SECTION 27 41 16

INTEGRATED AUDIO-VIDEO SYSTEMS AND EQUIPMENT

GUIDE SPECIFICATION

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Specifier: Please see PART 4 for a listing of products specified in this Guide Specification.

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# GENERAL

NOT USED in this Guide Specification. Specifier shall Specify PART 1 administrative and procedural requirements as needed.

# PRODUCTS

## AoIP In-Ceiling Speaker

Specifier Note:

*The SAROS DM-NAX-IC4A-W in-ceiling, PoE+, Audio-over IP (AoIP) speaker with a Balanced Mode Radiator (BMR) transducer offers broad coverage angles and simple installation. A single 2.83 in. (72 mm) BMR transducer drives the entire 80 Hz to 24 kHz frequency range, with coverage angles exceeding the capabilities of a traditional conical, pistonic woofer and concentric tweeter. One SAROS DM-NAX-IC4A-W also powers up to three SAROS IC4P-W speakers (sold separately) to act as the hub of a four-speaker system.*

### Basis of Design

#### Crestron DM-NAX-IC4A-W

### Device Definition

#### AoIP speaker with the following capabilities:

##### Support for proprietary AoIP standard, AES67, and Dante

##### Balanced Mode Radiator (BMR) transducer and 25.5 W PoE+ audio amplifier

##### 80 Hz to 24 kHz frequency response

##### 170° coverage for speech content, 140° coverage for music

##### Provides power for up to three (3) passive speakers described in section 2.2

##### Digital Signal Processing (DSP) capabilities configured through web interface:

###### Bass and treble boost and cut

###### Speaker protection and limiting

###### 10-band EQ per output

###### Output delay

##### Speaker mounting facilitated by swiveling mounting dogs, tile bridges, rigging points and safety tether kits

##### UL® 2043 Plenum Rated

### Device Architecture

#### Construction

##### Enclosure

###### Painted steel, plenum-rated

###### 0.75 in. (19 mm) conduit knockout on top and sides, (1) cable clamp included

##### Baffle: ABS UL® 94V-0 plastic

##### Grille: Steel with white textured finish; magnetically held; safety tether included

##### Mounting: Flush ceiling mount using 4 integral 2-step toggle clamps; 2.36 in. (60 mm) maximum clamping thickness; tile bridge included

##### Dimensions

###### Baffle Diameter: 7.49 in. (191 mm) not including mounting clamps

###### Back Can Diameter: 6.33 in. (161 mm) not including mounting clamps

###### Depth: 4.28 in. (109 mm) mounting depth; 4.50 in. (115 mm) including grille

##### Weight: 2.6 lb. (1.2 kg)

##### Environmental Operating Conditions

###### Temperature: 32°F to 104°F (0° to 40°C)

###### Humidity: 10% to 90% RH (non-condensing)

### Functions

#### Features and Performance

##### Transducer: 2.83 in. (72 mm) Balanced Mode Radiator (BMR)

##### Frequency Response: 80 Hz to 24 kHz (±3 dB)

##### Sensitivity: 86 dB @ -18 dBFS/1 m

##### Maximum SPL: 96 dB

##### Maximum SPL Coverage

###### 170° conical (speech, up to 4 kHz)

###### 140° conical (music, up to 8 kHz)

##### BMR Power Handling: 25 W

##### BMR Power Output: Up to 21 W

##### EQ Filter Types: EQ, High Pass, Low Pass, Treble Shelf, Bass Shelf, Notch

##### EQ Center Frequency: 10 to 20,000 Hz per band

##### EQ Gain: +20/-40 dB per band

##### EQ Bandwidth: 0.1 to 4.0 octaves per band

### Connectors

#### SPEAKER-LEVEL OUTPUTS 2-4

##### (3) 8-pin RJ-45 connectors, female

##### Speaker-level audio output only for use with passive speaker outlined in section 2.2

##### Plenum-rated patch cable by same manufacturer available, run length 32 ft. (10 m) or shorter

Specifier Note:

*Only straight-through wiring should be used for the Category cable connection between the SAROS DM-NAX-IC4A-W and any connected SAROS IC4P-W speakers. Do not use a crossover cable; crossover wiring may cause damage to the components of the SAROS IC4P-W speaker. Perform a pin-out and continuity test on the cable before installation to ensure the cable is wired straight-through.*

#### Network/PoE+

##### (1) 8-pin RJ-45 connector, female

##### 100BASE-TX/1000BASE-T Ethernet port

##### PoE+ PD (powered device) port

##### IEEE 802.3at Type 2 PoE+ Class 4 (25.5 W) compliant

##### Receives up to two stereo proprietary (by same manufacturer) AoIP streams or two stereo AES67 streams

### Controls and Indicators

#### Ethernet

##### (2) Bi-color green/amber LEDs; Left LED indicates Ethernet link status, Right LED indicates Ethernet activity

#### Power

##### (1) Bi-color white/red LED; behavior determined via web UI configuration

##### White indicates that the device is powered on with audio passing or that signal is present

##### Red indicates that the device is in standby mode, that a fault is present, or that SETUP is pressed

##### Off indicates no power from the power supply or that the LED has been disabled from the web UI

#### SETUP

##### (1) Recessed push button

##### Pressing and holding the SETUP button for 15 seconds with power supplied clears network settings and restores the default DHCP mode

##### Pressing and holding the SETUP button with power disconnected, then connecting the power supply and continuing to hold SETUP for 30 seconds will perform a factory restore

### Power

#### PoE+: IEEE 802.3at Type 2 Class 4 (25.5 W) compliant

### Compliance

#### Regulatory Model: M202010001

#### FCC Part 15 Class B, IC Class B, CE, UL® 2043

## Passive Full-Range In-Ceiling Speaker

Specifier Note:

*The SAROS IC4P-W in-ceiling speaker with a Balanced Mode Radiator (BMR) transducer offers broad coverage angles and simple installation. A single 2.83 in. (72 mm) BMR transducer drives the entire 90 Hz to 30 kHz frequency range, with coverage angles exceeding the capabilities of a traditional conical, pistonic woofer and concentric tweeter.*

### Basis of Design

#### Crestron SAROS IC4P-W

### Device Definition

#### Passive Full-Range In-Ceiling speaker with the following capabilities:

##### Reception of signal from AoIP speaker outlined in section 2.1

##### Balanced Mode Radiator (BMR) transducer

##### 90 Hz to 30 kHz frequency response

##### 170° coverage for speech content, 140° coverage for music

##### Speaker mounting facilitated by swiveling mounting dogs, tile bridges, rigging points and safety tether kits

##### UL® 2043 Plenum Rated

### Device Architecture

#### Construction

##### Enclosure

###### Painted steel, plenum-rated

###### 0.75 in. (19 mm) conduit knockout on top and sides, (1) cable clamp included

##### Baffle: ABS UL® 94V-0 plastic

##### Grille: Steel with white textured finish; magnetically held; safety tether included

##### Mounting: Flush ceiling mount using 4 integral 2-step toggle clamps; 2.36 in. (60 mm) maximum clamping thickness; tile bridge included

##### Dimensions

###### Baffle Diameter: 7.49 in. (191 mm) not including mounting clamps

###### Back Can Diameter: 6.33 in. (161 mm) not including mounting clamps

###### Depth: 4.28 in. (109 mm) mounting depth; 4.50 in. (115 mm) including grille

##### Weight: 2.35 lb. (1.2 kg)

##### Environmental Operating Conditions

###### Temperature: 32°F to 104°F (0° to 40°C)

###### Humidity: 10% to 90% RH (non-condensing)

### Functions

#### Features and Performance

##### Transducer: 2.83 in. (72 mm) Balanced Mode Radiator (BMR)

##### Frequency Response: 90 Hz to 30 kHz (±3 dB)

##### Sensitivity: 86 dB @ 1 W/1 m

##### Maximum SPL: 96 dB

##### Maximum SPL Coverage

###### 170° conical (speech, up to 4 kHz)

###### 140° conical (music, up to 8 kHz)

##### BMR Power Handling: 25 W

##### BMR Max Power Output:

###### 25 W, connected to an external amplifier via 2-pin audio input

###### 10 W, connected to the SPEAKER-LEVEL OUTPUT of AoIP speaker outlined in section 2.1

###### 6.5 W, connected to the SPEAKER-LEVEL OUTPUT of AoIP speaker outlined in section 2.1 with one other speaker as described in section 2.2 connected

###### 4.5 W, connected to the SPEAKER-LEVEL OUTPUT of AoIP speaker outlined in section 2.1 with two other speakers as described in section 2.2 connected

### Connectors

#### 2-Pin Audio Input

##### (1) 2-pin 5 mm detachable terminal block, speaker input (alternate)

##### For use with an external amplifier

##### Impedance: 8 Ω (7.4 Ω nominal)

##### Maximum Wire Size: 12 AWG

##### Do not connect this input and input outlined in section 2.2.5.2 simultaneously

#### RJ-45 Audio Input

##### (1) 8-pin RJ-45 connector, female; only for use with AoIP speaker outlined in section 2.1

Specifier Note:

*Only straight-through wiring should be used for the Category cable connection between the SAROS DM-NAX-IC4A-W and any connected SAROS IC4P-W speakers. Do not use a crossover cable; crossover wiring may cause damage to the components of the SAROS IC4P-W speaker. Perform a pin-out and continuity test on the cable before installation to ensure the cable is wired straight-through.*

### Controls and Indicators

#### Power

##### (1) White LED, behavior determined via web UI configuration in AoIP speaker outlined in section 2.1

##### Solid indicates that the device is paired with AoIP speaker outlined in section 2.1

##### Blinking indicates that the device is in identify mode

##### Off indicates the device is not paired with AoIP speaker outlined in section 2.1 or that the LED has been disabled from web UI on said AoIP speaker

### Compliance

#### Regulatory Model: M202010001

#### FCC Part 15 Class B, IC Class B, CE, UL® 2043

# EXECUTION

NOT USED in this Guide Specification. Specifier shall Specify PART 3 On-Site work as needed.

# APPENDICES

## SPECIFIED PRODUCTS

Specifier Note: This Article includes Crestron products specified in this Guide Specification document. This Article is for reference only and should not be required in actual project manual unless included in an overall system equipment list.

### Crestron SAROS DM-NAX-IC4A-W

### Crestron SAROS IC4P-W