SECTION 10 73 00

PERGOLAS, STATIC AND MOTORIZED

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\*\* NOTE TO SPECIFIER \*\* M-D IntelliShade; motorized pergolas and shades.
This section is based on the products of M-D IntelliShade, which is located at:6910 Preston Hwy.Louisville, KY 40219Toll Free Tel: 888-550-5491Email: [request info (info@mdintelllishade.com)](https://arcat.com/rfi?action=email&company=M-D%252BIntelliShade&message=RE%253A%2520Spec%2520Question%2520(10732cai)%253A%2520&coid=50051&spec=10732cai&rep=&fax=)
Web: <https://www.mdintellishade.com>
 [ [Click Here](https://arcat.com/company/m-d-intellishade-50051) ] for additional information.
Cardinal Motorized Pergolas are the #1 Selling Motorized Pergola and are proudly designed and made in the USA! We offer a variety of styles and designs to enhance your outdoor living space. We know you will love our products as much as we love building them for you.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Aluminum Pergolas:
			1. Free standing.
			2. Host attached.
			3. Static assembly.
			4. Motorized lovers.
		2. Retractable shades:
			1. Crank operated.
			2. Motorized.
		3. Canopy system.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section10536 - Awning framing system and fabric covering fabrication.
		2. Section 10 71 13 - Exterior Sun Control Devices.
		3. Section 10 73 23 - Car Shelters.
		4. Section 10 73 26 - Walkway Coverings.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. International Building Code (IBC).
		2. Florida Building Code (FBC).
		3. American Society of Civil Engineers (ASCE):
			1. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures.
		4. American Architectural Manufacturers Association (AAMA):
			1. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
		5. Underwriters Laboratories (UL):
			1. UL 94-HB - Flammability, Horizontal Burning.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Verification Samples: Two representative units of each type, size, pattern, and color.
		2. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up on might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
			1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
			2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
			3. Retain mock-up during construction as a standard for comparison with completed work.
			4. Do not alter or remove mock-up until work is completed or removal is authorized.
	1. PRE-INSTALLATION CONFERENCE
		1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. WARRANTY
		1. Manufacturer's standard limited warranty unless indicated otherwise.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: M-D IntelliShade, which is located at:6910 Preston Hwy.Louisville, KY 40219Toll Free Tel: 888-550-5491Email: [request info (info@mdintelllishade.com)](https://arcat.com/rfi?action=email&company=M-D%252BIntelliShade&message=RE%253A%2520Spec%2520Question%2520(10732cai)%253A%2520&coid=50051&spec=10732cai&rep=&fax=);Web: <https://www.mdintellishade.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Can easily be designed to "fit" pre-existing structures (e.g., wood, aluminum, steel, etc.). Can be designed to fit any shape you may need (e.g., hexagon, curved edge, octagon, etc.).! Remote control operation. Can be connected or assembled endlessly. Can support ceiling fans, heaters, speakers, etc. Can control the sun and rain. Lowers deck and patio temperatures by 15-20 degrees F

* 1. ALUMINUM PERGOLAS
		1. Performance and Design Requirements:
			1. Code Compliance:
				1. Designed per International Building Code Structural Requirements.
				2. Florida Building Code, Seventh Edition.
				3. Site Specific Design Pressures: Determined per ASCE 7-16 or ASCE 7-10 depending on applicable building code and product design schedules on the Drawings.
			2. Electrostatic Powder Coating: AAMA 2604 Certified.
			3. Wind Load: 180 mph (290 kph). Hurricane strength winds.
			4. Live Load: 50 lbs per sq ft (2.39 kPa). Snow load.
			5. Span Deflections: Length/60 as per the International Building Code.
			6. Material: Aircraft grade extruded aluminum.
				1. No plastic, vinyl, or resin parts.
			7. Maintenance free.
			8. Support ceiling fans, heaters, speakers, etc.
			9. System Weight: 1.87 lbs per sq ft (0.09 kPa); support structure excluded.
			10. Fasteners: No. 14 or greater SAE grade 5, cadmium plate, or otherwise corrosion resistant in material and comply with the "Specifications for Aluminum Structures" by the Aluminum Association, Inc., and all applicable federal, state, and local codes, unless noted otherwise on the Drawings.
			11. Warranty: Limited lifetime warranty.
		2. Physical Characteristics:
			1. Total custom design flexibility to your specifications; incorporate angles, curves, and radii. Can be constructed on existing structures.

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required.

* + - * 1. Finish: Extruded: Mill finish.
				2. Finish: Powder Coated: AAMA 2604. UV resistant.

\*\* NOTE TO SPECIFIER \*\* Delete color options not required. Available in 80 custom colors. Contact manufacturer for more information.

Color: White.

Color: Dark Bronze.

Color: Taupe.

Color: \_\_\_\_\_\_\_\_.

Color: As determined by the Architect.

\*\* NOTE TO SPECIFIER \*\* Delete model options not required and delete options for models not required.

* + - * 1. Model: Standard.

Style: Free standing.

Style: Host attached.

Pergola Width: \_\_\_inch (\_\_\_ mm).

Pergola Width: As detailed on the Drawings.

Pergola Length: \_\_\_inch (\_\_\_ mm). Can be assembled endlessly.

Beam Spacing: \_\_\_inch (\_\_\_ mm).

Beam Spacing: As detailed on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Shade lattice is optional and only for non-motorized pergolas. Delete options not required or delete all.

Shade Lattice: 30 percent shade.

Shade Lattice: 60 percent shade.

Shade Lattice: 90 percent shade.

Shade Lattice: As detailed on the Drawings.

Purlin Overhang: 12 inch (305 mm).

Beam Overhang: 12 inch 305 mm).

Sealants: As recommended by the Manufacturer.

* + - * 1. Model: Classic. No inserts required and no thin roll formed aluminum.

Style: Free standing.

Style: Host attached.

Pergola Width: \_\_\_inch (\_\_\_ mm).

Pergola Width: As detailed on the Drawings.

Pergola Depth: \_\_\_inch (\_\_\_ mm). Can be assembled endlessly.

Pergola Depth: As detailed on the Drawings. Can be assembled endlessly.

Beam Construction: Single.

Beam Construction: Double.

Beam Construction: Beam Construction: Double.

Rafter Spacing: \_\_\_inch (\_\_\_ mm).

Rafter Spacing: As detailed on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Shade lattice is optional and only for non-motorized pergolas. Delete options not required or delete all.

Shade Lattice: 30 percent shade.

Shade Lattice: 60 percent shade.

Shade Lattice: 90 percent shade.

Shade Lattice: As detailed on the Drawings.

\*\* NOTE TO SPECIFIER \*\* 12 inch (305 mm overhangs are standard. Longer overhangs are not available for the Standard model pergolas. Delete overhang options not required.

Purlin Overhang: 12 inch (305 mm).

Purlin Overhang: \_\_\_inch (\_\_\_ mm).

Purlin Overhang: As detailed on the Drawings.

Beam Overhang: 12 inch 305 mm).

Beam Overhang: \_\_\_inch (\_\_\_ mm).

Beam Overhang: As detailed on the Drawings.

Sealants: As recommended by the Manufacturer.

* + - * 1. Model: Motorized. Roof can be open or closed. Infinitely adjustable.

Control: Remote control or smart device.

Style: Free standing.

Style: Host attached.

Pergola Width: \_\_\_inch (\_\_\_ mm).

Pergola Width: As detailed on the Drawings.

Pergola Depth: \_\_\_inch (\_\_\_ mm). Can be assembled endlessly.

Pergola Depth: As detailed on the Drawings. Can be assembled endlessly.

Beam Construction: Single.

Beam Construction: Double.

Beam Construction: As detailed on the Drawings.

Rafter Spacing: \_\_\_inch (\_\_\_ mm).

Rafter Spacing: As detailed on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Shade lattice is optional and only for non-motorized pergolas. Delete options not required or delete all.

Shade Lattice: 30 percent shade.

Shade Lattice: 60 percent shade.

Shade Lattice: 90 percent shade.

Shade Lattice: As detailed on the Drawings.

\*\* NOTE TO SPECIFIER \*\* 12 inch (305 mm) overhangs are standard. Longer overhangs are not available for the Standard model pergolas. Delete overhang options not required.

Purlin Overhang: 12 inch (305 mm).

Purlin Overhang: \_\_\_inch (\_\_\_ mm).

Purlin Overhang: As detailed on the Drawings.

Beam Overhang: 12 inch 305 mm).

Beam Overhang: \_\_\_inch (\_\_\_ mm).

Beam Overhang: As detailed on the Drawings.

Sealants: As recommended by the Manufacturer.

Adjustable Louvers:

\*\* NOTE TO SPECIFIER \*\* Maximum louver length is 24 ft ( m). Delete option not required.

Louver Size: 4 inch (102 mm).

Louver Size: 8 inch (203 mm).

Louver Length: \_\_\_ inch (\_\_\_ mm).

Louver Length: As detailed on the Drawings.

Louver Overhang: \_\_\_ inch (\_\_\_ mm).

Louver Overhang: As detailed on the Drawings.

Motor/ Actuator: Model LA23 LINAK. Powerful push and pull linear actuator with compact design to fit into narrow spaces.

Power Supply and Control Box Combination: 160,000 hours mean time between failures. Each Unit powers 2 motors and 32 ft (9.754 m) of LED strip lights or 3 motors and no LED lights.

UL registered.

Power: 90 to 264 VAC 47 to 63 Hz, international standard.

Peak Power: 300 W.

Continuous: 200 W.

Output: 24 V, 92.5 percent efficiency.

Working Temperature: Minus 22 to 158 degrees F (Minus 30 to 70 degrees C) up to 16,404 ft (5,000 m) elevation.

Operating Frequency: 433.92 MHz.

Channels: 3.

Amps per Channel: 5 amps maximum and continuous.

Remotes Stored per Channel: 10.

Channel 3: LED or roof section selectable. Set for LED Strip lights. Can be used as a motor connection.

LED channel is dimmable.

Selectable low temperature open and protect.

Selectable overcurrent protection.

Weatherproof Enclosure (WxLxH): 4.25 x 1 x 3 inch (108 x 25 x 76 mm).

IP66, NEMA 1,2,4 and 4X.

UL94-HB flame rating.

Color: Dark bronze.

Color: Light gray.

One button remote programming

Suitcase latch design.

Stainless steel wall mounting brackets and hardware.

Weatherproof dome cord glands for leak free wiring.

DIP switch setting that opens and locks pergola at temperatures below 38 degrees F (3.3 degrees C).

Power Cord with Hard Plug: 25 ft (7.620 m).

Warranty: 1 year.

Sealants: As recommended by the Manufacturer.

Accessories:

Rain Sensor: Model RG-11. Optical, not mechanical, chemical, or conductive. Extremely sensitive, immune to false trips, and unaffected by jostling and motion. Detects the surface condition, caused by dirt, contaminants, aging, and other factors. It compensates the data, making the device impervious to environmental factors.

No exposed conductors to corrode.

No openings for bugs to crawl into.

No place for leaves or other debris to collect.

WIFI Smart Controller: Programs the motorized pergola and LED lighting as well as other items using 422.92 MHz to work on smart devices.

Size (WxH): 4.5 x 1.5 inches (114 x 38 mm).

Works using the customer's WI-FI.

App: Works on both IOS and Android devices.

Input Voltage: 5 VDC.

Color: Black.

RF Wireless 6 Channel Surface Mounted Wall Switch: Contemporary push button control design.

No junction box required.

Removeable from wall cover to use as a handheld remote.

Color: White.

Dimensions (HxWxD): 4.5 x 2.73 x 0.54 inches (114 x 69 x 14 mm).

Typical Control Range: 100 ft (30.480 m).

* + 1. Pergola Components:
			1. Bottom Post Base: Used to attach post to concrete or wood deck.
			2. Decorative Trim: Original style. 2 per trim kit. If using notched post top one cannot be used.
			3. Decorative Trim: Modern style. 2 per trim kit. If using notched post top one cannot be used.
			4. Posts: 5 x 5 inch (127 x 127 mm) 6063-T5 extruded aluminum with 0.110 inch (2.79 mm) wall thickness and powder coated. Slides over bottom post base. Attached with through bolts using template provided.

\*\* NOTE TO SPECIFIER \*\* Delete length options not required. 10 ft ( m) length is standard.

* + - * 1. Length: 10 ft (3.048 m).
				2. Length: \_\_\_ ft (\_\_\_ m).
				3. Length: As determined by the Architect.
				4. Template for drilling holes for post through bolts.
				5. Through bolts for mounting post to top and bottom mounting base.
				6. Post filler piece 8 per trim kit used to fill in around trim kit.
				7. Post Inserts: Flat. Snap in fit to change look of post.
				8. Post Inserts: Fluted. Snap in fit to change look of post.
			1. Single Support Header Beam: 6005-T5 extruded aluminum with 0.110 wall thickness. Top mounting base slides on top of post when notch is removed.
				1. Length: 12 ft (3.658 m).
				2. Length: 18 ft (5.486 m).
				3. Length: 24 ft (7.215 m).
				4. End Caps: Deluxe and Flush.
			2. Double Support Header Beam: 6005-T5 extruded aluminum with 0.110 wall thickness. Top mounting base slides on top of post when notch is removed.
				1. Length: 12 ft (3.658 m).
				2. Length: 18 ft (5.486 m).
				3. Length: 24 ft (7.215 m).
				4. End Caps: Deluxe and Flush.
			3. Support I-Beam Insert for Increasing Spans: 6082-T6 mill finish extruded aluminum.
				1. Length: 18 ft (5.486 m).
				2. Length: 24 ft (7.215 m).
			4. L-Brackets: For Wall Mount.
			5. Roof Mount Bracket used with inside gusset bracket.
			6. Roof Mount Bracket used with ledger beam.
			7. Purlin Brackets: For attaching beams or purlins. 6063-T5 extruded aluminum and powder coated.
				1. Type: Adjustable Purlin Bracket: For attaching beams or purlins at an angle.
				2. Type: Single beam.
				3. Type: Double beam.
				4. Regular bracket.
			8. Purlins: 6005-T5 extruded aluminum with 0.080 inch (2.03 mm) wall thickness and powder coated.
				1. Lengths: 8, 10, 12, 15 and 18 ft (2.438, 3.048, 3.658, 4.752, and 5.486 m) lengths.

Purlins can be spliced together for endless purlin length.

* + - 1. Purlin I-Beam Insert for 18 ft (5.486 m) long purlins. For increasing purlin spans. 6082-T6 mill finish with 0.25 (6.4 mm) wall thickness.
				1. Overhang: With I-Beam Insert: 4 ft (1.219 m) purlin overhang maximum
				2. Overhang: Without I-Beam Insert: 2 ft (610 mm) purlin overhang maximum.
			2. Center Gutter: Attached to purlin with gutter bracket. Used to merge louvers greater than 24 ft (7.315 m).
				1. Center gutter brackets.
				2. Center Gutter End Caps: Left and right side.

\*\* NOTE TO SPECIFIER \*\* Delete decorative gutters if not required.

* + - 1. Decorative Gutter:
				1. Length: 17 ft (5.182 m).
				2. Length: 22 ft (6.706 m).
				3. Gutter Splice: Mill finish 6 inch (152 mm) and connects gutter pieces together.

\*\* NOTE TO SPECIFIER \*\* Delete adjustable louvers if not required.

* + - 1. Adjustable Louvers: 6063-T5 extruded aluminum with 0.055 inch wall thickness and powder coated.
	1. RETRACTABLE SHADES:
		1. Retractable Shades: WeatherGuard Shades as manufactured by Cardinal Architectural.
			1. Wind tunnel tested up to 90 mph (144.87 kph).
			2. Large enough to cover multiple openings.
			3. Heavy-duty Zip side channels secure fabric against wind and weather.
				1. Light gaps at the edge of the system are removed.
			4. Headbox: Weather and insect resistant solid aluminum. Includes built-in hinge for easy installation.
				1. Configuration: Square.
				2. Configuration: Angled.
			5. Available Sizes (WxH): Up to 16 x 16 ft (4.879 x 4.879 m).
			6. Prevents light penetration.
			7. Fully retractable when not needed.
			8. Operation: Motorized.
				1. Remote Control: Single Channel.
				2. Remote Control: Multi-Channel.
			9. Operation: Manual.
				1. Crank Handle: 48 inches (1219 mm).
				2. Crank Handle: 60 inches (1524 mm).
				3. Crank Handle: 72 inches (1829 mm).
			10. Hardware: Case and brackets.
				1. Color: White.
				2. Color: Dark bronze.
				3. Color: Taupe.

\*\* NOTE TO SPECIFIER \*\* Fabric openness can be from 1 to 10 percent.

* + - 1. Fabric Openness: \_\_\_\_ percent.
			2. Fabric Color: \_\_\_\_\_\_\_\_.
	1. CANOPY SHADE SYSTEM
		1. Canopy System as manufactured by Cardinal Architectural. Composed of individual modules that attach together on the width side. Multiple sections are placed side by side to cover the width and as many modules per section to cover the length of the space.
			1. Canopy Width: Up to 12 ft (3658 mm) in 1/2 inch (13 mm) increments.
			2. Canopy Length: Open.
			3. Panel width: To match canopy width.
			4. Panel Length (bar to bar): Typical: Flat 24 inch (610 mm)
			5. Panel Length (bar to bar): Bellowed: 22 to 23 inches (559 to 584 mm).
			6. Panel Length (bar to bar): Custom: As requested.
			7. Vertical Length from Cable to Bottom of Canopy:
				1. When Retracted: 15 inches (381 mm).
				2. When Extended: 6 to 8 inches (152 to 203 mm).
		2. Components:
			1. Extrusion (Profile) Shade Panel.
			2. Hook and Base Pair End Cap.
			3. Frame Material: 6063T Anodized Aluminum.
			4. Frame Material: AISI316 Stainless Steel
			5. Plastic with Stainless Steel Screw 100 percent Polypropylene
			6. Limit Tape: 35 ft (10668 mm) length.
			7. Aircraft Cable: Up to 40 ft (12192 mm) projection.
				1. Stainless Steel 316 Cable: 5/32 inch (4 mm) diameter. Construction: 1x19. Breaking point: 3,000 lbs.
				2. Stainless Steel 316 Cable: 3/16 inch (5 mm) diameter. Construction: 1x19. Breaking point: 4,500 lbs.
				3. Stainless Steel 316 Cable: 1/4 inch (6 mm) diameter. Construction: 7x7. Breaking point: 7,500 lbs.
			8. Eye Screw/Eye Bolt Turnbuckle: AISI316 Stainless Steel.
				1. Open Length: 19 inches (483 mm).
				2. Closed Length: 12 inches (305 mm).
			9. Panels: Awning grade mesh or canvas and are water and mildew resistant.

\*\* NOTE TO SPECIFIER \*\* Delete the following options not required.

* + - * 1. Water-proof.
				2. Fire-proof.

\*\* NOTE TO SPECIFIER \*\* Fabric openness can be from 1 to 10 percent.

* + - 1. Panel Openness: \_\_\_\_ percent.
			2. Panel Color: \_\_\_\_\_\_\_\_.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly constructed and prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
	4. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.

* + 1. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.
	1. CLEANING AND PROTECTION
		1. Clean products in accordance with the manufacturer's recommendations.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION