

Project		Catalog #		Type	
Prepared by		Notes		Date	



# Shaper

## Shaper Sense™ Box

Acoustic Lighting  
Pendant Luminaire  
Suspended Direct/Indirect

### Typical Applications

- Office • Education • Healthcare • Hospitality • Retail • Co-working

Compliance and Award Winning Family

Systems | Certification | Partnerships | Awards



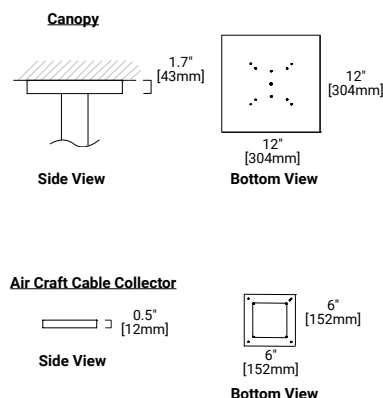
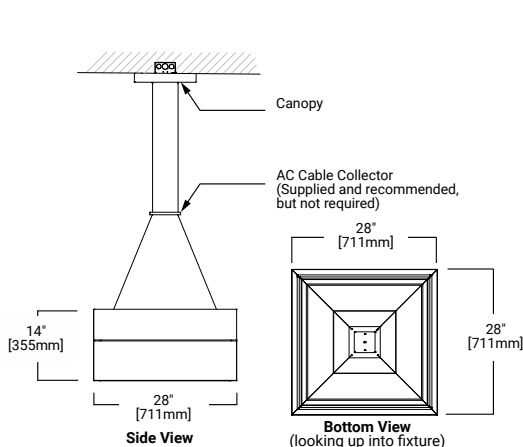
### Interactive Menu

- Order Information page 2-3
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- Acoustic Analysis page 6
- Sensor Coverage page 7
- Product Warranty

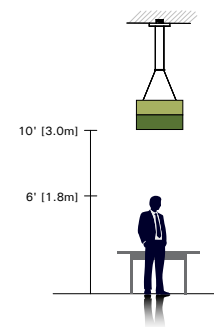
### Top Product Features

- Shaper Sense™ is an award winning and patented acoustic lighting product series that merges the concepts of light and sound absorption.
- Light is created by an edge-lit square LED panel with an array of patterns that produce uniform visual distribution.
- Sound absorbing acoustic panels are designed with industry leading [FilzFelt™](#) acoustic materials.
- Available in 96 vibrant felt colors using 100% Wool Design Felt - 100% recyclable.
- Noise Reduction Coefficient (NRC) = 1.2, Sound Absorption Average (SAA) = 1.19. Learn more at [Noise at Work, Knoll - Workplace Research](#).
- Select top panel felt colors and bottom panel felt colors.
- Options to meet Buy American Act requirements

### Dimensions



### Scale



additional product diagrams

## Order Information

FIXTURE NUMBER SAMPLE: **ShSe-BOX-1-L40-80-UNV-CNPY-STD-TP300-BP170**

Domestic Preferences	Series	Shape / Family	Light Level (Lumens, Wattage, Color Temp, CRI)	Voltage	Mounting	Dimming	Finish	Controls (optional)
Domestic Preferences	Series	Shape / Family	Light Level / CCT / CRI (Lumens Wattage, Color Temp, CRI)	Voltage	Mounting	Dimming	Finish	Controls
<b>Blank</b> =Standard <b>BAA</b> =Buy American Act	<b>ShSe</b> =Shaper Sense	<b>BOX</b> =Box shaped acoustic light fixture	1- <b>L30-90</b> =2480 lumens, 30W, 3000K, 90 CRI 1- <b>L35-80</b> =3084 lumens, 30W, 3500K, 80 CRI 1- <b>L40-80</b> =3028 lumens, 30W, 4000K, 80 CRI 2- <b>L30-90</b> =3172 lumens, 39W, 3000K, 90 CRI 2- <b>L35-80</b> =3944 lumens, 39W, 3500K, 80 CRI 2- <b>L40-80</b> =3873 lumens, 39W, 4000K, 80 CRI	<b>UNV</b> =Universal Voltage (120-277)	<b>CNPY</b> =Canopy mount (works for surface, open structure, and gypsum ceilings)	<b>STD</b> =0-10V	(See below and page 3 for panel and color selections)	<b>SWTPD1</b> =Wavelinx Wireless Tile Sensor <b>LWTPD1</b> =LumaWatt Pro Wireless Tile Sensor
<b>Notes</b> Only product configurations with this designated prefix are built to be compliant with the Buy American Act of 1933 (BAA). Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.	<b>Notes</b>	<b>Notes</b>	<b>Notes</b> 3000K – only in 90 CRI, 3500K only available in 80 CRI, 4000K only available in 80 CRI.	<b>Notes</b>	<b>Notes</b>	<b>Notes</b>	<b>Notes</b>	<b>Notes</b>

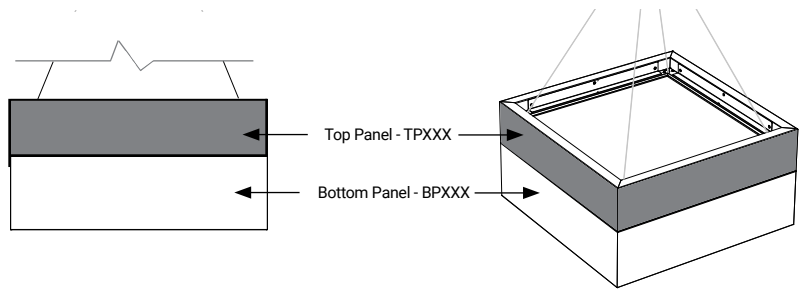
### Top Panel Selection (TP)

### Bottom Panel Selection (BP)

Top Panel Selection (TP)		Bottom Panel Selection (BP)	
Finish			
<b>TP487</b> =Pflirsich <b>TP023</b> =Koralle <b>TP945</b> =Drachenfrucht <b>TP221</b> =Himbeere <b>TP136</b> =Weinrot <b>TP209</b> =Bordeaux <b>TP102</b> =Kirsche <b>TP201</b> =Rot <b>TP125</b> =Tomate <b>TP179</b> =Hellrot <b>TP180</b> =Terracotta <b>TP173</b> =Mango <b>TP105</b> =Rost <b>TP573</b> =Kupfer <b>TP116</b> =Orange <b>TP495</b> =Abricot <b>TP124</b> =Gelb <b>TP131</b> =Honig <b>TP509</b> =Kamel <b>TP550</b> =Ocker <b>TP274</b> =Senf <b>TP108</b> =Zitrone <b>TP403</b> =Mais <b>TP535</b> =Sesam <b>TP203</b> =Vanille <b>TP027</b> =Kartause <b>TP384</b> =Lind <b>TP713</b> =Kiwi <b>TP377</b> =Maigrün <b>TP732</b> =Farn <b>TP378</b> =Oliv <b>TP260</b> =Sprießen <b>TP156</b> =Loden <b>TP343</b> =D'Grün <b>TP435</b> =Smaragd <b>TP625</b> =Pinie <b>TP248</b> =Jade <b>TP472</b> =Minze <b>TP575</b> =Salbei <b>TP483</b> =Adria <b>TP548</b> =Türkis <b>TP312</b> =Lagune <b>TP345</b> =Pazifik <b>TP308</b> =Petrol <b>TP698</b> =Dunst <b>TP405</b> =Stahl <b>TP215</b> =Meer <b>TP540</b> =Ozean	<b>TP533</b> =Indigo <b>TP282</b> =D'Blau <b>TP111</b> =Traube <b>TP626</b> =Azur <b>TP647</b> =Kobalt <b>TP686</b> =Enzian <b>TP272</b> =Royal <b>TP286</b> =H'Blau <b>TP995</b> =Wasser <b>TP458</b> =Bekwölkt <b>TP284</b> =Himmel <b>TP613</b> =Gletscher <b>TP551</b> =Eis <b>TP113</b> =Immergrün <b>TP099</b> =Lila <b>TP667</b> =Amethyst <b>TP242</b> =Pink <b>TP640</b> =Granat <b>TP634</b> =Erröten <b>TP671</b> =Pfungstrose <b>TP255</b> =Flieder <b>TP269</b> =Violett <b>TP437</b> =Aubergine <b>TP250</b> =Trüffelbraun <b>TP220</b> =Rehbraun <b>TP411</b> =Alpaka <b>TP190</b> =Natur-meliert <b>TP200</b> =Natur <b>TP331</b> =Sahara <b>TP311</b> =Mandel <b>TP467</b> =Sand <b>TP481</b> =Sandstein <b>TP100</b> =Wollweiss <b>TP110</b> =Rohweiss <b>TP160</b> =Beige <b>TP529</b> =Champagner <b>TP150</b> =Weiss <b>TP428</b> =Silber <b>TP427</b> =Stein <b>TP021</b> =Beton <b>TP170</b> =Asche <b>TP423</b> =Hellgrau <b>TP408</b> =Taupe <b>TP175</b> =Graphit <b>TP425</b> =Taubengrau <b>TP446</b> =Kohle <b>TP300</b> =Anthrazit <b>TP426</b> =Schwarz	<b>BP487</b> =Pflirsich <b>BP023</b> =Koralle <b>BP945</b> =Drachenfrucht <b>BP221</b> =Himbeere <b>BP136</b> =Weinrot <b>BP209</b> =Bordeaux <b>BP102</b> =Kirsche <b>BP201</b> =Rot <b>BP125</b> =Tomate <b>BP179</b> =Hellrot <b>BP180</b> =Terracotta <b>BP173</b> =Mango <b>BP105</b> =Rost <b>BP573</b> =Kupfer <b>BP116</b> =Orange <b>BP495</b> =Abricot <b>BP124</b> =Gelb <b>BP131</b> =Honig <b>BP509</b> =Kamel <b>BP550</b> =Ocker <b>BP274</b> =Senf <b>BP108</b> =Zitrone <b>BP403</b> =Mais <b>BP535</b> =Sesam <b>BP203</b> =Vanille <b>BP027</b> =Kartause <b>BP384</b> =Lind <b>BP713</b> =Kiwi <b>BP377</b> =Maigrün <b>BP732</b> =Farn <b>BP378</b> =Oliv <b>BP260</b> =Sprießen <b>BP156</b> =Loden <b>BP343</b> =D'Grün <b>BP435</b> =Smaragd <b>BP625</b> =Pinie <b>BP248</b> =Jade <b>BP472</b> =Minze <b>BP575</b> =Salbei <b>BP483</b> =Adria <b>BP548</b> =Türkis <b>BP312</b> =Lagune <b>BP345</b> =Pazifik <b>BP308</b> =Petrol <b>BP698</b> =Dunst <b>BP405</b> =Stahl <b>BP215</b> =Meer <b>BP540</b> =Ozean	<b>BP533</b> =Indigo <b>BP282</b> =D'Blau <b>BP111</b> =Traube <b>BP626</b> =Azur <b>BP647</b> =Kobalt <b>BP686</b> =Enzian <b>BP272</b> =Royal <b>BP286</b> =H'Blau <b>BP995</b> =Wasser <b>BP458</b> =Bekwölkt <b>BP284</b> =Himmel <b>BP613</b> =Gletscher <b>BP551</b> =Eis <b>BP113</b> =Immergrün <b>BP099</b> =Lila <b>BP667</b> =Amethyst <b>BP242</b> =Pink <b>BP640</b> =Granat <b>BP634</b> =Erröten <b>BP671</b> =Pfungstrose <b>BP255</b> =Flieder <b>BP269</b> =Violett <b>BP437</b> =Aubergine <b>BP250</b> =Trüffelbraun <b>BP220</b> =Rehbraun <b>BP411</b> =Alpaka <b>BP190</b> =Natur-meliert <b>BP200</b> =Natur <b>BP331</b> =Sahara <b>BP311</b> =Mandel <b>BP467</b> =Sand <b>BP481</b> =Sandstein <b>BP100</b> =Wollweiss <b>BP110</b> =Rohweiss <b>BP160</b> =Beige <b>BP529</b> =Champagner <b>BP150</b> =Weiss <b>BP428</b> =Silber <b>BP427</b> =Stein <b>BP021</b> =Beton <b>BP170</b> =Asche <b>BP423</b> =Hellgrau <b>BP408</b> =Taupe <b>BP175</b> =Graphit <b>BP425</b> =Taubengrau <b>BP446</b> =Kohle <b>BP300</b> =Anthrazit <b>BP426</b> =Schwarz
<b>Notes</b> Selection for BOX top panel color. See diagram on page 3 for clarification.		<b>Notes</b> Selection for BOX bottom panel color. See diagram on page 3 for clarification.	

## Ordering Information

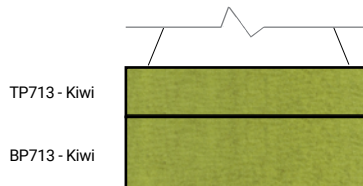
- Select a color for the Top Panel and a color for the Bottom Panel
- For contrasting colors, choose different colors for the top panel and the bottom panel.
- For a monochromatic effect, select the same color for both top and bottom panels.
- For complete catalog number, select a Top Panel (TPXXX) and Bottom Panel (BPXXX) number.



Select TBXXX for Top Panel + Color Selection from chart.  
 Select BPXXX for Bottom Panel + Color Selection from chart.  
 XXX = 3 digit code from FilzFelt color chart options (see below).

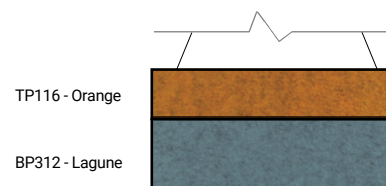
### EXAMPLE OF MONO-TONE

Top Panel TP713 = 713 Kiwi and Bottom Panel BP713 = 713 Kiwi

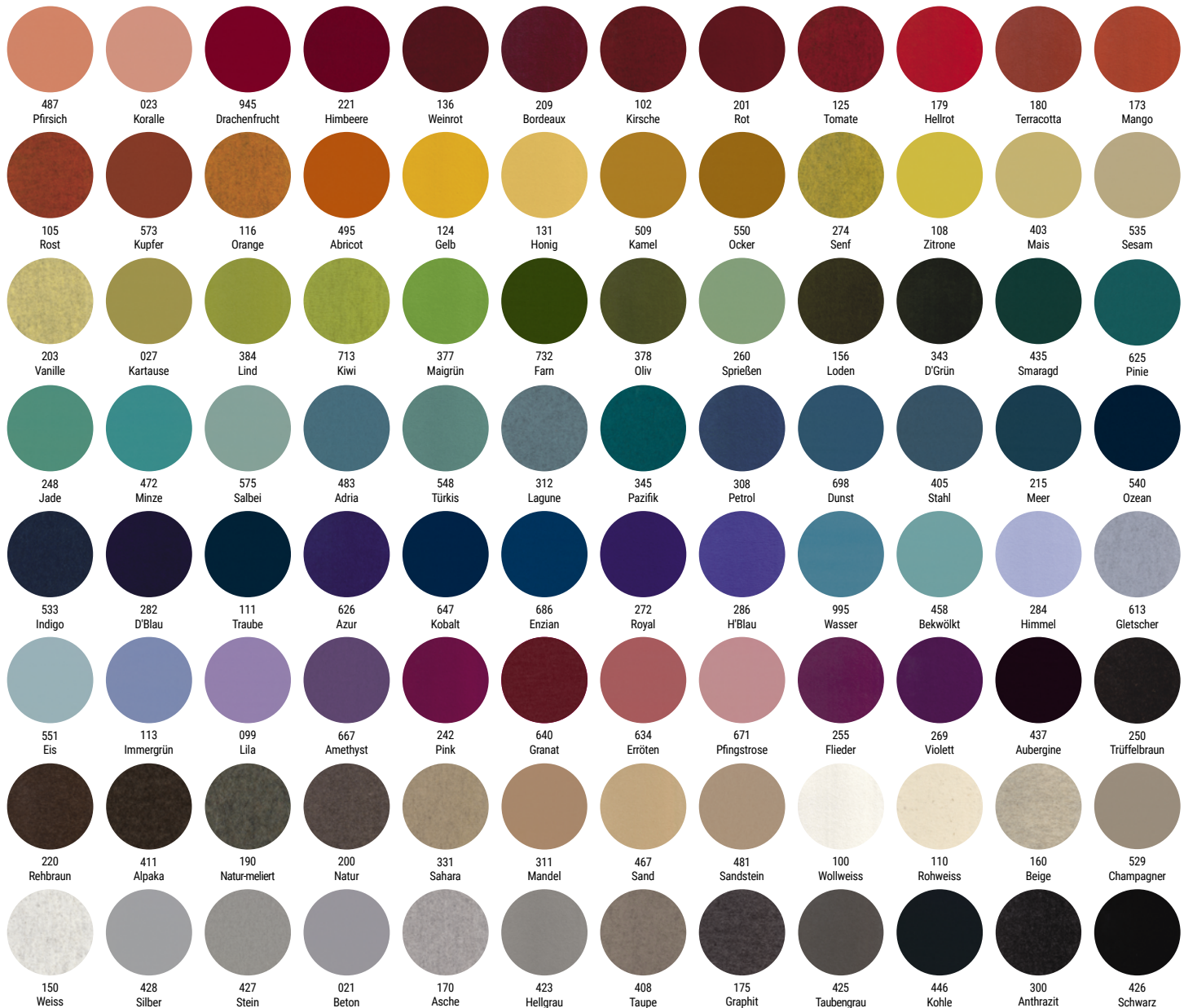


### EXAMPLE OF TWO-TONE

Top Panel TP116 = 116 Orange and Bottom Panel BP312 = 312 Lagune



## FILZFELT COLOR CHART OPTIONS



## Product Specifications

### Construction

- Light Engine is 6063-T5 extruded aluminum and 20 gauge cold rolled steel frame
- Acoustic Light Fixture is supported with max load 132lb cable
- Weight: 25lbs fully assembled

### Electrical

- Standard driver features electronic universal voltage (120-277V/ 50-60 Hz), greater than 0.9 power factor
- Less than 20% harmonic distortion, and ambient temperature of 25°C (77°F). 0-10V dimming standard

### LED Optics

- Light Engine is 85% transparent
- LPW 100+ in some 3500K and 4000K configurations
- Light Engine offered in 80 CRI for 3500K and 4000K CCTs, and in 90 CRI for 3000K CCT

### Mounting

- Acoustic Light Fixture supported by aircraft cable. 12ft adjustable AC cable supplied
- Recommended minimum height of 15" from AC cable collector to Light Engine
- Driver box assembly can mount to any ceiling type: open structure, gyp., or acoustic tile

- Acoustic Light fixture can be supported by junction box supporting 50lb load
- Low voltage cable connects to remote driver box assembly
- AC Cable Collector recommended but not required

### Finish

- Light Engine - Housing is white powder coat paint for superior protection against fade and wear
- Acoustic Panels - 96 felt color choices using 100% Wool Design Felt for both top and bottom panels
- Sound absorbing substrate is made of a minimum 60%+ recycled content and is 100% recyclable

### Compliance

- Light Engine components are UL recognized and are cULus listed for 25°C ambient environments, dry listed
- Acoustic Light Fixture tested per IESNA LM-79
- LM-80 data supplied by LED manufacturer and utilized in TM-21 lumen maintenance projections
- Acoustic Light Fixture tested to ASTM 423C-17 standards and FCC compliant
  - Noise Reduction Coefficient - NRC = 1.2
  - Sound Absorption Average - SAA = 1.19
  - Apparent NRC and SAA values calculated from using total test area occupied by light fixtures

### Environment

- Indoor only, dry listing
- 25°C ambient temperature

### Control

- 0-10V dimming standard
- Optional - WaveLinx and Lumawatt Pro wireless control systems

### Maintenance

- Cleaning of FilzFelt acoustic materials found [here](#)

### Awards

- Best of NeoCon : Gold Lighting: Decorative and Hospitality
- 2019 IES Progress Report, selection
- Architect Magazine Spring 2019, selection
- Architectural SSL Magazine, Product Innovation Award (PIA) 2019
- Architectural Products Magazine, Product Innovation Award (PIA) 2019
- LED Magazine, Sapphire Award Finalist

### Warranty

- Five year warranty standard

## Acoustic Material Maintenance: Cleaning and Health Features

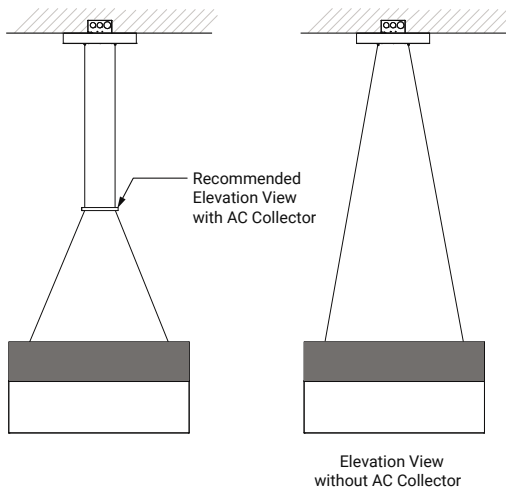


- A health benefit to using FilzFelt materials, is the ability for the material to be steam cleaned up to 200 deg F (93.3 deg C). This protects the space by ensuring that bacteria and viruses don't live on these surfaces, but allows the material to meet the needs of spaces today.
- The acoustic sound absorption substrate material used in Shaper Sense products are cleanable by bleach and other disinfectants. This makes the materials suitable for clean environments.

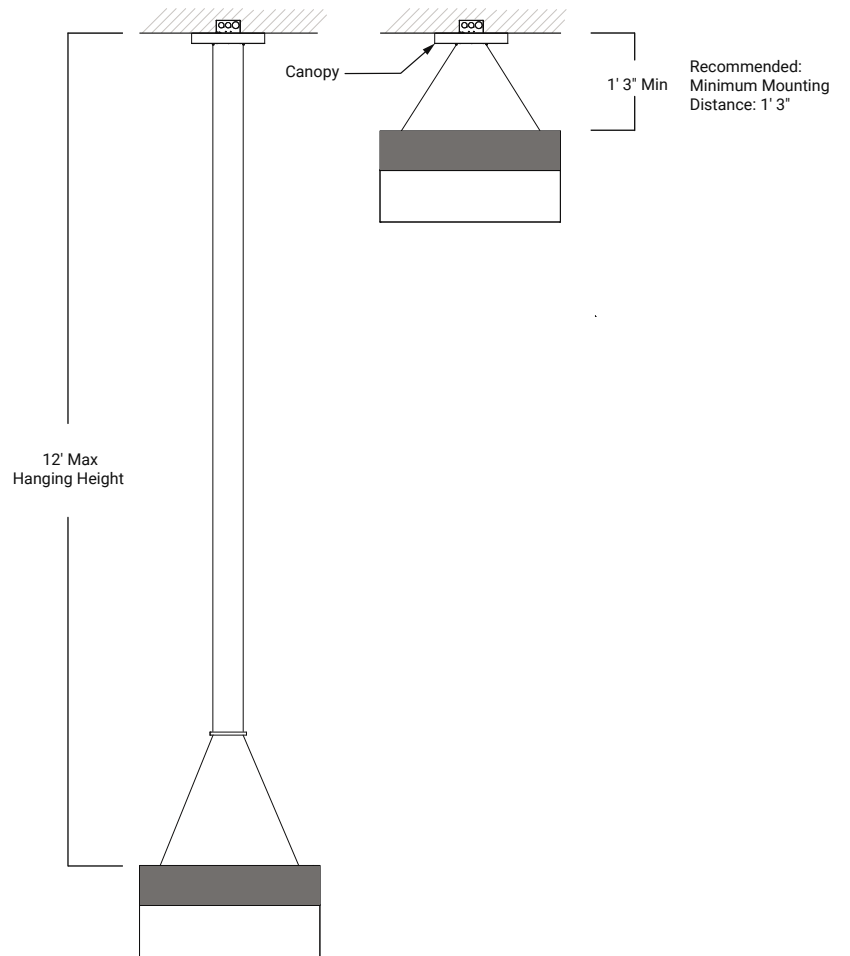
	Felt	Acoustic Substrate
General Cleaning	Vacuum occasionally to remove general air- borne debris. Spot clean with a mild enzyme- based detergent (such as Tide Free) and water solution. Avoid aggressive rubbing as this can continue the felting process and change the surface appearance of the felt.	Vacuum occasionally to remove general air- borne debris. Spot clean with a mild soap (such as Dawn) and water solution.
Deep Cleaning	Professionally steam clean	Wipe with 10:1 water- to-household bleach solution*.

## Mounting Information and Recommendations

Collector is recommended but not required



Maximum and Minimum Hanging Heights



## Photometric Data

SHAPER SENSE - BOX @ 3000K / 90 CRI		
Filename	ShSe-BOX-2-L30-90-UNV-STD.ies	<b>Color Vector Graphic</b> 
Test No.	P316050	
Lumcat	ShSe-BOX-2-L30-90-UNV-STD	
Lumens	3172 Lm	
Watts	38.8 W	
LPW	95.5 Lm/W	
CCT	3000K	
SC (0/90/45)	3.21 / 2.21 / 2.38	
		<b>TM-30-15</b>
		R <sub>f</sub> 91.7
		R <sub>g</sub> 99.7
		64% up 36% down

SHAPER SENSE - BOX @ 3500K / 80 CRI		
Filename	ShSe-BOX-2-L35-80-UNV-STD.ies	<b>Color Vector Graphic</b> 
Test No.	P316051	
Lumcat	ShSe-BOX-2-L35-80-UNV-STD	
Lumens	3944 Lm	
Watts	38.8 W	
LPW	118.8 Lm/W	
CCT	3500K	
SC (0/90/45)	3.21 / 2.21 / 2.38	
		<b>TM-30-15</b>
		R <sub>f</sub> 81
		R <sub>g</sub> 95.9
		64% up 36% down

SHAPER SENSE - BOX @ 4000K / 80 CRI		
Filename	ShSe-BOX-2-L40-80-UNV-STD.ies	<b>Color Vector Graphic</b> 
Test No.	P316052	
Lumcat	ShSe-BOX-2-L40-80-UNV-STD	
Lumens	3873 Lm	
Watts	38.8 W	
LPW	116.6 Lm/W	
CCT	4000K	
SC (0/90/45)	3.21 / 2.21 / 2.38	
		<b>TM-30-15</b>
		R <sub>f</sub> 81
		R <sub>g</sub> 95.9
		64% up 36% down

## Lumen Maintenance

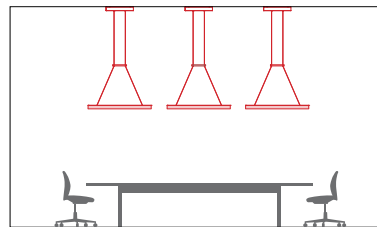
Ambient Temperature	Lumen Maintenance: TM-21 (60,000 Hours)	Theoretical L70 (H <sub>0</sub> )
25°C	> 89%	> 60,000

## Acoustic Analysis - Reverberation Decrease

Reverberation Time example. Acoustic test reports available by request.

### RT60 : Light Fixtures without sound absorption

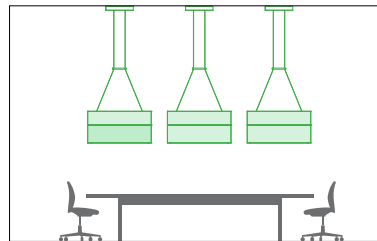
Frequency (Hz)						Avg
125	250	500	1000	2000	4000	250-2k
0.76	0.97	1.15	1.11	0.91	0.85	1.04



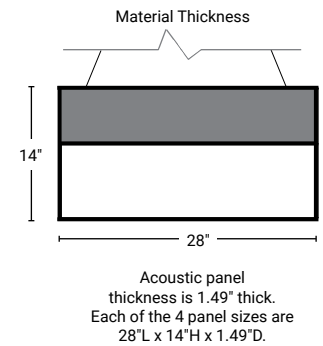
6 fixture comparison

### RT60 : Light Fixtures with sound absorption

Frequency (Hz)						Avg
125	250	500	1000	2000	4000	250-2k
0.67	0.82	0.84	0.74	0.64	0.62	0.76



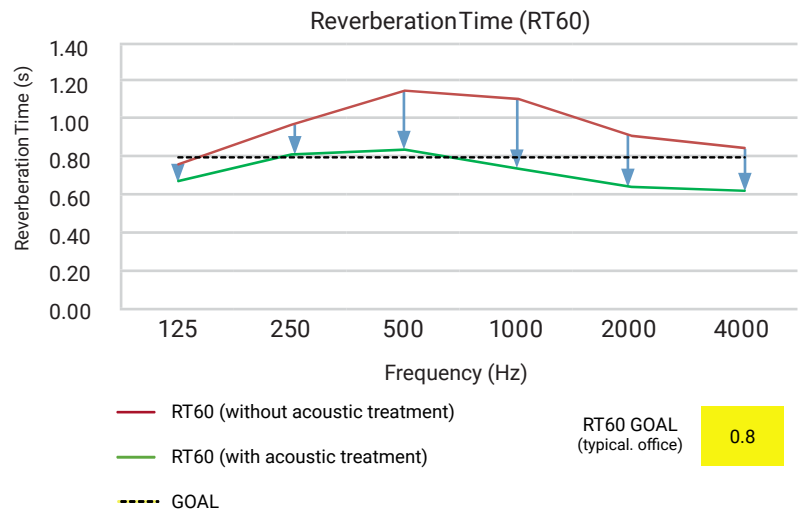
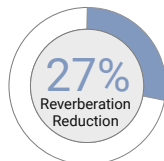
Reverberation: prolongation of a sound; resonance.  
 Reverberation Time (RT60): Reverberation time is a measure of the time required for the sound to decay or sound pressure level to reduce by 60 dB.



### % Improvement in Reverberation (RT60)

Frequency (Hz)						Avg
125	250	500	1000	2000	4000	250-2k
12%	16%	27%	33%	30%	27%	27%

Ex. 27% Reverberation decrease (RT60) using 6 Shaper Sense Box fixtures.



## Connected Control (Optional)

WaveLinX (SWPD1) Wireless Sensor and LumaWatt Pro (LWIPD1) Ordering Information.

Product Family	Occupancy Technology	Sensing Technology	Coverage Pattern
<b>SWT</b> = WaveLinX Wireless Sensor <b>LWT</b> = LumaWatt Pro Wireless Sensor	<b>P</b> = Passive Infrared	<b>D</b> = Dimming Daylight Harvesting (Closed Loop)	<b>1</b> = ~ 144 Square Feet

### WaveLinX

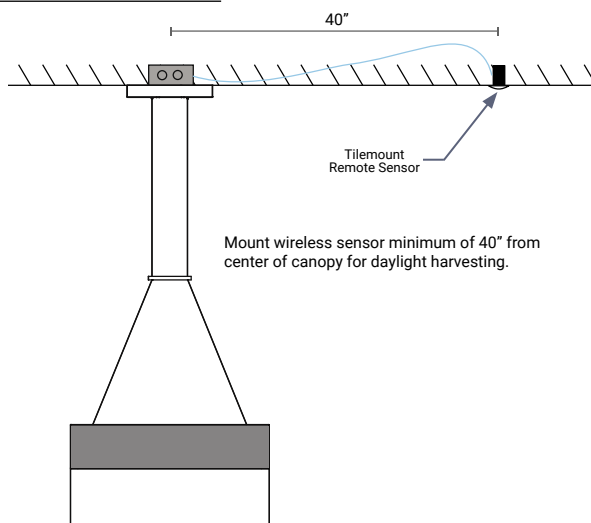
The WaveLinX Tilemount sensor option is an integral part of the WaveLinX Wireless Connected Lighting System. It offers 3 amp relay control and continuous 0-10V dimming of Shaper Sense luminaires. The tilemount sensor provides daylight dimming and control for a single luminaire or can be daisy chained for group luminaire control. The sensor's control module allows simple electrical junction box mounting via a 1/2" knockout or direct connection to the junction box attached to the Shaper luminaire. The WaveLinX Tilemount sensor operates on a wireless mesh network based on IEEE 802.15.4 standards and is controlled by a WaveLinX Wireless Area Controller.

### LumaWatt Pro

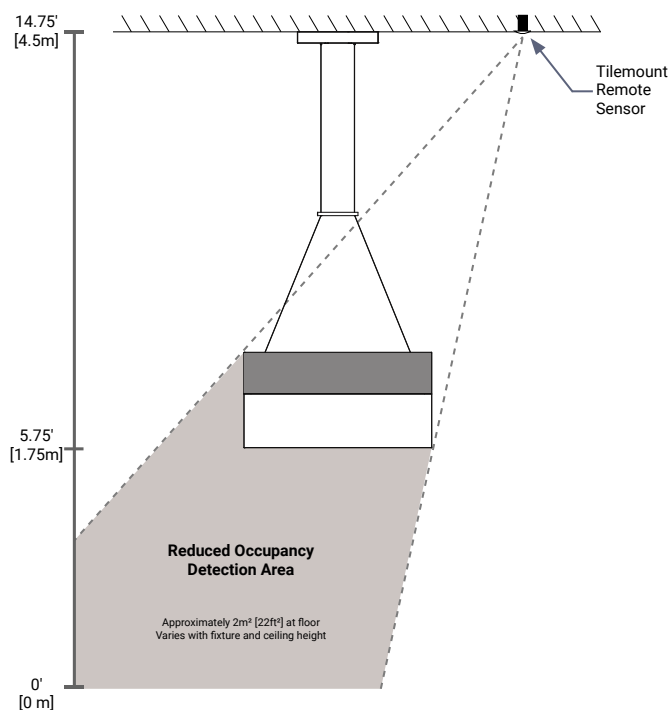
The LumaWatt Pro Tilemount sensor option is field installed to a single luminaire's junction box or daisy chained to a group of luminaires, providing lighting control and sensing in an independent, fault-proof, resilient network of powerful end-points. Sensors have profiles stored internally containing all of the variables for the application once a configuration is set and is able to manage the fixture without connectivity to the system. The sensors gather data from four on-board inputs: Passive infrared occupancy detection, daylight, temperature, and electrical current use. Wireless gateways communicate with the sensors and transmit the data using industry-standard wired technology to the Energy Manager, for powerful, familiar dashboards of information tailored for access on a connected computer. Energy Managers connect to optional cloud-based applications, maximizing the dense, data-rich sensing within the footprint of the luminaire for management of the building environment, and much more.

## Sensor Mounting and Coverage

Daylight Harvesting - Recommended mounting

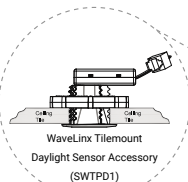
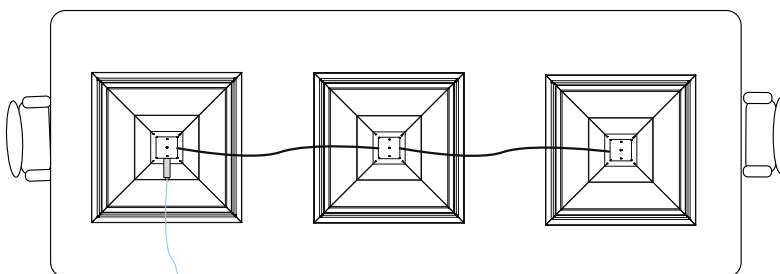


Occupancy Detection - Coverage



## Wireless Sensor Example Layout

Daisy-chain switching control and 0-10V dimming up to 360W of luminaires per sensor



54" plenum rated sensor cable