

# A-dec<sup>®</sup> 411 Dental Chair and Related Systems



A-dec 411 Chair with 333 Delivery System,  
551 Assistant's, 461 Cuspidor, 482 Monitor Mount,  
572L Dental Light

This document contains technical specifications for installing the A-dec 411 chair and related systems.

## Product Models and Versions Covered in this Document

Model	Versions	Description
351	B	Assistant's Instrumentation
352/353/551	A	Assistant's Instrumentation
551sta	n/a	Assistant's Instrumentation
332/333/336	A	Delivery System
332pro/333pro/334pro 335pro/336pro	n/a	Delivery System
334/335/336	B	Delivery System
411	A	Dental Chair
371L/372L/571L/572L	A	Dental Light
381/382/482	A	Monitor Mount
362/461	A	Support Center and Cuspidor

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**NOTE** Job site construction should be completed before the dental equipment installation (including finished floors, ceiling, plumbing, lighting, paint, etc.).

### Dental Patient Chair Interface Requirement

The dental chair requires a solid, level mounting surface that meets these minimum specifications:

- Weight of 1000 lb (4448 N) for the chair, dental light, delivery system, and patient.
- Capability to anchor the chair to the floor, with a minimum pullout load of 100 lb (445 N) for one anchor-bolt.

## Utility Requirements



**CAUTION** Local regulation may require licensed plumbers and electricians to install the utilities. All plumbing and utilities must conform to prevailing local codes.



**CAUTION** The manner and method for accessing the utilities within the wall is the responsibility of the design team working on the project (dental dealer, architectural services, and contractors). Utilities must be accessible without the use of tools.

### Air

- 1/2" (13 mm) nominal pipe compression fitting protruding 2" (51 mm) from the finished floor or wall, supplied by the contractor.
- Right angle manual shut-off valve supplied by the dental dealer and installed by the contractor.
- Air pressure and flow of 80-125 psi (550-860 kPa), 2.5 scfm. (71 sl/min) during normal use; 7.5 scfm (210 sl/min) peak intermittent flow.
- Air plumbing to be flushed clean before the final connection to the dental equipment.

### Water



**NOTE** The delivery system comes with a self-contained water bottle. Municipal water is only required if the equipment configuration includes a cuspidor or if the facility has special requirements.

- 1/2" (13 mm) nominal pipe compression fitting protruding 2" (51 mm) from the finished floor or wall, supplied by the contractor.
- Right angle manual shut-off valve supplied by the dental dealer and installed by the contractor.
- Water pressure and flow of 60 ± 20 psi (410 ± 140 KPa), 1.5 gpm (5.7 L/min), not to exceed 104°F (40°C).
- Water plumbing to be flushed clean before the final connection to the dental equipment.

### Electrical

- 1/2" (13 mm) conduit and electrical box with a hospital-grade quad power receptacle (supplied by the contractor).

- Wire box to conform to local codes.
- Top of quad box should not be higher than 5" (127 mm) above the finished floor to fit within the floor box.
- Voltage: 120 volts, 3 wire.
- 110-120 VAC, 50-60 Hz, 15 Amp mains breaker min.



**NOTE** The A-dec 411 chair is rated at 10 Amps max.

- The 10 Amp rating breaks down as follows for 120 VAC @ 60 Hz:
  - 3.5 Amps for the chair pump motor to move the chair base up.
  - 1.0 Amps for the chair back motor to move the chair back up or down.
  - 2.5 Amps for the 300-watt power supply (located in the utility area) to power the chair-mounted dental light and other ancillaries.
  - 3 Amps of additional current for mains voltage ancillary products, such as video monitors.

## Central Vacuum

- Plumbing up to the floor box utility center to be specified by the central vacuum supplier (terminates in the utility center).
- Plumbing to terminate with 1" PVC pipe (1.315" OD) protruding 2" (50 mm) perpendicular to the floor.
- Wet systems:
  - **Pressure/Vacuum:** 10 ± 2 inches of Hg (34 ± 7 kPa)
  - **Flow:** 9 scfm (255 SL/min) minimum
- Dry/semidry systems:
  - **Pressure/Vacuum:** 4.5 ± 1 inches of Hg (16 ± 3.5 kPa)
  - **Flow:** 12 scfm (340 SL/min) minimum
- Data:
  - 2" (51 mm) conduit, supplied by the contractor, located as needed, and as many as required. For installations requiring Ethernet, run Cat5e or Cat6 cable.

## Head Loss With Respect to Flow

### A-dec 352/353 Assistant's Instrumentation on A-dec 362 Support Center

The following tables include information about high volume evacuator (HVE) and saliva ejector (SE) head loss with flow for an A-dec 352/353 assistant's instrumentation on a A-dec 362 support center.

Tubing and HVE/SE	90 NL/min (3.18 SCFM)	150 NL/min (5.30 SCFM)	250 NL/min (8.83 SCFM)
A-dec 15 mm HVE (large bore) valve with 16 mm flex Tubing & 15 mm canister connection	0.05 in-Hg (0.17 kPa)	0.11 in-Hg (0.37 kPa)	0.47 in-Hg (1.59 kPa)
A-dec 11mm HVE (standard bore) valve with 16 mm Easyflex Tubing & 15 mm canister connection	0.06 in-Hg (0.20 kPa)	0.13 in-Hg (0.44 kPa)	0.57 in-Hg (1.93 kPa)
A-dec 11 mm HVE (standard bore) valve with 13mm Easyflex Tubing & 15 mm canister connection	0.09 in-Hg (0.30 kPa)	0.22 in-Hg (0.75 kPa)	1.09 in-Hg (3.69 kPa)
A-dec 11 mm HVE (standard bore) valve with 13 mm PVC Tubing & 15mm canister connection	0.10 in-Hg (0.34 kPa)	0.26 in-Hg (0.88 kPa)	1.21 in-Hg (4.10 kPa)
A-dec SE (standard bore) valve with 6 mm PVC Tubing & 15 mm canister connection	1.27 in-Hg (4.30 kPa)	6.39 in-Hg (21.64 kPa)	Exceeds 12 in-Hg (40.64 kPa) at flow rates above ~200 NL/min.
A-dec SE (standard bore) valve with 10 mm Easyflex Tubing & 15 mm canister connection	0.66 in-Hg (2.24 kPa)	2.72 in-Hg (9.21 kPa)	Exceeds 12 in-Hg (40.64 kPa) at flow rates above ~250 NL/min.

### A-dec 551 Assistant's Instrumentation on A-dec 411 Dental Chair

The following table includes information about high volume evacuator (HVE) and saliva ejector (SE) head loss with flow for an A-dec 551 assistant's instrumentation on an A-dec 411 dental chair.

Tubing and HVE/SE	90 NL/min (3.18 SCFM)	150 NL/min (5.30 SCFM)	250 NL/min (8.83 SCFM)
15 mm HVE (large bore) valve with 16 mm EasyFlex Tubing	0.11 in-Hg 0.37 kPa	0.32 in-Hg 1.08 kPa	0.82 in-Hg 2.78 kPa
11 mm HVE (standard bore) valve with 13 mm EasyFlex Tubing	0.33 in-Hg 1.12 kPa	1.09 in-Hg 3.69 kPa	2.97 in-Hg 10.06 kPa
11 mm HVE (standard bore) valve with 16 mm EasyFlex Tubing	0.20 in-Hg 0.68 kPa	0.54 in-Hg 1.83 kPa	1.41 in-Hg 4.77 kPa
11 mm HVE (standard bore) valve with 13 mm PVC Tubing	0.38 in-Hg 1.29 kPa	1.03 in-Hg 3.49 kPa	2.57 in-Hg 8.70 kPa
SE (standard bore) valve with 6 mm PVC Tubing	8.89 in-Hg 30.10 kPa	Exceeds 12 in-Hg (40.64 kPa) at flow rates ~100 NL/min.	
SE (standard bore) valve with 10 mm EasyFlex Tubing	5.03 in-Hg 17.03 kPa	Exceeds 12 in-Hg (40.64 kPa) at flow rates above ~125 NL/min.	

### A-dec 351 Assistant's Instrumentation

The following table includes information about high volume evacuator (HVE) and saliva ejector (SE) head loss with flow for an A-dec 351 Assistant's Instrumentation.

Tubing and HVE/SE	90 NL/min (3.18 SCFM)	150 NL/min (5.30 SCFM)	250 NL/min (8.83 SCFM)
15mm HVE (large bore) valve with 16 mm EasyFlex Tubing	0.08 in-Hg (0.27 kPa)	0.14 in-Hg (0.47 kPa)	0.36 in-Hg (1.22 kPa)
11mm HVE (standard bore) valve with 16 mm EasyFlex Tubing	0.03 in-Hg (0.10 kPa)	0.7 in-Hg (0.24 kPa)	0.40 in-Hg (1.35 kPa)
11 mm HVE (standard bore) valve with 13 mm EasyFlex Tubing	0.07 in-Hg (0.24 kPa)	0.20 in-Hg (0.68 kPa)	1.25 in-Hg (4.23 kPa)
11 mm HVE (standard bore) valve with 13 mm PVC Tubing	0.10 in-Hg (0.34 kPa)	0.27 in-Hg (0.91 kPa)	1.50 in-Hg (5.08 kPa)
SE (standard bore) valve with 6 mm PVC Tubing	1.15 in-Hg (3.89 kPa)	6.31 in-Hg (21.37 kPa)	Exceeds 12 in-Hg (40.64 kPa) at flow rates above ~175 NL/min
SE (standard bore) valve with 10 mm EasyFlex Tubing	0.43 in-Hg (1.46 kPa)	2.00 in-Hg (6.77 kPa)	Exceeds 12 in-Hg (40.64 kPa) at flow rates above ~220 NL/min

## Gravity Drain



**NOTE** Gravity drains are needed only on systems with a cuspidor.

- 1-1/2" (38 mm) nominal pipe protruding 1" (25 mm) from finished floor. Trap to be placed in line, conforming to local codes, contractor-supplied.
- Floor mount only. Not recommended for wall mount utilities.
- Waste water drain must have a minimum slope of 1/4" per foot (21 mm per meter) and accommodate a flow of 4.5 gpm (17 L/min) without overflow.

## Shipping Weights

Product/Box	Est. Shipping Weight
A-dec 411 Chair	410 lb (186 kg)
A-dec 332/333/332pro/333pro Delivery System	88 lb (40 kg)
A-dec 461 Cuspidor with Support Center	66 lb (30 kg)
A-dec 351 Assistant's Instrumentation (assistant's only)	28 lb (12.7 kg)
A-dec 551/551sta Assistant's Instrumentation (assistant's arm only)	20 lb (9.1 kg)
A-dec 572/572L Dental Light	47 lb (21 kg)
A-dec 372L Dental Light	47 lb (21 kg)
A-dec 482 Radius-Style Monitor Mount (mount hardware only; without monitor)	10 lb (4.5 kg)
Back Mount and Support Link (required with 551 module)	15 lb (6.8 kg)

## Documentation References

Document Title	p/n
<b>Installation Guides</b>	
A-dec 411 Dental Chair	86.0925.00
A-dec 332/333/336 and 332ft Delivery System on 411 Dental Chair	86.0922.00
A-dec 332pro/333pro/3336pro Delivery System on A-dec 311/411 Dental Chair IG	86.1016.00
A-dec 372L/572L Dental Light on A-dec 311/411/511 Dental Chair	86.0333.00
A-dec 461 Support Center	86.0387.00
A-dec 551/551sta Assistant's Instrumentation	86.0388.00
A-dec 482 Monitor Mount	86.0410.00
A-dec 382 Monitor Mount	86.0413.00
<b>Instructions for Use</b>	
A-dec 411 Dental Chair	86.0546.00
A-dec 461 Cuspidor with Support Center	86.0374.00
A-dec 551 Assistant's Instrumentation	86.0603.00
A-dec Self-Contained Water System	86.0609.00
A-dec Monitor Mounts	86.0309.00
<b>Service Information</b>	
A-dec Dental Chairs Service Guide	86.0380.00
A-dec Delivery Systems Service Guide	86.0382.00
A-dec Dental Lights and Monitor Mounts Service Guide	86.0326.00
<b>Templates</b>	
A-dec 411 Chair Template	86.0386.00
A-dec 411 Related Modules Template	86.0385.00
A-dec 411 Chair Mini Template	86.1003.00
A-dec Floor Boxes	85.0472.00



**NOTE** Use only full-scale templates for locating the plumbing and electrical.



**NOTE** The floor box mounting hole placements appear on the floor box base that is being installed.

## Views and Dimensions



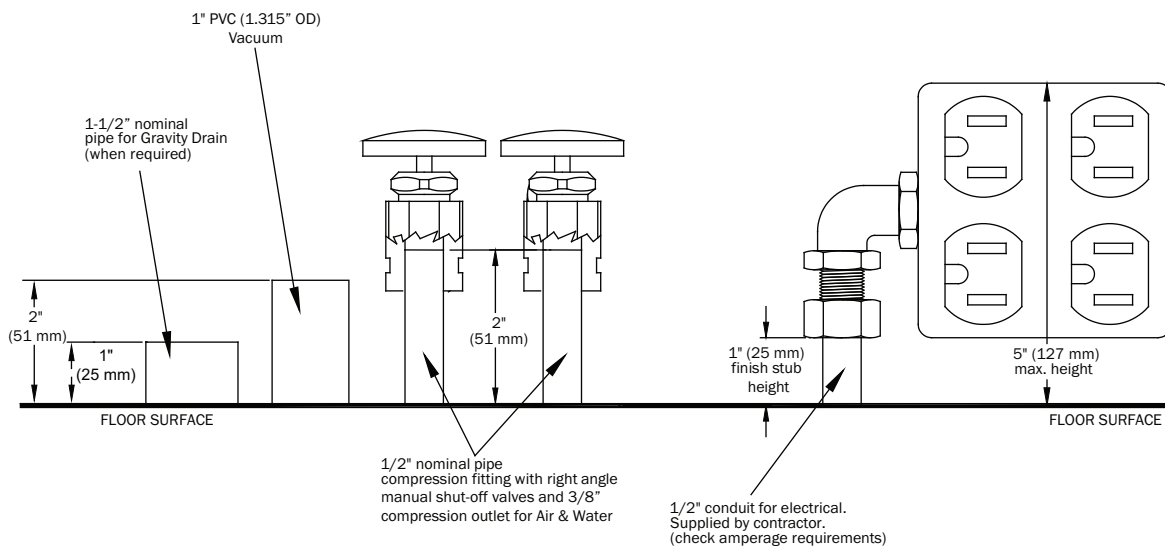
**NOTE** The dimensional drawings in this section are not to scale and are for reference only. For complete accuracy, use the appropriate full-sized templates.

### Utility Placement

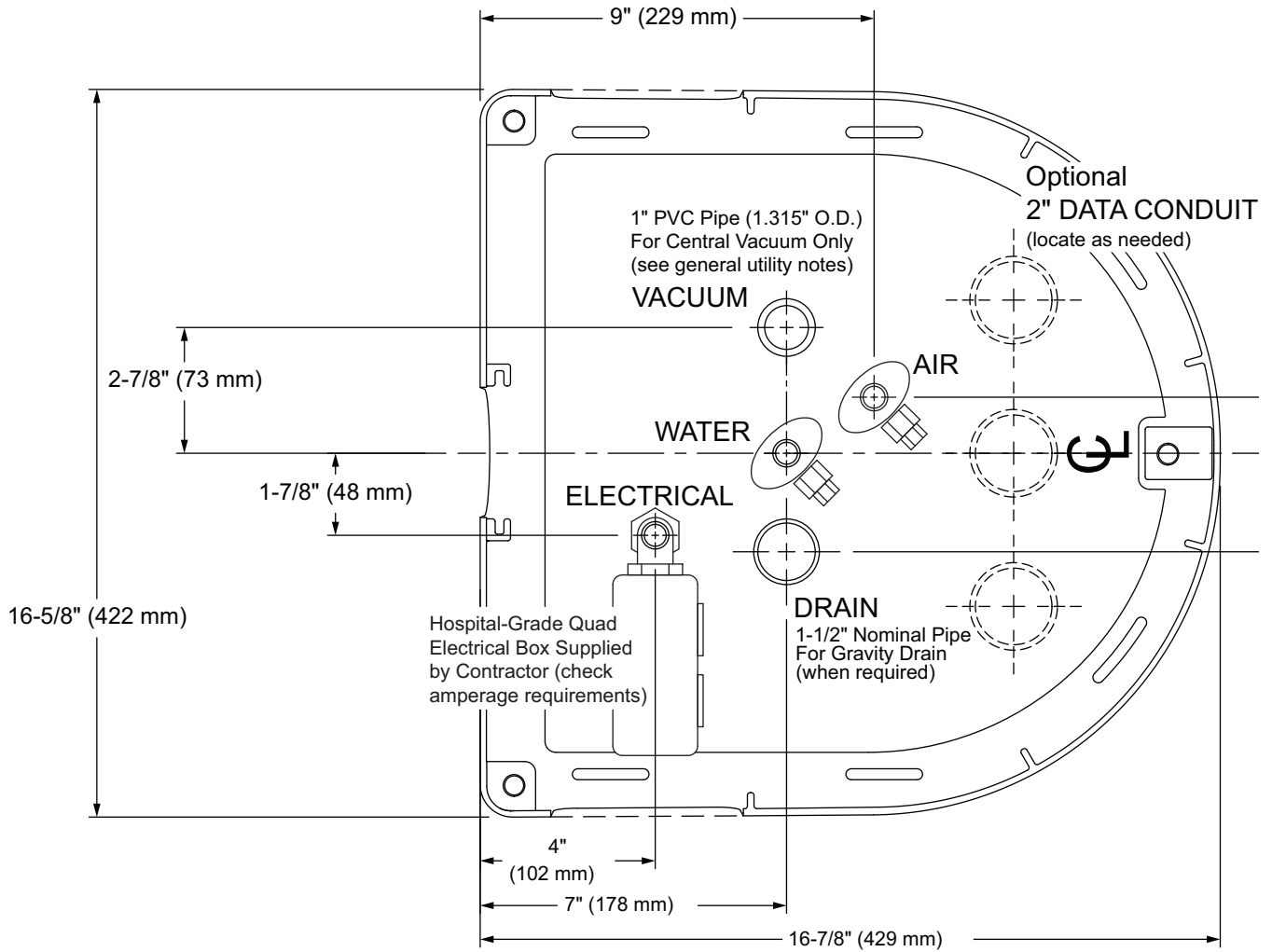


**CAUTION** Due to specific plumbing elevation restrictions, the height and placement of utilities in the floor box can affect the ability to use the floor box cover. Failure to provide adequate space will prevent installation and removal of the cover. Please reference the appropriate full-size template which includes all of the necessary space constraints.

### Plumbing Elevations

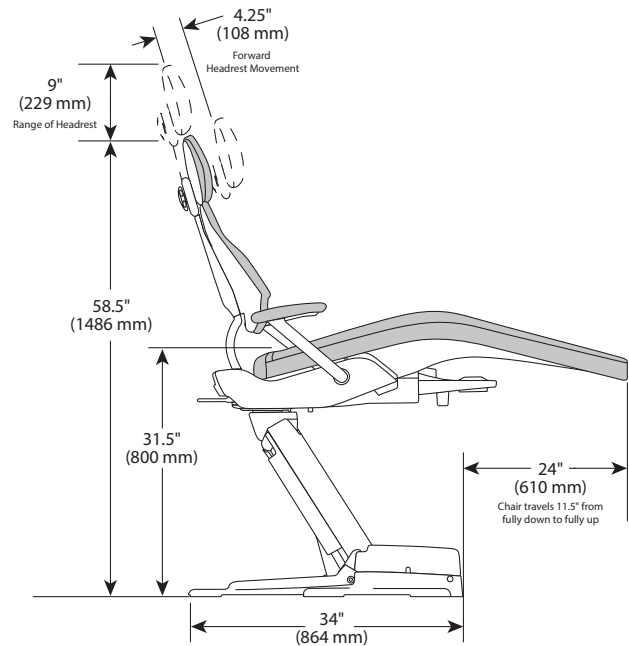
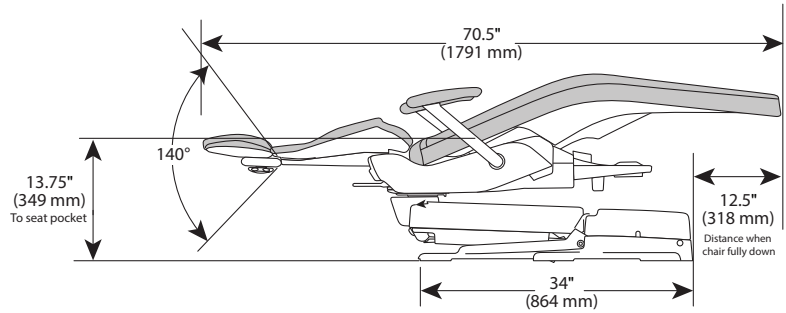
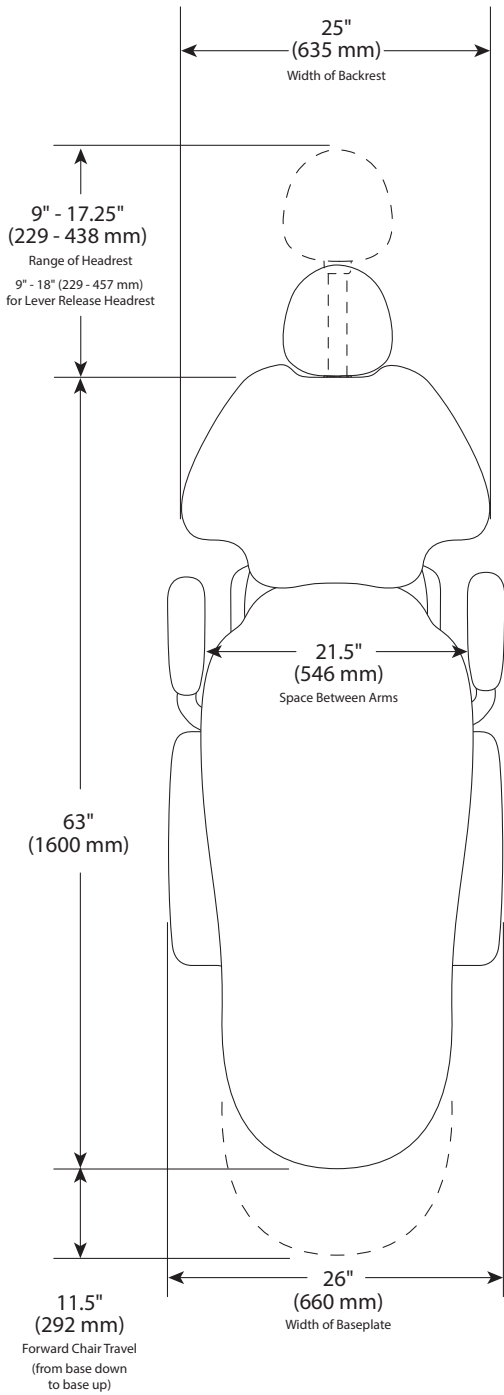


### Floor Box Utility Connections



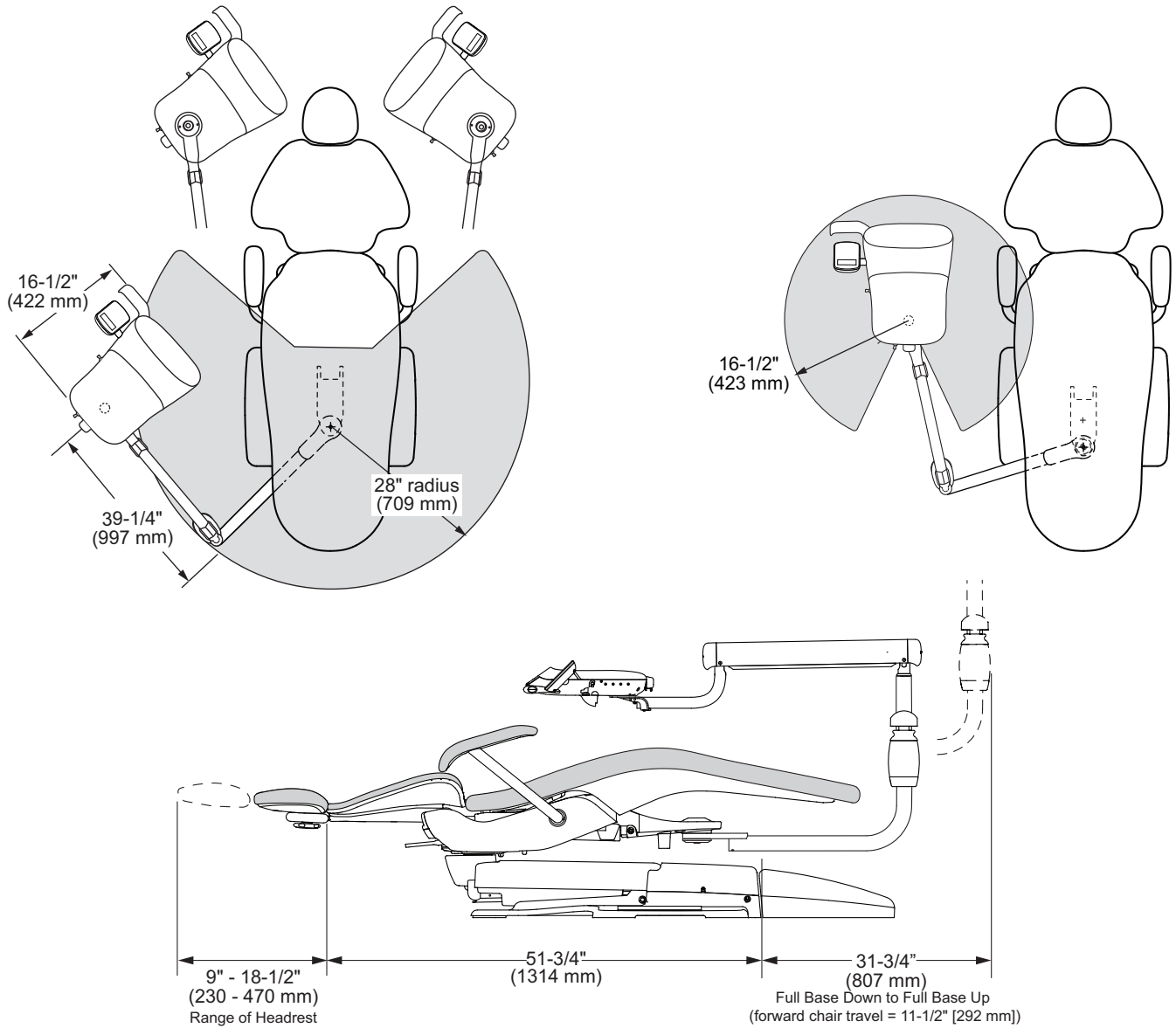


## A-dec 411 Chair Plan View with Elevation



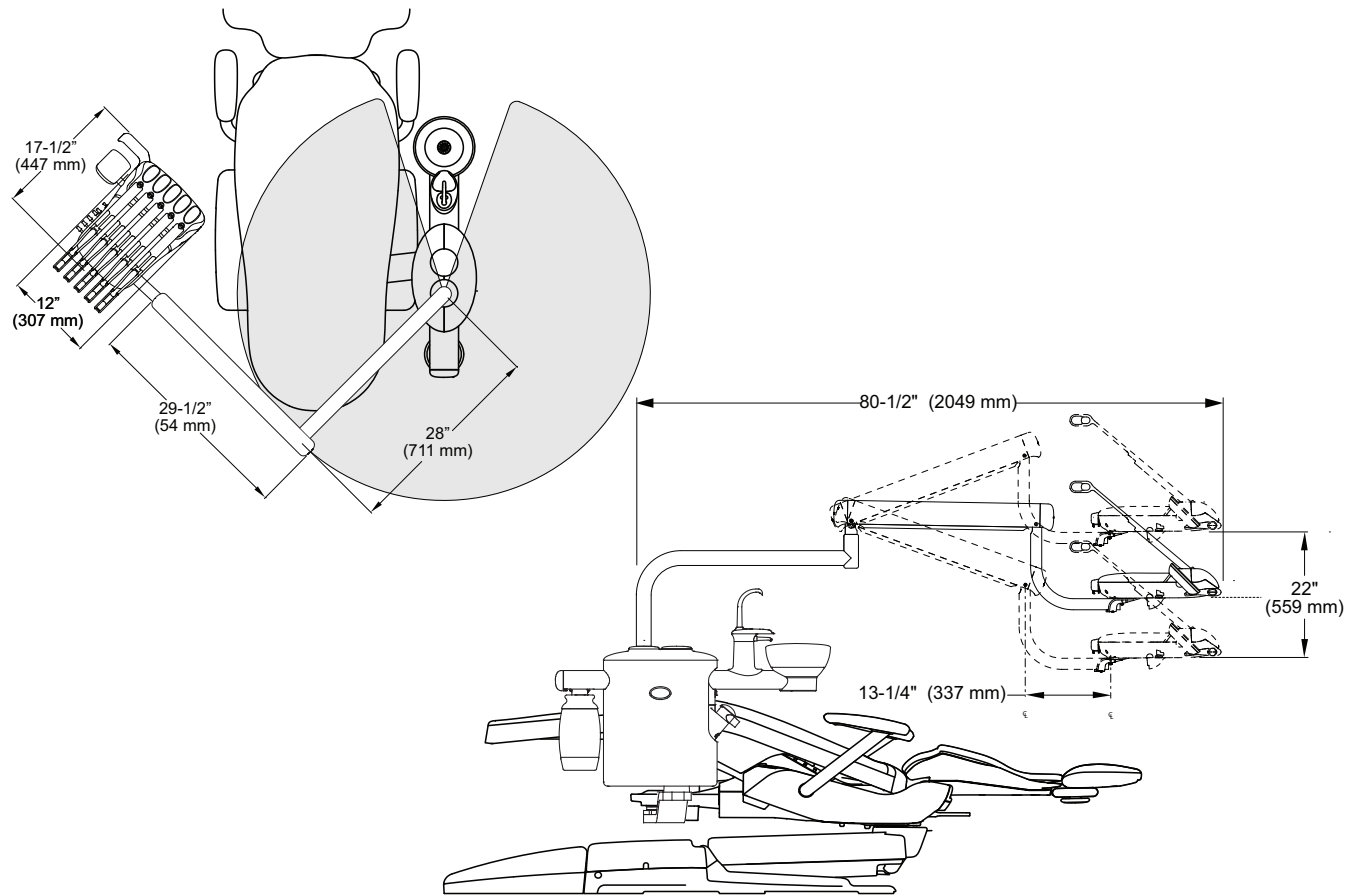
## A-dec 332/333/332pro/333pro Delivery System Plan View with Elevation

(shown with 332pro system)



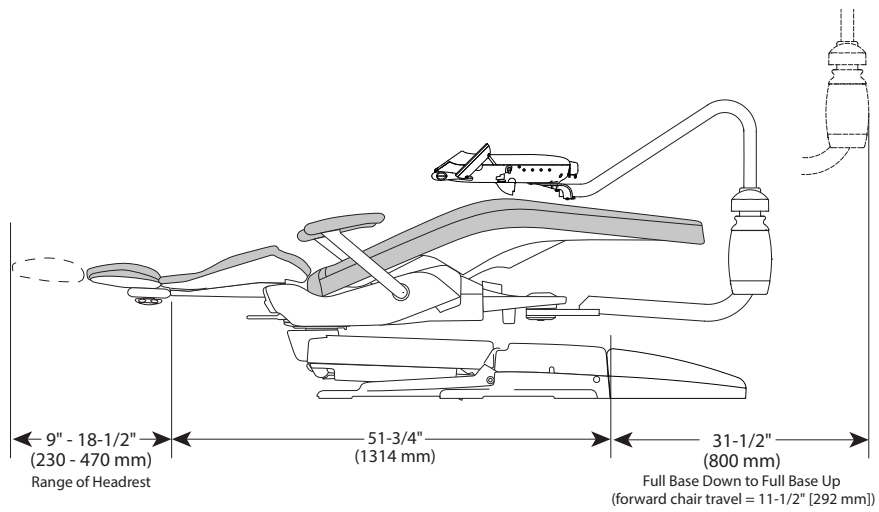
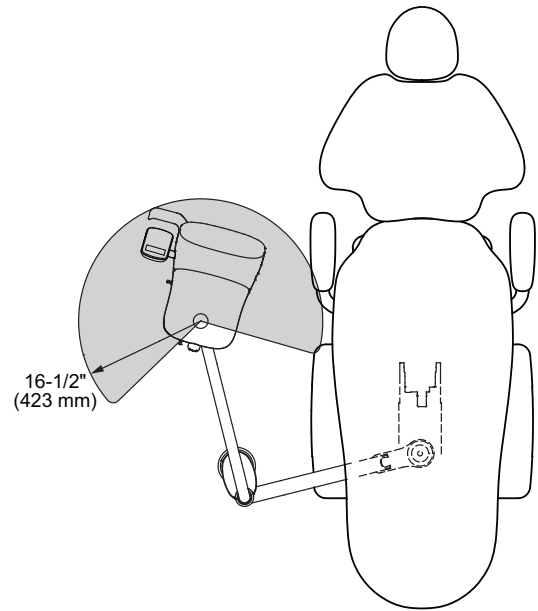
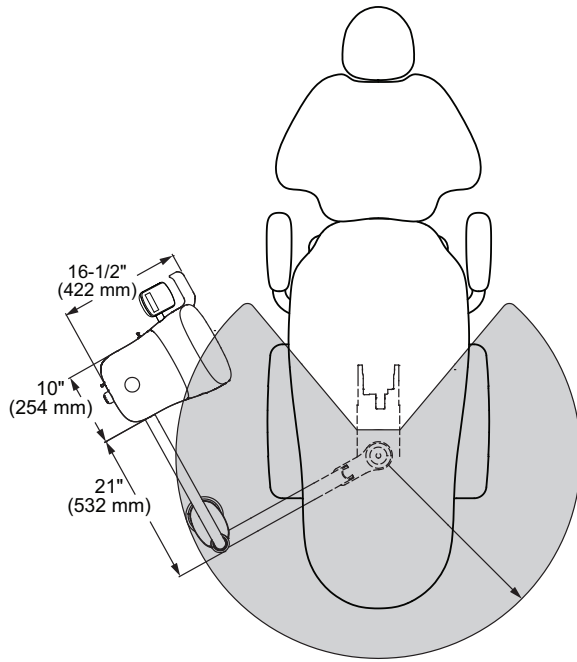
### A-dec 334/335/334pro/335pro Delivery System with 362 Support Center Plan View with Elevation

(A-dec 335pro System Shown)

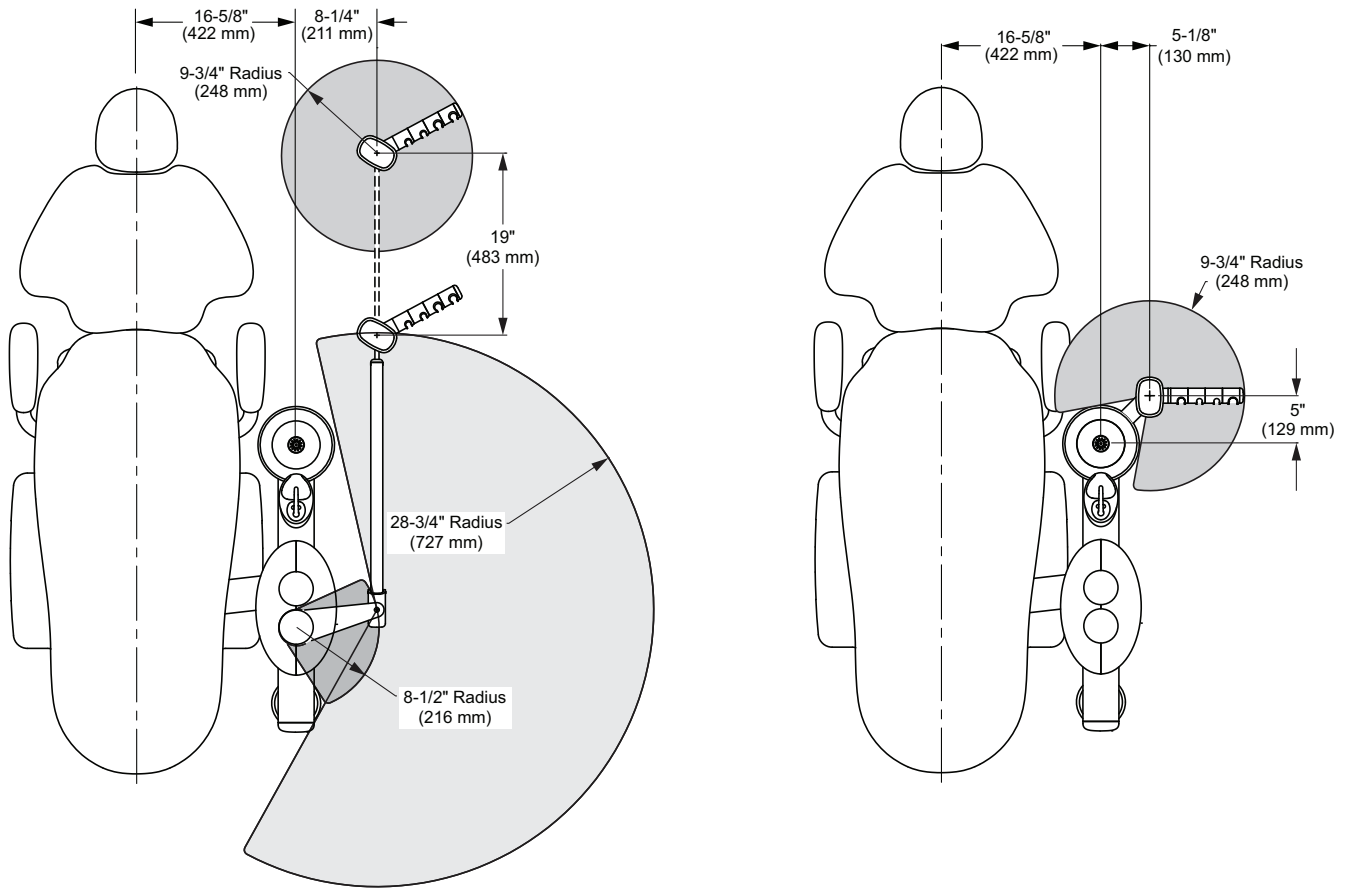


### A-dec 336/336pro Delivery System Plan View with Elevation

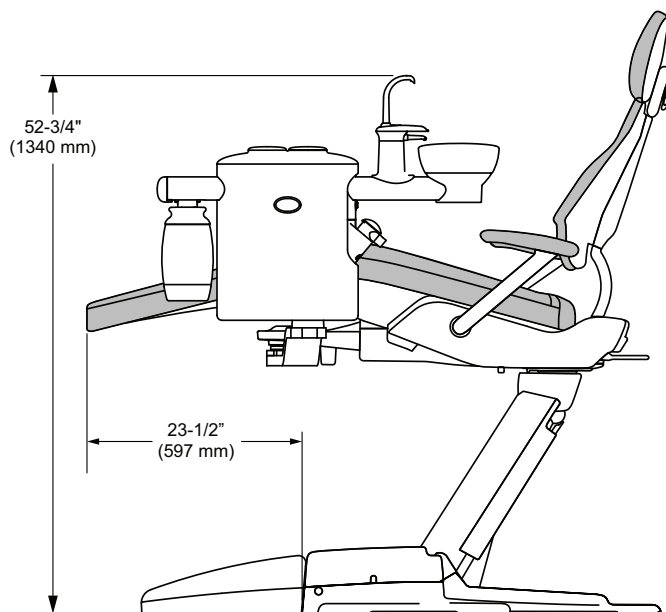
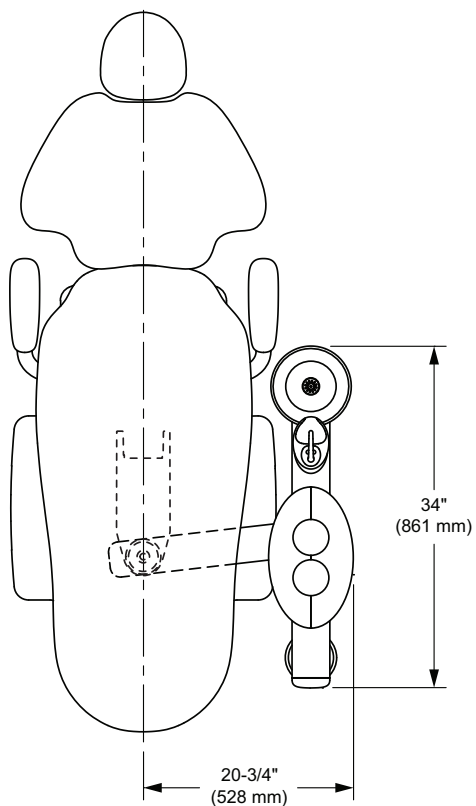
(A-dec 336pro System Shown)



### A-dec 352/353 Assistant's Instrumentation Plan View

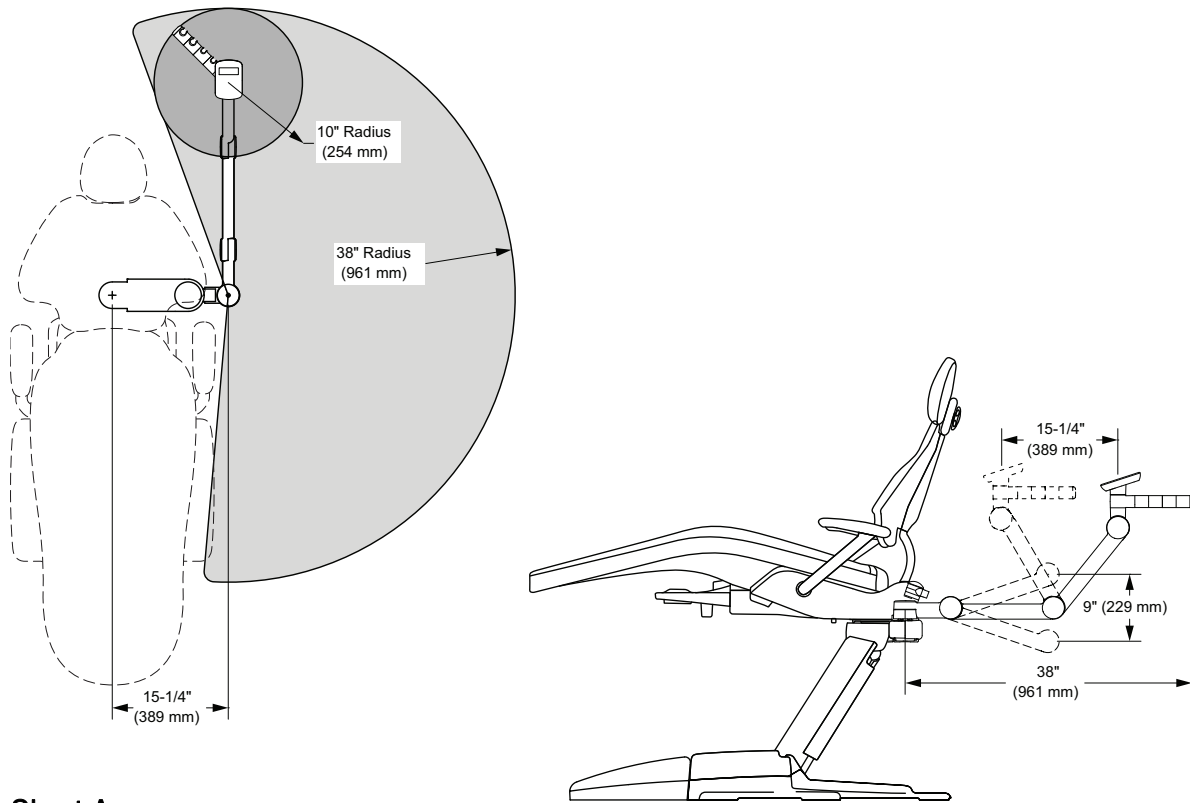


### A-dec 362 Cuspidor and Support Center Plan View with Elevation

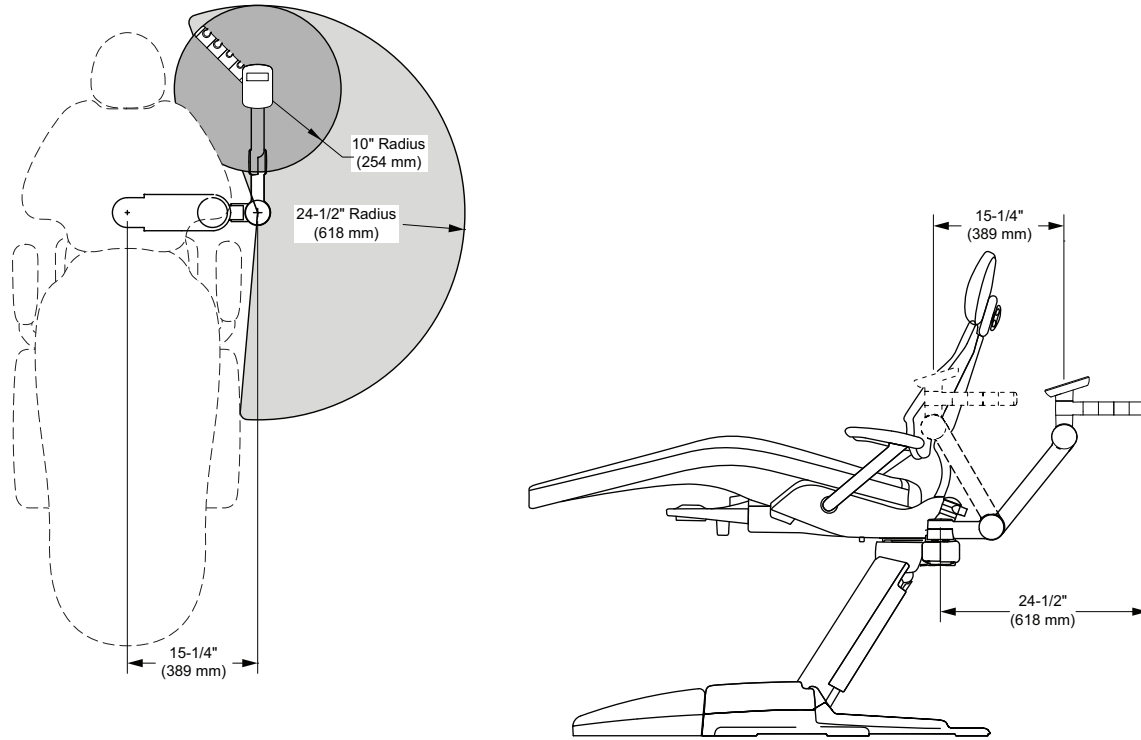


**A-dec 551/551sta Assistant's Instrumentation**  
***Plan View***

### Long Arm

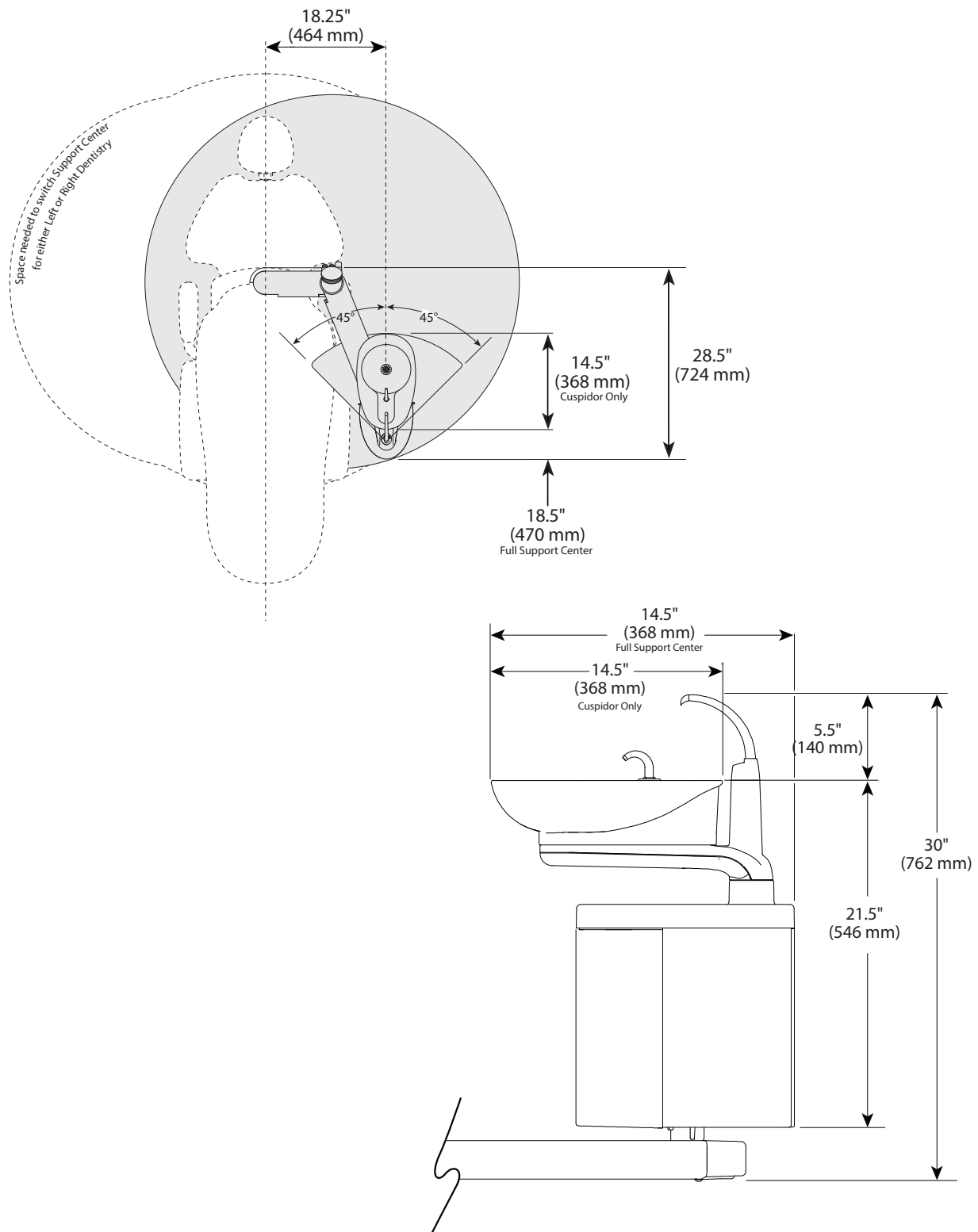


### Short Arm

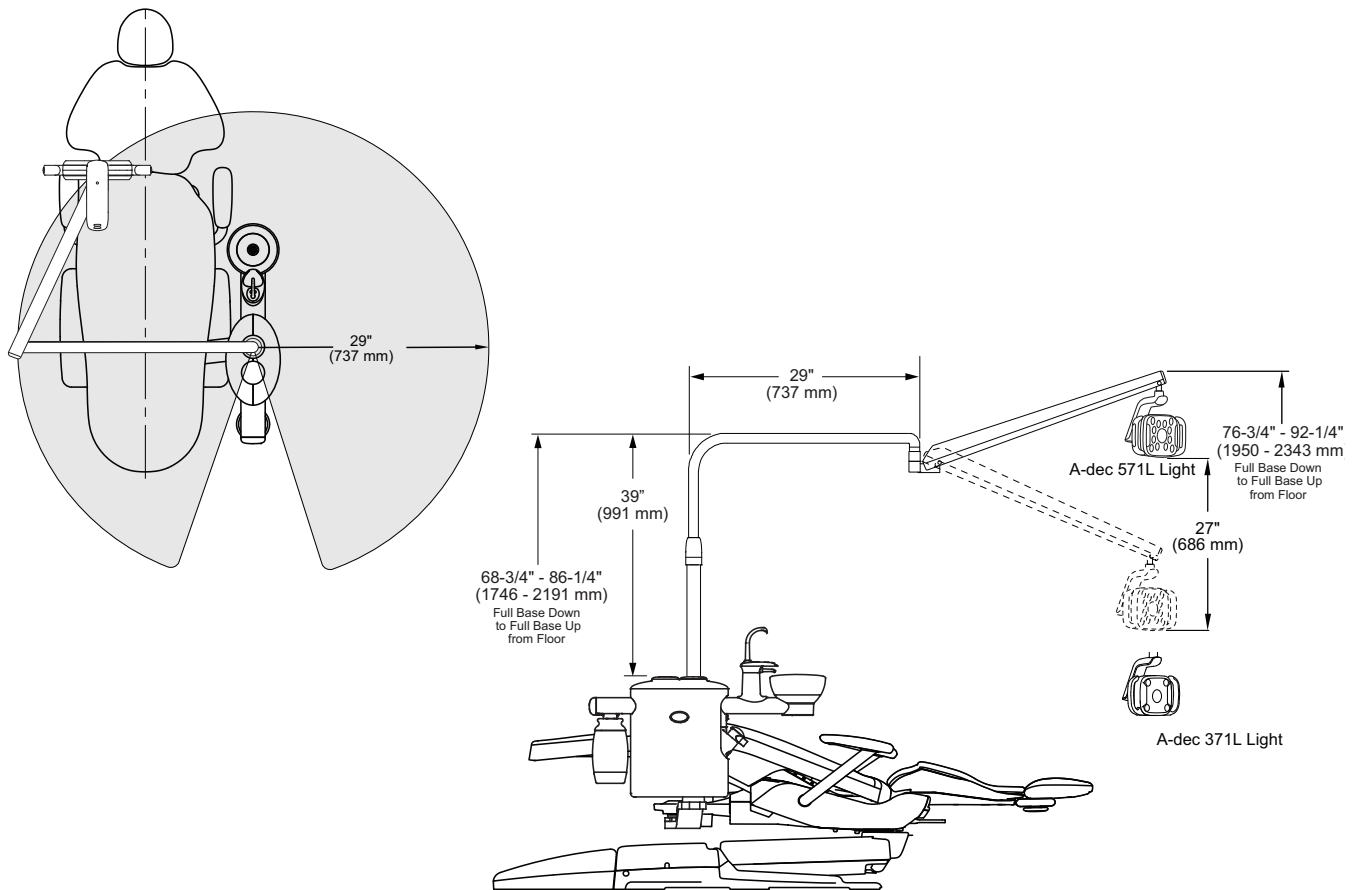




**A-dec 461 Cuspidor with Support Center**  
**Plan View with Elevation**

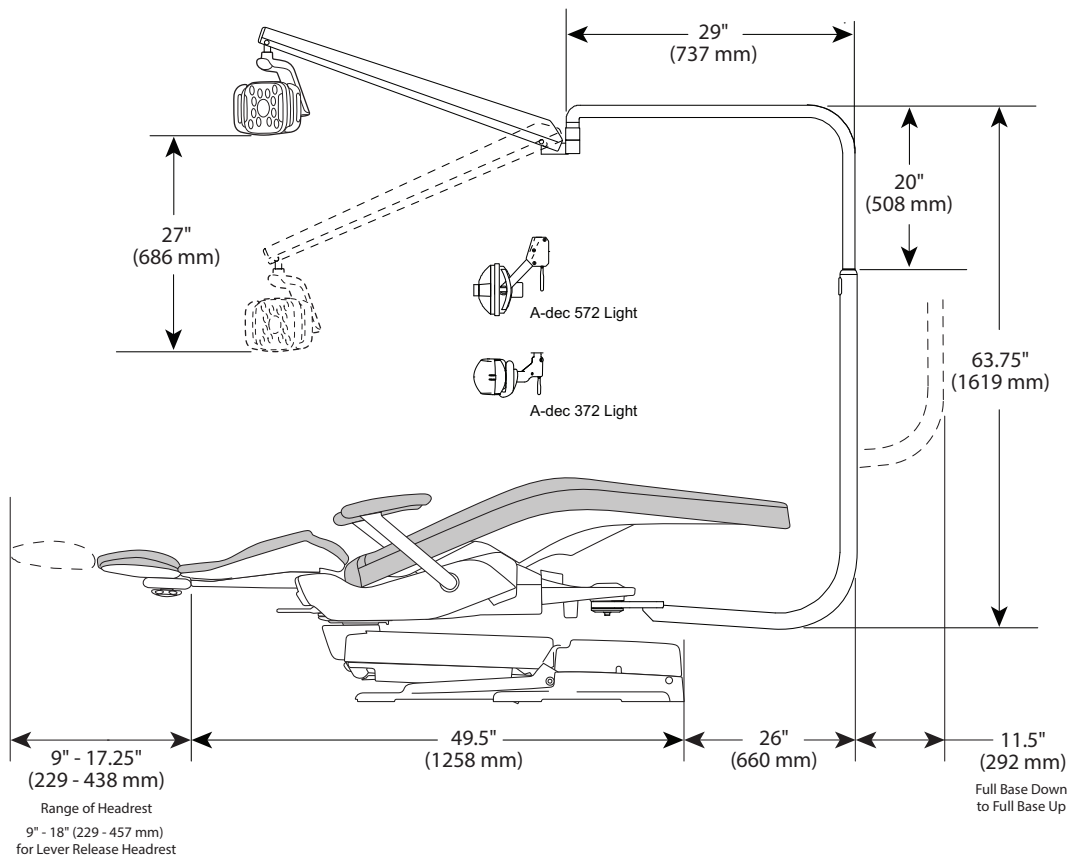
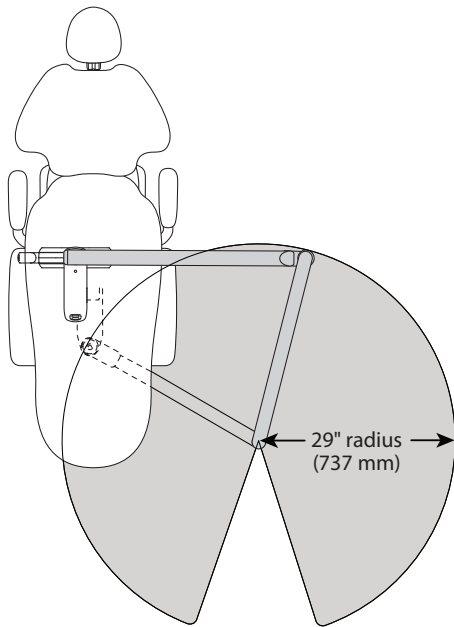


### A-dec 371L/571L Dental Light Plan View with Elevation

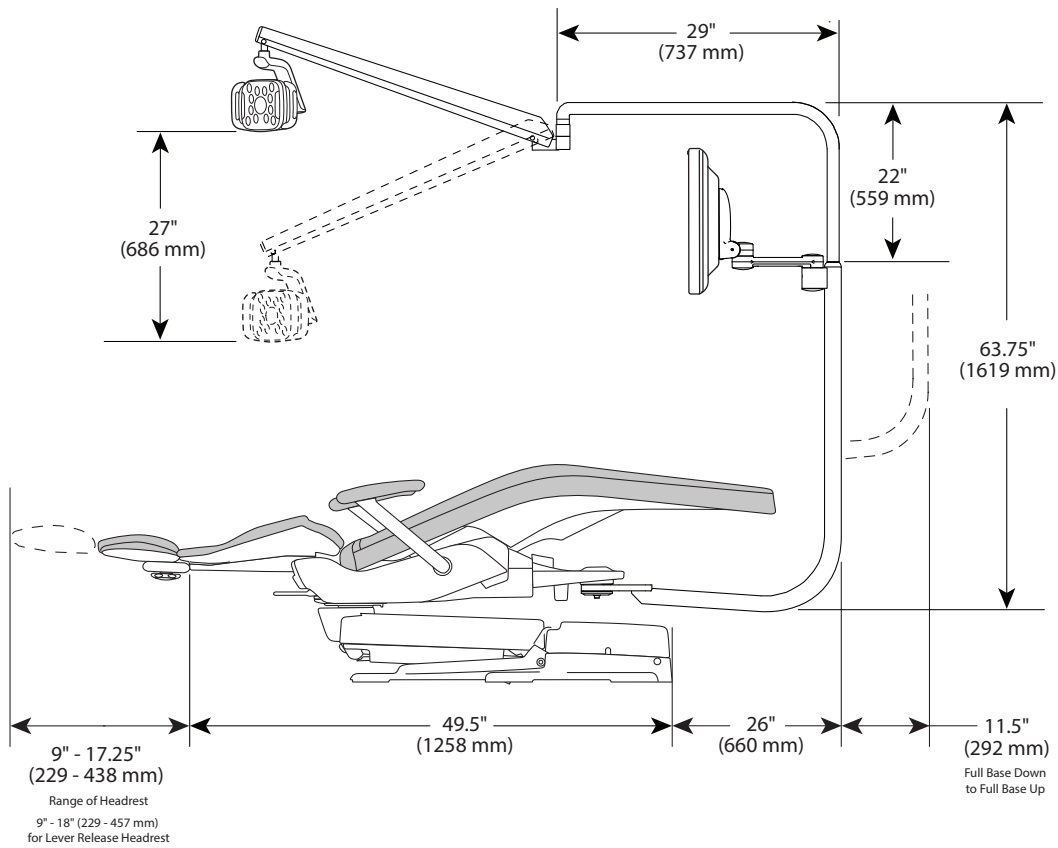
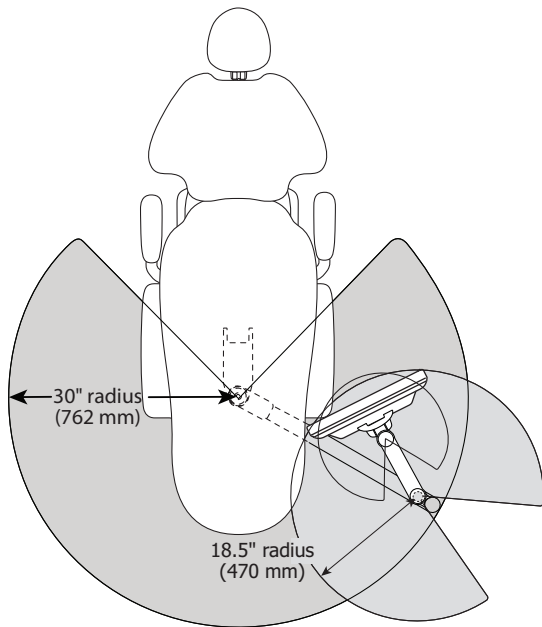


### A-dec 372L/572L/572L Dental Light Plan View with Elevation

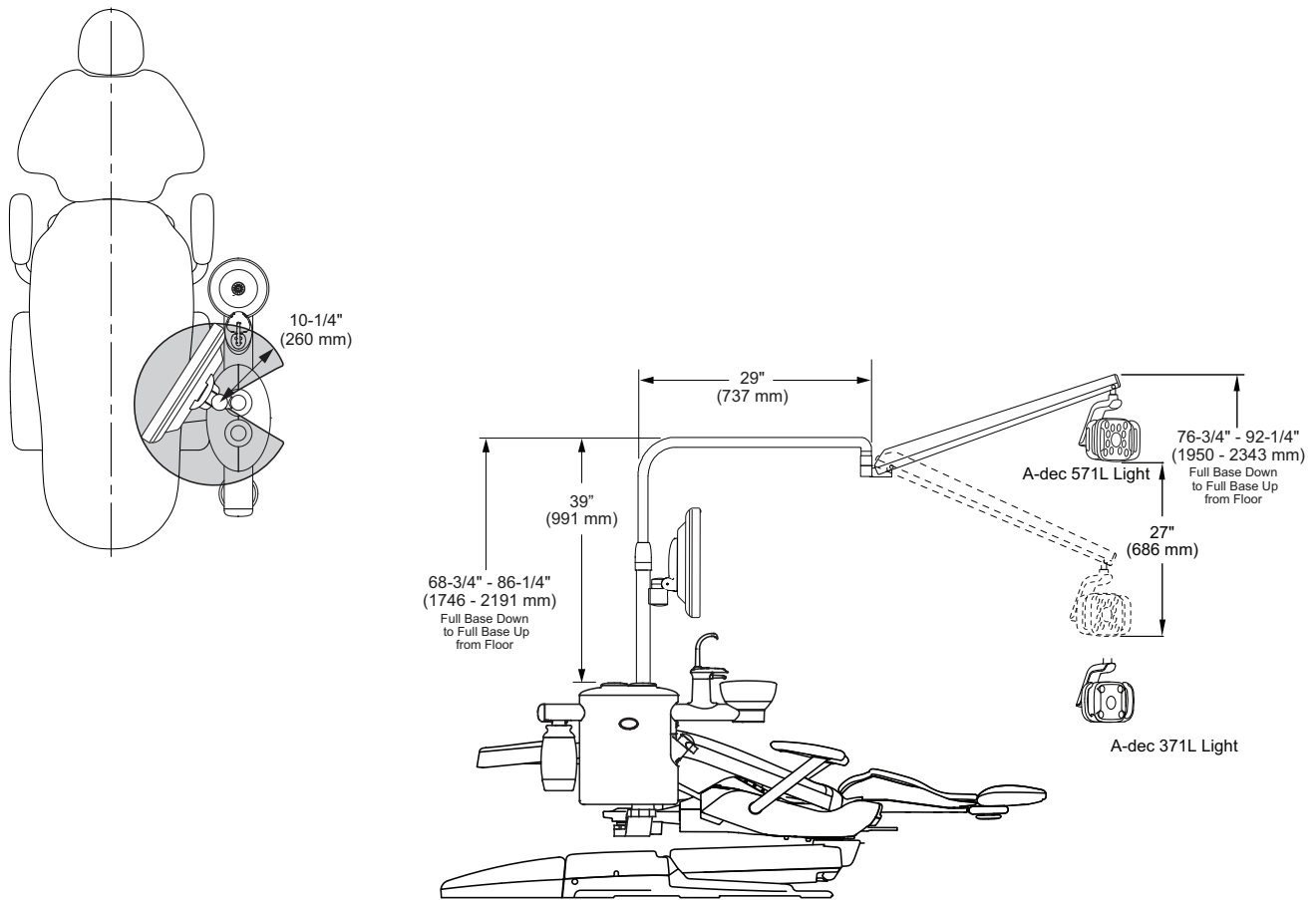
(shown with A-dec 572L LED Dental Light)



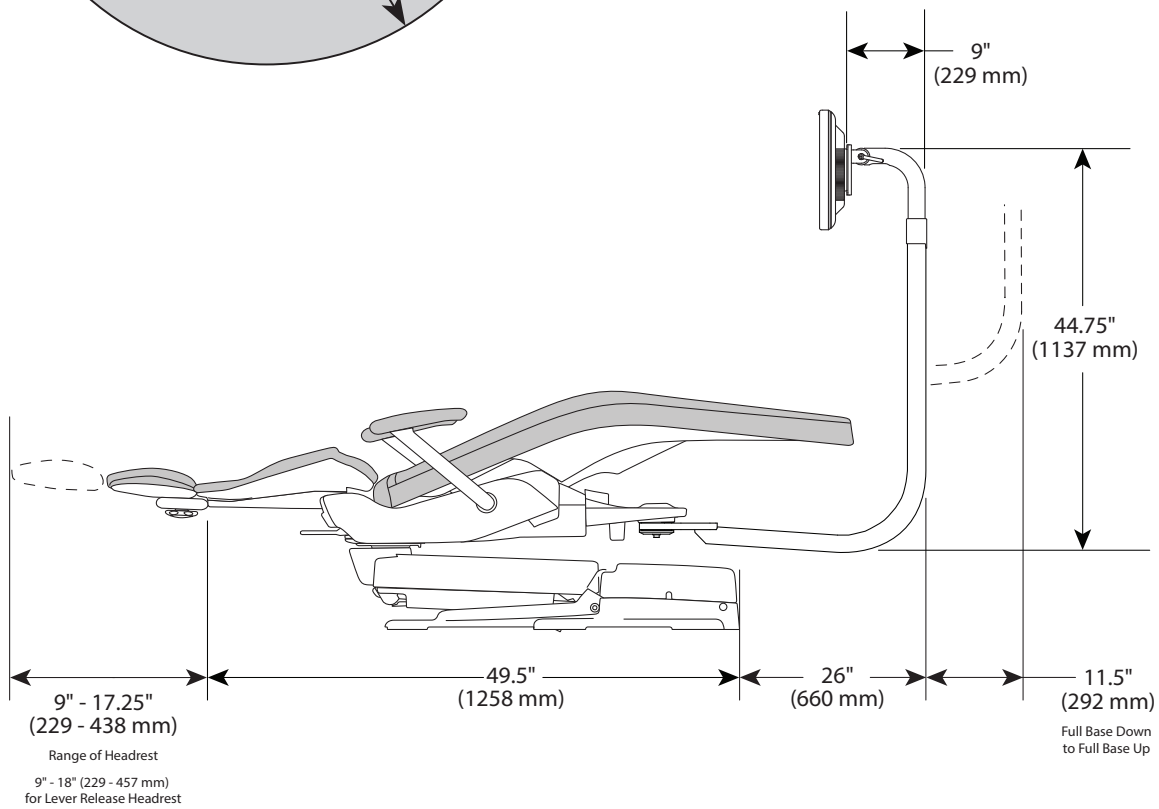
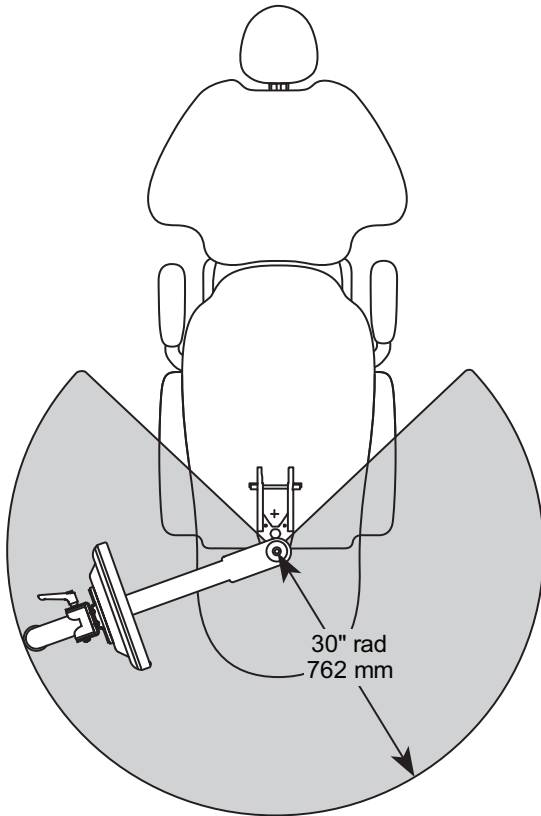
**A-dec 482 Monitor Mount with Dental Light**  
**Plan View with Elevation**



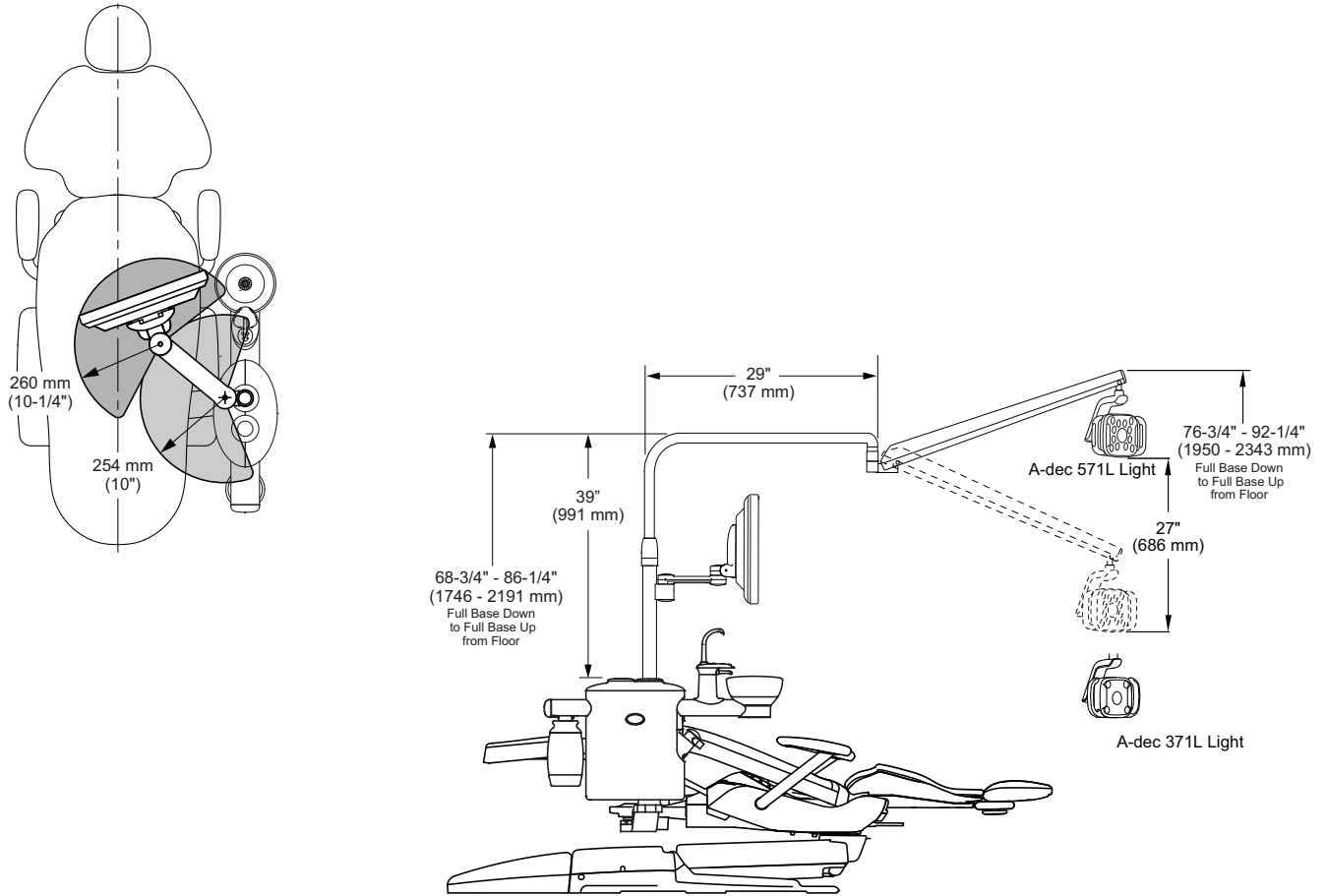
### A-dec 381 Monitor Mount with 362 Support Center Mount Dental Light Plan View with Elevation



### A-dec 382 Radius-Style Monitor Mount Plan View with Elevation



### A-dec 482 Monitor Mount with 362 Support Center Mount Dental Light Plan View with Elevation







## Regulatory Information and Warranty

For required regulatory information and the A-dec warranty, see the *Regulatory Information, Specifications, and Warranty* document (p/n 86.0221.00) available in the Resource Center at [www.a-dec.com](http://www.a-dec.com).



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