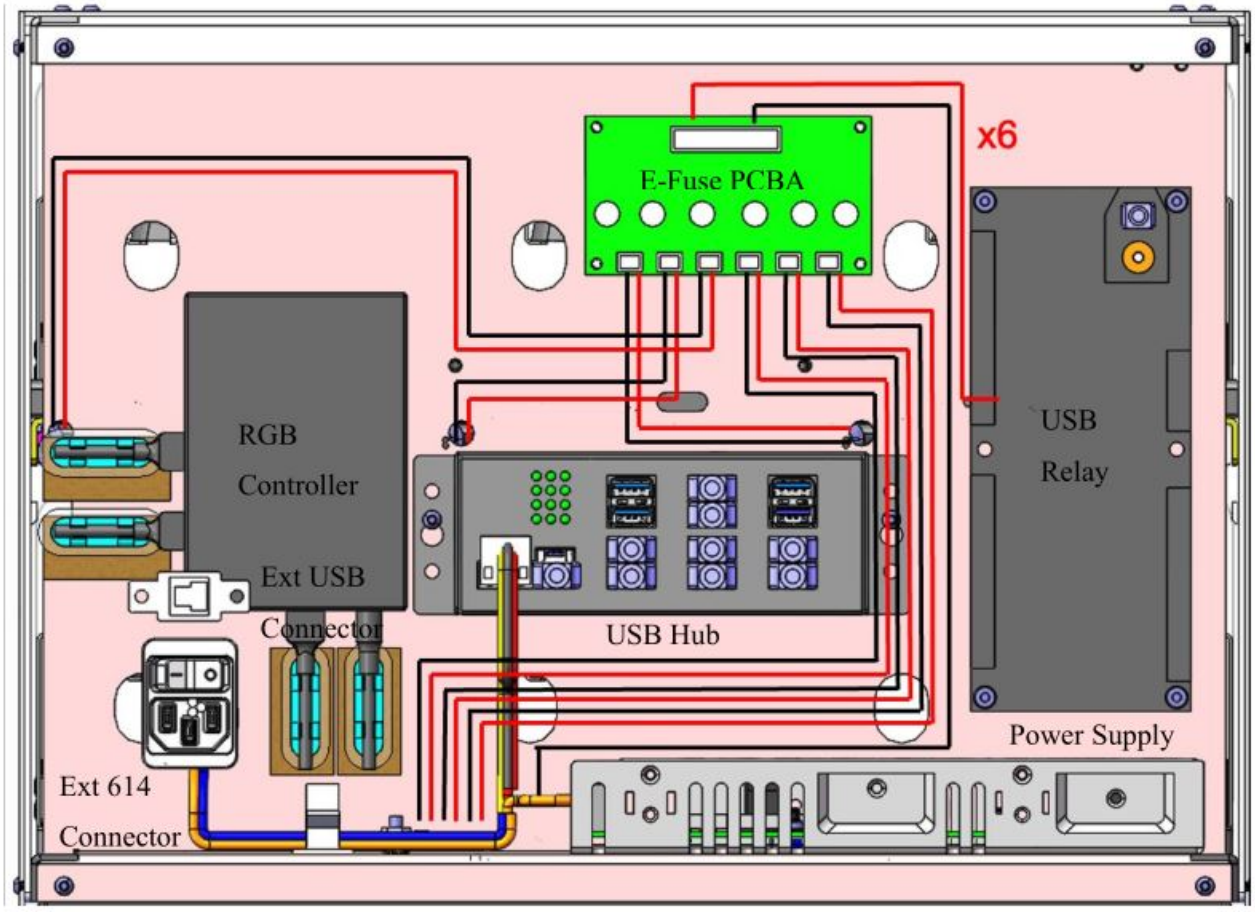
**Internal Fixture Critical Components**

| Item | Definition | Brand | Specification | Country of Mfg | Qty. |
|---|---|---|---|---|---|
| 1 | USB HUB | Coolgear | CG-12U3ML | USA | 1 |
| 2 | USB Relay PCBA | National Control | R85PL-USB | USA | 1 |
| 3 | RGB Controller | Razer | Chroma Addressable RGB Controller | USA | 1 |
| 4 | Power Supply | MEAN WELL | RSP-150-12 | China | 1 |
| 5 | QI CHARGER | Kew Labs | UTS-1 (Thin) | USA | 6 |
| 6 | NFC READER | ACS | ACR1252U-M2APLA | USA | 6 |
| 7 | IEC C14 CONNECTOR | MISUMI | APCJ-101-1FSA-01 | China | 1 |
| 8 | Custom 9 ARGB LED Strip | Akasa | PR-CB632 | Taiwan | 2 |

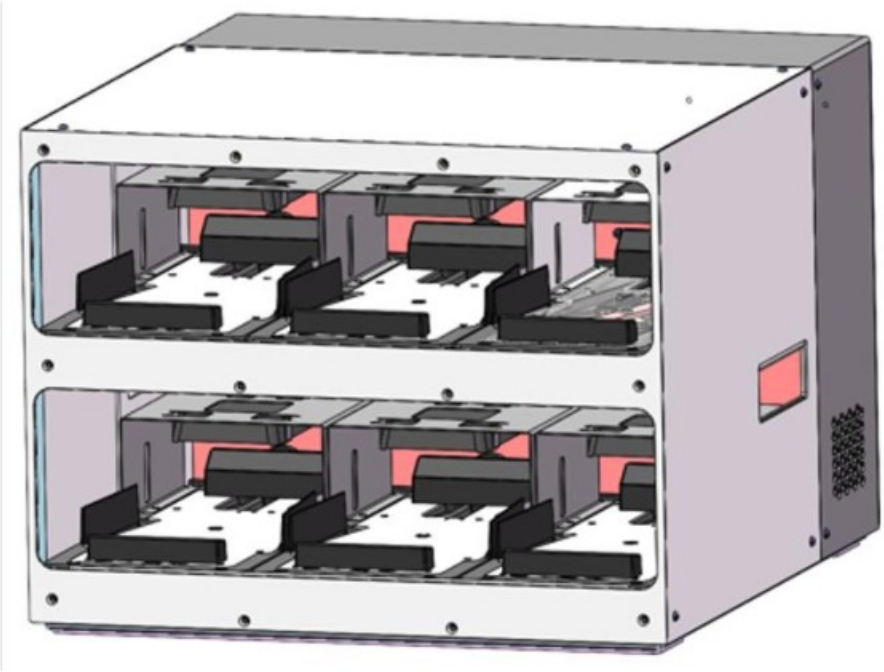
**Wiring Diagram**




**Internal Fixture Wiring**

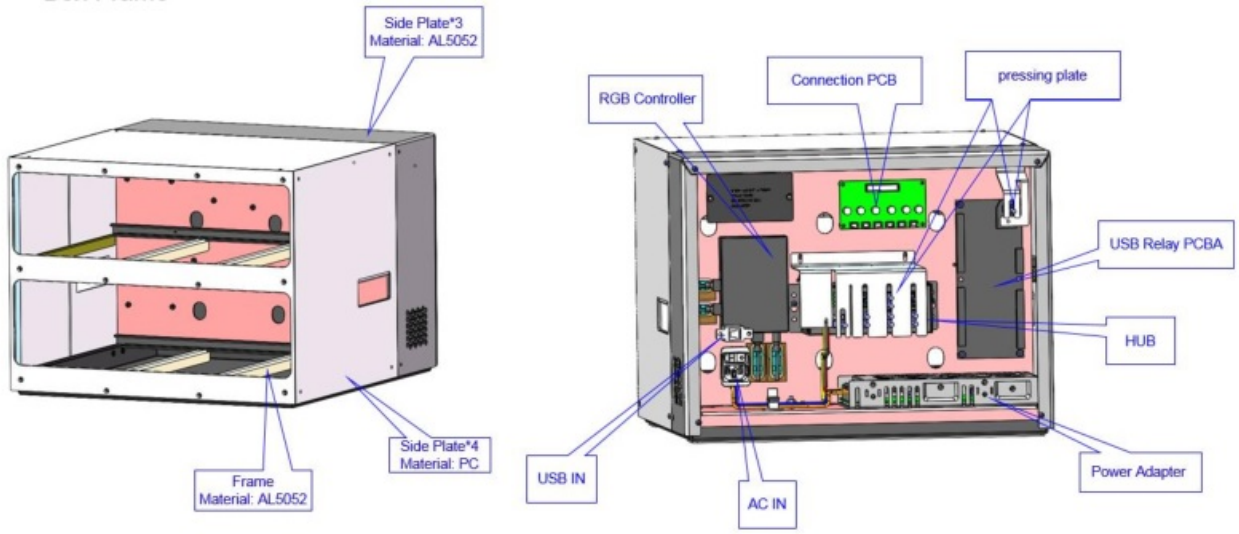


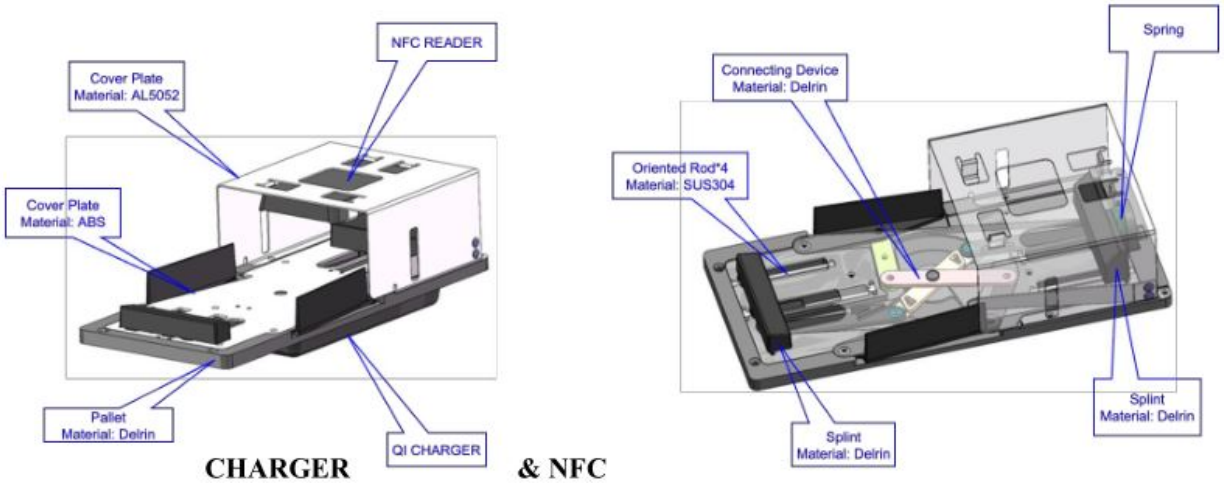

**Fixture Mechanical Assembly Breakdown**



## BOX FRAME

Box Frame




## CHARGER & NFC

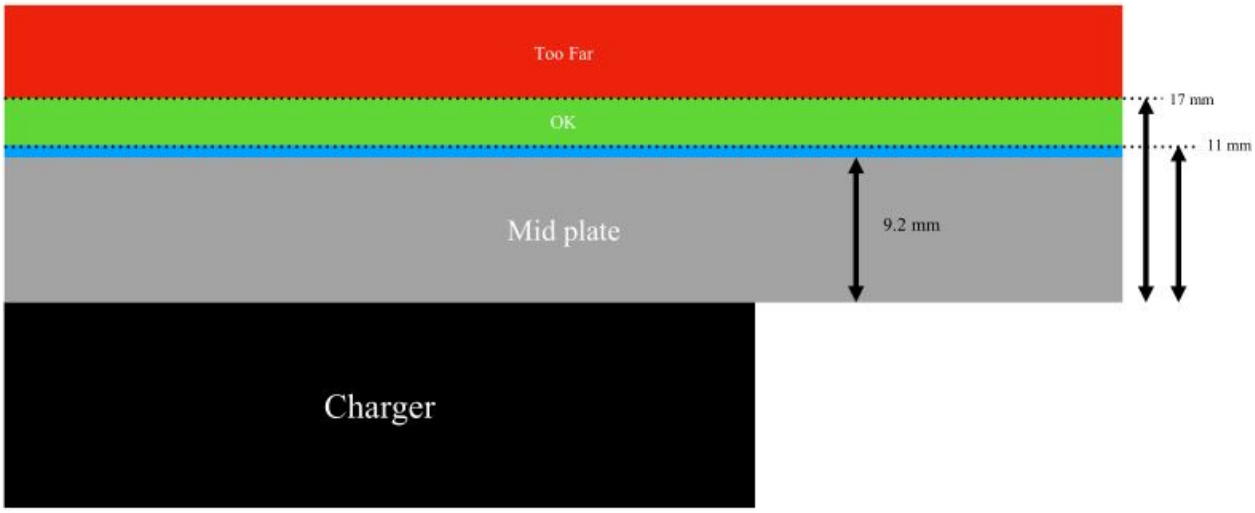
## CENTERING MODULE

**Use Guide**

Before Applying Power
Verify wall power is 110 or 220V
Verify the power cable is certified, in good condition, not frayed or torn.
If a power strip is used, ensure it is certified, in good condition, not frayed or torn.
Verify the USB cable is certified, in good condition, not frayed or torn.

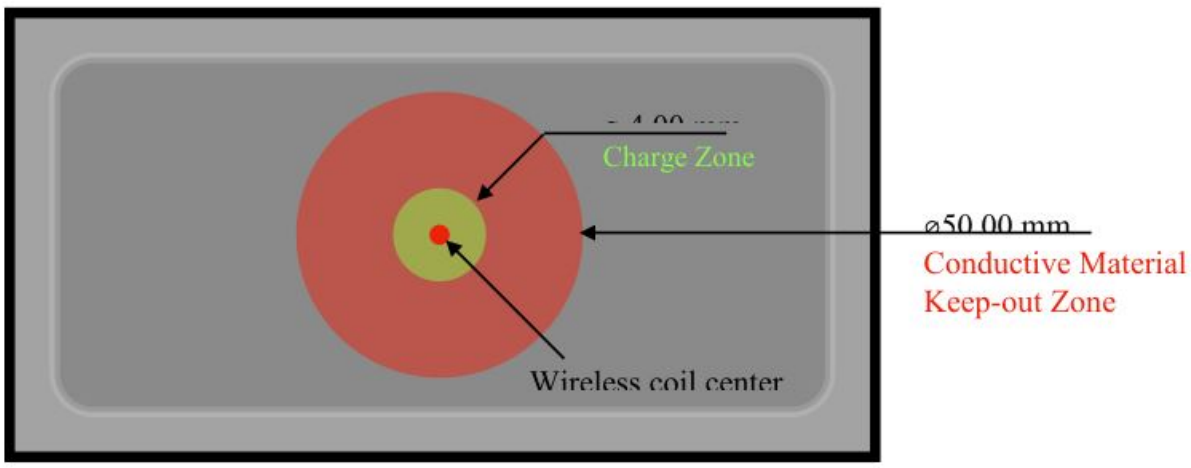
**Regular Operation & Device Compatibility**
Operation of the fixture with wireless devices for charging & recognition is to be controlled by an external computer and software to meet customer's unique demands.

**Coil-Coil Perpendicular Distance**
The use of an off-the-shelf wireless charger leads to a minimum and maximum distance between the coil of the wireless charger and the charging coil of the device. This range has been tested to work between 11-17 mm. A plate is built into the fixture of a thickness of 9.2 mm to help bring in scope a variety of




devices. This means that devices must be between 1.8 – 7.8 mm from the mid plate for use in the DCRF.

**Coil-Coil Radial Distance**
The lateral distance between the charger coil and the device coil must be <4 mm for reliable charging.
This makes the charge zone effectively a 4mm diameter from the charger coil center.



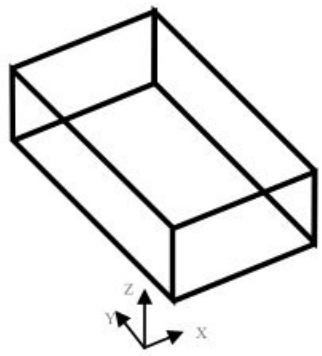

**SAFETY WARNING:**
Do not place any conductive materials in a 50 mm diameter zone around the charger coil center.

Placement of any conductive material in this zone may result in non-functional charging, over-heating or fire safety risks.

**Box Compatibility**

If tested and approved by the end customer, some wireless devices may be placed into the fixture while inside of their packaging boxes. The device charging coil must still meet the coil-coil perpendicular and lateral distance requirements and the box must not contain any conductive materials between the device and the charging coil.

Any box in the size range provided below will be centered by the mechanism built into each module. Do not exceed the maximum recommended box size dimensions.




| Dimension | Min | Max |
|---|---|---|
| Width ( X ) | 83mm | 105mm |
| Length ( Y ) | 130mm | 205mm |
| Depth ( Z ) | - | 43mm |

**Shipping & Handling**

Ensure the fixture is stabilized during shipping or transportation so that it is not bouncing, shaking or sliding around. Use vendor approved and tested packaging for any transport.
Always use the handles on the left and right side of the fixture to lift and transport the fixture. Do not attempt to lift the fixture using just one handle.
Keep the fixture level when lifting and moving during setup.

**Environmental Requirements**

1. Indoor use only in air conditioned lab, office, store or warehouse environments.
2. The fixture can be left in standby mode indefinitely but should be Powered OFF at the end of every shift, when it is to be left alone and or unsupervised for prolonged periods of time.
3. Temperature Range:
    1. Operating ambient temperature: 32° to 95° F (0° to 35° C)
    2. Non-operating temperature: –4° to 113° F (–20° to 45° C)
4. Relative Humidity Range: 5% to 95% noncondensing
5. Any and all liquids, hazardous, flammable or not, should be kept at a distance and never allowed to touch or

enter the fixture to prevent contamination, corrosion or potential for electrical shorts

6. Do not operate the instrument in the presence of flammable gases or fumes
7. The fixture should be used in an environment with adequate ventilation where no flammable vapor- air or gas air is present. Adequate ventilation is defined as ventilation (natural or artificial) that is sufficient to prevent the accumulation of significant quantities of vapor-air or gas-air mixtures in concentration above 25% of their lower flammable (explosive) limit, LFL (LEL)

**Storage**

When the fixture is not in use, pack properly and store in a controlled environment.

1. Indoor temperature –4° to 113° F (–20° to 45° C)
2. Indoor Relative Humidity Range: 5% to 95% noncondensing
3. Do not store in direct sunlight
4. Keep away from water, oils and other liquids
5. Keep away from areas containing volatile components or corrosive gases
6. Store in a dust-free place.
7. Avoid subjecting the fixture to regular vibration shocks above 0.5G.

**Cleaning**

The fixture's outer surfaces may be cleaned as follows:

1. Power OFF the fixture
2. Allow fixture to cool down to room temperature (minimum 15 minutes).
3. Clean with lint free wipes
4. Do not use compressed air or vacuums to clean internally.
5. Do not use liquid or sprays of any kind.

**Maintenance and Malfunction**

This fixture does not require regular maintenance from the technician.
If the operator encounters any malfunction, broken parts or components, discontinue use immediately, power the fixture off, unplug and notify management and or engineering staff.
If the operator encounters any unexpected electrical behavior such as unintended power cycling (on/off), power drops as evidenced by changes to fixture lighting, fans, sounds, sparking or malodor, discontinue use immediately, power the fixture off, unplug and notify management and or engineering staff.

If any other abnormal issues are encountered, discontinue use immediately, power the fixture off, unplug and notify management and or engineering staff.

**Service and Repair**

**Do not remove any panels or covers of the fixture.** Technicians or operators must not remove any protective or enclosure panels on the fixture, or disassemble any other parts of the fixture.
This fixture is not designed to be serviceable by end users. Component replacement and / or internal adjustment should only be performed by authorized service personnel / engineering staff. Service by
Authorized Personnel

The fixture is designed to have swappable modules and can accommodate more complicated repairs such as component replacements, wiring fixes, etc. The most basic servicing for the fixture is the module swap.

**Module Swap**

A module composes of the centering mechanism, NFC reader, and Qi Charger. If any of these components fail, it is best to swap out a whole module and then diagnose which part has an issue and repair if possible.

Swapping a module requires the following steps:

1. Unplug back of fixture from power and USB
2. Remove back panel screws (4x)
3. Unplug NFC reader from USB HUB associated with that slot
4. Remove front panel screws (10x)
5. Remove module retention screws (2x)
6. While removing the module, string NFC reader USB cable through mid plate of fixture and unplug power cable from the Qi charger
7. Acquire new module
8. Plug in power cable from the Qi charger
9. Route NFC USB cable through the back hole
10. Plug in NFC USB cable into the correct USB port
11. Slide module such that it sits flat in the fixture
12. Install both module retention screws (2x)
13. Install front panel screws (10x)
14. Install back panel screws (4x)

**Grounding**

Terminal which is bonded to conductive parts of equipment for safety purposes.

**Waterproof & Dustproof**
IPX0.

**FCC Warning**

FCC Warning
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on,

the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC RF exposure statement:
The equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance between 20cm the radiator your body.

**IC Warning**

IC RSS-Gen 8.4 User Manual Notice for Licence-Exempt Radio Apparatus This device contains licence- exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development
Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

**CE RED Requirement**
European Importer Information:
Name: Apple Distribution International Ltd.
Address: Hollyhill Industrial Estate, Cork, Ireland

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Contents

1 Documents / Resources
1.1 References

## Documents / Resources

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|---|---|
| | WORLD AUTOMION TE072A808 DCRF Device Charge and Recognition Fixture [pdf] User Manual<br>TE072A808, TE072A808 DCRF Device Charge and Recognition Fixture, DCRF Device Charge and Recognition Fixture, Device Charge and Recognition Fixture, Charge and Recognition Fixture, Recognition Fixture, Fixture |

## References

- User Manual

Manuals+, Privacy Policy

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