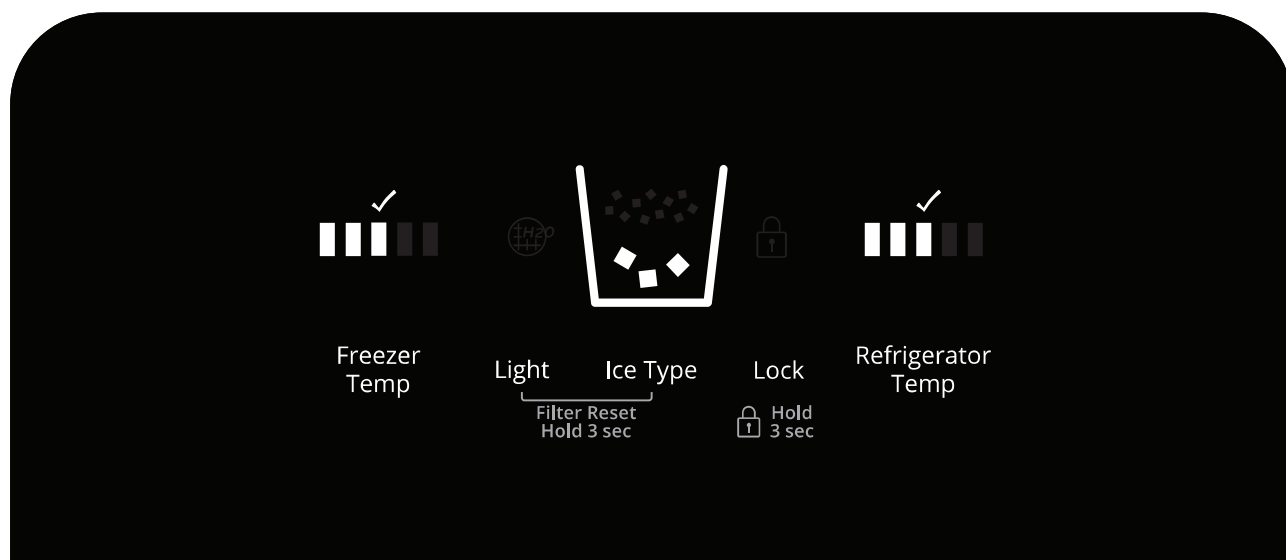


GENERAL INFORMATION

Refrigerator Compartment	
Number of Interior Shelves	4
Conventional Shelves	1 Fixed Full-Width Glass 3 Adjustable Full-Width Glass
Shelf Supports	Molded
Humidity-Controlled Drawers	1 Full-Width
Non-Climate Control Drawers	1 Full-Width
Temperature-Controlled Drawers	No
Door Bins	1 Dairy 1 Fixed Full-Width 3 Adjustable Gallon
Supplementary Containers	No/Can Caddy Bin Utility Compartment
Lighting	LED
Freezer Compartment	
Door Type	Swing
Shelves	3 Adjustable Full-Width Glass or 3 Fixed Full-Width Wire
Freezer Number of Shelves	3
Freezer Drawer/Basket	1 Full-Width Lower Plastic
Door Bins	3 Fixed Full-Width
Light	LED
Dispenser	
Dispenser Type	Exterior Ice and Water
Dispenser Options	Filtered Water Ice Dispenser Lock Measured/Metered Fill Night Light
Types of Ice	Crushed/Cubed
Icemaker	
Icemaker	Factory Installed
Icemaker Location	Freezer
Electrical	
Hz	60

Product Features

CONTROL PANEL



Refrigerator Control:

- Press Refrigerator Temp to view the current set point for the refrigerator.
- Press Refrigerator Temp again to adjust the set point. The setting will increase by 1 bar with each press of the button, returning to 1 bar after reaching 5 bar.
After 2 minutes of inactivity, any changes will be saved and the display will return to the home screen.

Freezer Control:

- Press Freezer Temp to view the current set point for the freezer.
- Press Freezer Temp again to adjust the set point. The setting will increase by 1 bar with each press of the button, returning to 1 bar after reaching 5 bar.
After 2 minutes of inactivity, any changes will be saved and the display will return to the home screen.

Model & Serial Number Location



Model Nomenclature

MODEL NUMBER

INTERNATIONAL SALES OR
MARKETING CHANNEL

W

R

S

3

1

5

S

N

H

B

Brand

W = Whirlpool

Platform

R = Freestanding Refrigeration

S = Specialty Refrigeration

U = Undercounter Refrigeration

Z = Freestanding Freezer

Sub Platform/Fuel

T = Top Freezer

S = Side by Side

B = Bottom Freezer

F = French Door

X = FD Double Drawer

X = All Freezer

V = Vertical Pantry

Series

1 = OPP

3 = Low Line

5 = Mid Line

7 = High (GOLD)

9 = Hero (GOLD)

Feature Level/Key Feature

Feature Level (0-9) OR Derivative (Top Mount)

Feature Level/Key Feature

0 = 10 OR 20 OR 30 Cu Ft

1 = 11 OR 21 Cu Ft

2 = 12 OR 22 Cu Ft

3 = 13 OR 23 Cu Ft

4 = 14 OR 24 Cu Ft

5 = 15 OR 25 Cu Ft

6 = 16 OR 26 Cu Ft

7 = 17 OR 27 Cu Ft

C = Counter Depth

F = Flat

S = Smooth Contour

T = Textured

X = Light Texture, Contour

O = Overlay

K = Trim Kit

B = Beveled Edge

I = In-Door-Ice

N = Non-Dispense

W = Internal Water

D = Dispense Ice & Water

S = Shaved Ice

C = Crushed Ice

F = Field Install Ice Maker, No Water

YEAR PF MARKET INTRODUCTION

F = 2016

G = 2017

H = 2018

J = 2019

COLOR

W = White

T = Bisque/Biscuit

B = Black

S = Black On Stainless

Section 2: Diagnostics

This section provides diagnostic mode and sales mode information for the “Whirlpool®, Maytag®, Amana®, and IKEA® Refrigerators.”

- Safety
- Diagnostics Mode
- Sales Mode

For Service Technician Use Only

Safety

⚠ DANGER



Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- Verify the controls are in the off position so that the appliance does not start when energized.
- Allow enough space to perform the voltage measurements without obstructions.
- Keep other people a safe distance away from the appliance to prevent potential injury.
- Always use the proper testing equipment.
- After voltage measurements, always disconnect power before servicing.

IMPORTANT: Electrostatic Discharge (ESD) Sensitive Electronics

ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

- Use an antistatic wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

-OR-

Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.

- Before removing the part from its package, touch the antistatic bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in antistatic bag, observe above instructions.

For Service Technician Use Only

Diagnostics Mode

Service Information

1. Compressor suction and process stubs may not be interchanged.
2. Refrigerant charge must be applied to high side only.
3. Ice maker and water valve not original equipment on all models.
4. **NOTE:** Ice maker cycle must be initiated electrically. Do not try to manually start the cycle.
5. Part number can be found on the component.

*Normal operating conditions are viewed when the air and temperature controls are at the mid-sitting freezer section 0 to -5°F and unit is cycling.

NOTE: Watt and pressure readings will vary and are influenced by the existing condition of the appliance such as the iced-up evaporator, condition of the condenser, defrost cycle, pull-down time and customer use.

Serviceable Electrical Parts Matrix (Components By Cu Ft Size)					
Serviceable Parts	21 Cu Ft	22 Cu Ft	25 Cu Ft	Wattage	Resistance (Ω)
	115 - 127 VAC				
Compressor	EGX60HLC			102	
	W11045354				
Run Windings	*				1 - 5
Start Device, Overload	See Note				
Run Capacitor (If Equipped)	See Note				
Electric Air Baffle Assembly	See Note			12 V DC	
Thermistor	See Note				2.7 kΩ at 25°C
User Interface Control	See Note				
Main Control	See Note				
Defrost Heater	See Note			550 - 650	
Evaporator Fan Motor	See Note			2 - 9	
Condenser Fan Motor	See Note			3 - 12	

Serviceable Electrical Parts Matrix					
Serviceable Parts	EGX60HLC	WATTAGE 115 - 127 VAC	EM3Y60HLP	WATTAGE 115 - 127 VAC	Resistance (Ω)
Compressor	W11045354	102	W11181053	109	
Run Windings	-		-		1 - 5
Start Device, Overload	See Note		See Note		
Run Capacitor (If Equipped)	See Note		See Note		
Electric Air Baffle Assembly	See Note	12 V DC	See Note	12 V DC	
Thermistor	See Note		See Note		2.7 kΩ at 25°C
User Interface Control	See Note		See Note		
Main Control	See Note		See Note		
Defrost Heater	See Note	550 - 650	See Note	550 - 650	
Evaporator Fan Motor	See Note	2 - 9	See Note	2 - 9	
Condenser Fan Motor	See Note	3 - 12	See Note	3 - 12	

Compressor Options - Refer To Applicable Design (Oil cooler not present on all compressors)



For Service Technician Use Only

Step	Step Code	Component	Action	Feedback
1	● ○ ○ ○ ○ LED1 LED2 LED3 LED4 LED5	FC Sensor	Entry: Display step number & start sensor check. Do: Read the current temperature of the FC thermistor and compare the value. Exit: Stop sensor readings.	Open sensor display: ● ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10 Short sensor display: ○ ○ ● ○ ○ LED6 LED7 LED8 LED9 LED10 Pass test display: ○ ● ● ● ○ LED6 LED7 LED8 LED9 LED10 Sensor status blank until gets a valid reading ○ ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10
2	OFF	NONE	OFF	OFF
3	● ● ○ ○ ○ LED1 LED2 LED3 LED4 LED5	RC Sensor Step Code:	Entry: Display step number & start sensor check. Do: Read the current temperature of the RC thermistor and compare the value. Exit: Stop sensor readings.	Open sensor display: ● ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10 Short sensor display: ○ ○ ● ○ ○ LED6 LED7 LED8 LED9 LED10 Pass test display: ○ ● ● ● ○ LED6 LED7 LED8 LED9 LED10 Sensor status blank until gets a valid reading ○ ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10
4	OFF	NONE	OFF	OFF
5	● ● ● ○ ○ LED1 LED2 LED3 LED4 LED5	Defrost Sensor	Entry: Display step number & start sensor check. Do: Read the current temperature of the Defrost thermistor and compare the value. Exit: Stop sensor readings.	Open sensor display: ● ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10 Short sensor display: ○ ○ ● ○ ○ LED6 LED7 LED8 LED9 LED10 Pass test display: ○ ● ● ● ○ LED6 LED7 LED8 LED9 LED10 Sensor status blank until gets a valid reading ○ ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10
6	OFF	NONE	OFF	OFF
7	● ● ● ● ○ LED1 LED2 LED3 LED4 LED5	Compressor & Cond Fan	Entry: Display step number & turn ON the Cond fan. Do: Service user to monitor load. Exit: Load off.	N/A
8	OFF	NONE	OFF	OFF

For Service Technician Use Only

Step	Step Code	Component	Action	Feedback
9	O O O O ● LED1 LED2 LED3 LED4 LED5	Damper Open	Entry: Display step number & open damper. Do: Service user to monitor the damper position. Exit: Damper close.	N/A
10	OFF	Damper close	OFF	OFF
11	O O O ● ● LED1 LED2 LED3 LED4 LED5	Damper heater ON	Entry: Display step number & turn on damper heater. Do: Service user to monitor the damper heater. Exit: Load off.	N/A
12	OFF	NONE	OFF	OFF
13	O O ● ● ● LED1 LED2 LED3 LED4 LED5	Defrost Heater ON	Entry: Display step number & turn on the heater. Do: Service user to monitor the load. Exit: Load off.	N/A
14	OFF	NONE	OFF	OFF
15	O ● ● ● ● LED1 LED2 LED3 LED4 LED5	Evaporator Fan ON	Entry: Display step number & turn on the EVAP fan. Do: Service user to monitor the load. Exit: Load off.	N/A
16	OFF	NONE	OFF	OFF
17	● O O O ● LED1 LED2 LED3 LED4 LED5	Dispenser light ON	Entry: Display step number & turn on the dispenser lights. Do: Service user to monitor the load. Exit: Load off.	N/A
18	OFF	NONE	OFF	OFF
19	● O O ● ● LED1 LED2 LED3 LED4 LED5	Water Dispenser Valve	Entry: Display step number. Do: Press the water paddle to activate valve and monitor load. Exit: Load off.	NOTE: Water valve will remain on after paddle release, to exit press key SW2 (Light).
20	OFF	NONE	OFF	OFF
21	● O ● ● ● LED1 LED2 LED3 LED4 LED5	RC door switch input	Entry: Display step number. Do: Lights will have to be verified on the product. Exit: N/A.	Door Open: Internal RC lights ON. Door Closed: Internal RC lights OFF.
22	OFF	NONE	OFF	OFF
23	● ● O ● ● LED1 LED2 LED3 LED4 LED5	FC door switch input	Entry: Display step number. Do: Lights will have to be verified on the product. Exit: N/A.	Door Open: Internal FC lights ON. Door Closed: Internal FC lights OFF.
24	OFF	NONE	OFF	OFF
25	● ● ● O ● LED1 LED2 LED3 LED4 LED5	Ice Paddle	Entry: Display step number. Do: User to press ice paddle. Service user to monitor the display feedback. Exit: N/A.	Paddle Pressed: ● O O O O LED6 LED7 LED8 LED9 LED10 NOTE: No water is dispensed in this step.
26	OFF	NONE	OFF	OFF

For Service Technician Use Only

Step	Step Code	Component	Action	Feedback
27	● ○ ○ ● ○ LED1 LED2 LED3 LED4 LED5	Water Paddle	Entry: Display step number. Do: User to press water paddle. Service user to monitor the display feedback. Exit: N/A.	Paddle Pressed: ● ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10 NOTE: No water is dispensed in this step.
28	OFF	NONE	OFF	OFF
29	● ○ ● ○ ○ LED1 LED2 LED3 LED4 LED5	Ice harvest		RC Feedback information - Blank = Until get a valid reading ○ ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10 - IM harvest cycle is ON ● ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10 - IM harvest cycle is OFF ● ● ○ ○ ○ LED6 LED7 LED8 LED9 LED10 - Ice bucket full detected ● ● ● ○ ○ LED6 LED7 LED8 LED9 LED10 - Ice bucket not full ● ● ● ● ○ LED6 LED7 LED8 LED9 LED10 - Switch faulty or motor (Timeout = 20 seconds) ● ● ● ● ● LED6 LED7 LED8 LED9 LED10
30	OFF	NONE	OFF	OFF
31	● ● ○ ● ○ LED1 LED2 LED3 LED4 LED5	Ice maker water fill test	Entry: Display step number. Upon entry to this step, there will be a 3 seconds delay, and then the ice tray will be moved to the home position. Do: After the tray has reached home position, the "CHANGE SETTING KEY" will start an ice maker fill (only 100 ml +/- 10). Service user to monitor the display feedback. Exit: Clear feedback information. NOTE: At step entry the water fill cycle default to OFF. Prior entry of this run step 29, make sure the ice tray is empty. Before proceeding with water fill, otherwise, double fill will occur. Make sure to proceed with step 29 after water fill test to leave tray empty when finishing service. Ice bucket must be in place to run this test.	RC Feedback information - Configuration to start ○ ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10 - Ice tray moving to the home position ● ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10 - Water fill OFF ● ● ○ ○ ○ LED6 LED7 LED8 LED9 LED10 - Water fill ON ● ● ● ○ ○ LED6 LED7 LED8 LED9 LED10
32	OFF	NONE	OFF	OFF

For Service Technician Use Only

Step	Step Code	Component	Action	Feedback
33	● ○ ● ○ ● LED1 LED2 LED3 LED4 LED5	SANKYO Ice maker - Ice tray thermistor	Entry: Display step number. Do: Read the current temperature of the ice maker tray, thermistor and compare this value. This information shall be dynamically updated every second. Service user to monitor the display feedback. Exit: Clear feedback information. NOTE: For models without twist tray ice maker, the feedback will read as open.	Open sensor display ● ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10 Short sensor display ○ ○ ● ○ ○ LED6 LED7 LED8 LED9 LED10 Pass test display ○ ● ● ● ○ LED6 LED7 LED8 LED9 LED10 Sensor status blank until gets a valid reading ○ ○ ○ ○ ○ LED6 LED7 LED8 LED9 LED10
34	OFF	NONE	OFF	OFF
35	● ● ● ● ● LED1 LED2 LED3 LED4 LED5	Service completed	Last step in service	N/A

Service Mode Steps For Athena Control

During the first 30 seconds after power up the product, press TEMP setting button, until is located min position, then hold the refrigerator door switch to simulate the door is closed, and at the same time hold press refrigerator TEMP button for 5 seconds until the board enters service mode.

System Action

Into service state mode, all temperature LEDs turn on for and turn OFF after 10 seconds.

A user must use the SW1 button to advance steps into service mode. User shall wait 3 seconds between each keypress to allow the system stabilization.

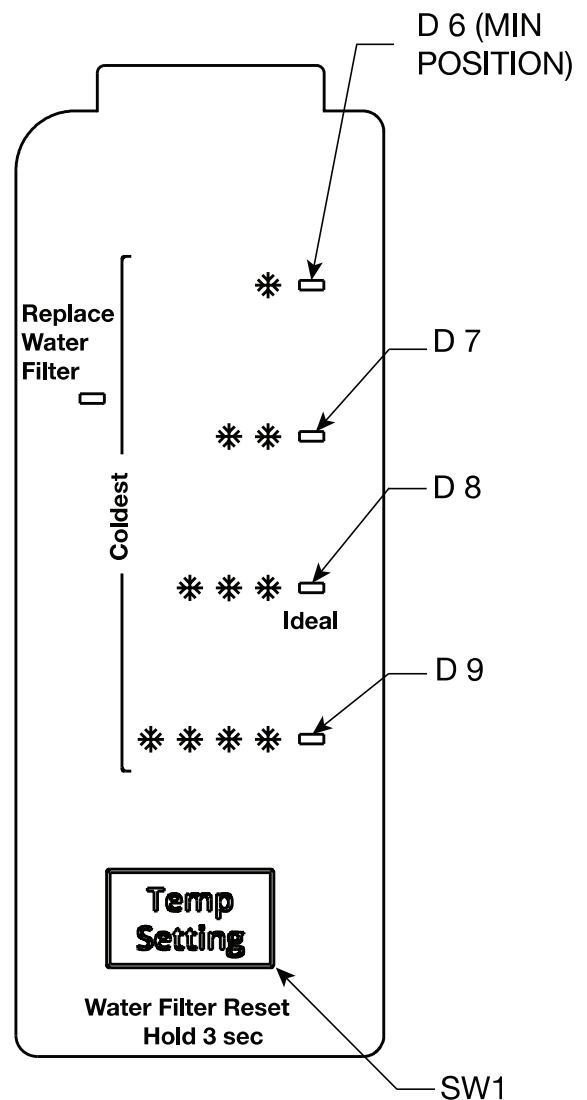
All sensors will be tested without required action from service personnel. This action is taken after the heater off.

After last step press SW1 to exit service mode, user interface will reset to the last mode and start the power-up state.

Switch Press	Display Information				Load
	D 9	D 8	D 7	D 6	
0	□	□	□	□	Start condition
1	□	□	■	□	Compressor On
2	□	□	□	□	Compressor Off
3	□	■	□	□	Heater On
4	□	□	□	□	Heater Off
5	■	□	□	□	Not Used
6	□	□	□	□	Display Fail Message
7	□	■	□	□	Return To Normal OP (Default To Med)

The fail information is shown below with the LEDs turned ON, this will appear in step 6 from the above table.

NOTE: If step 6 shows all LEDs blank means that board drivers and sensors are working correctly.



For Service Technician Use Only

Display Fail Message State Table

Display Information				LEDs ON (No Blinking) when Illuminated
D 9	D 8	D 7	D 6	
☐	☐	☒	☐	Main Board (Heater driver or compressor driver)
☐	☒	☐	☐	Refrigerator Sensor
☒	☐	☐	☐	Defrost Sensor
☒	☒	☐	☐	Refrigerator & Defrost Sensor
☐	☒	☒	☐	Main Board + Refrigerator Sensor
☒	☐	☒	☐	Main Board + Defrost Sensor
☒	☒	☒	☐	Multiple Failures (Sensors + Drivers)

For Display Model Only:

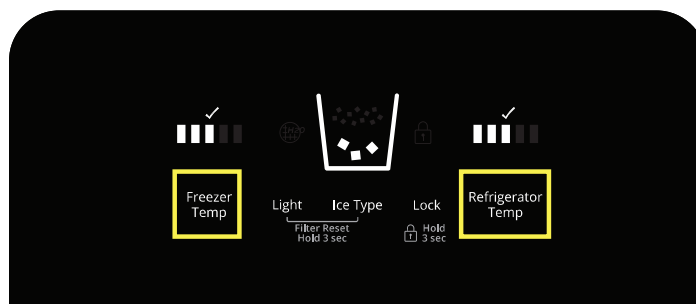
For water filter indicator reset LED test, press and hold TEMP button for 3 seconds until the water filter LED blinks to verify LED function.

For dispenser function, use the wiring diagram for reference to validate all connections and switch operation.

Sales Demo Mode

CUDA 17 IDI & DPLUS

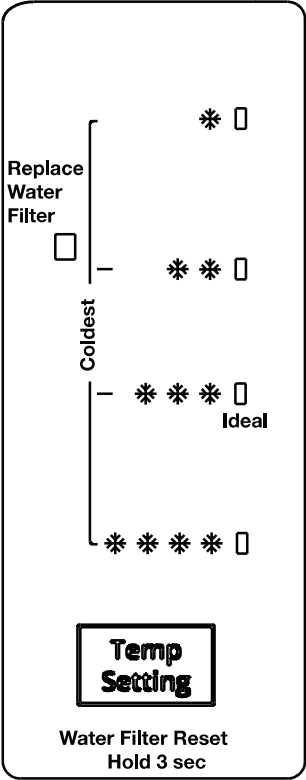
Water Filter Reset & Showroom Mode



SHOWROOM Mode Use Case	System Feedback	Reference
To enter showroom mode 1. Within 2 minutes after power-up, press and hold (RC & FC TEMP keys) for 5 seconds.	The system enters in Showroom mode. UI performs "showroom animation": - All five LEDs (RC & FC TEMP LEDs) turn on one by one from left to right and then right to left and keep cycling. (Cycling rate: 1 cycle per second). - Showroom mode does not activate sleep mode. - If there is no user action during 2 minutes of showroom mode, the animation will stop and then UI behaves (fake) as normal mode. - During the animation, if the user touches any key, the animation will stop and UI behaves as a fake normal mode. - During fake normal mode, after two minutes without user interaction, the animation will start again to indicate that UI is in showroom mode.	Fake normal mode is normal mode with all cooling loads off.
Press (FC TEMP SETTING or RC TEMP SETTING) key in the showroom mode.	The recommended temperature setting (i.e. <colder>) is on. Then UI behaves (fake) as normal mode if the user presses any key again, except that cooling stays off in showroom mode and no temperature setting is saved.	
Press (LIGHT) Key in show room	Behavior will be same as normal operation.	
Press (ICE TYPE) key in show room mode.	Ice-type LED changes between crush when the user presses the Ice Type key.	

For Service Technician Use Only

CUDA 17 D lite & Non Disp
Water Filter Reset & Showroom Mode



Showroom Mode Use Case	System Feedback
To enter showroom mode 1. Within 2 minutes after power-up, toggle (TEMP SETTING) button till <MAX> is on. 2. Hold DOOR SWITCH to simulate door close. 3. Press and hold (TEMP SETTING) for 3 seconds.	The system enters into Showroom mode. UI performs "showroom mode": All four LEDs turns on one by one from top to bottom and then bottom to top and keep cycling. (Cycling rate: 1 cycle per second)
Press (TEMP SETTING) button in showroom mode.	LEDs stop cycling. The recommended temperature setting (i.e. <colder>) is on. Then UI behaves (fake) as normal mode if user presses (TEMP SETTING) button again, except that cooling stays off in the showroom mode and no temperature setting is saved.
User inactivity for 3 seconds	UI returns to "showroom animation".
To exit showroom mode 1. Toggle (TEMP SETTING) button will <MAX> is on. 2. Hold DOOR SWITCH to simulate door close. 3. Press and hold (TEMP SETTING) for 3 seconds.	UI exits showroom mode and returns to normal mode with the default setting.
Power interval during showroom mode.	UI returns to Normal mode after a power reset or power failure.