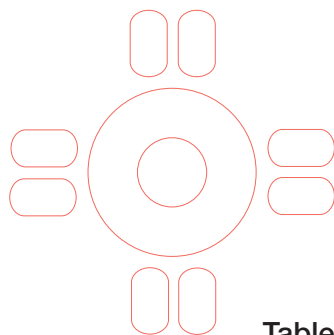


# Section 11: Weights and Measures

---



## Table of Contents

<b>How to Calculate a Standard Size Shade Form .....</b>	<b>11.02</b>
<b>Shade Height, Tube and Bracket Selector Guide for MechoShades® and Suburban™/2</b>	
Batten and Seam Specifications for MechoShades .....	11.03
Group A ShadeCloths (Series 0900, 1000, 1300, 3000 and 5400) .....	11.04
Group B ShadeCloths (Series 1600 and 2100) .....	11.05
Group C ShadeCloths (Series 1800 and 5500) .....	11.06
Group D ShadeCloths (Series 5100, 5200, 5300, 6000 and 6300) .....	11.07
Group E ShadeCloths (Series 0700) .....	11.08
Group F ShadeCloths (Series 0100) .....	11.09
<b>Shade Height, Tube and Bracket Selector Guide for ElectroShades®</b>	
Batten and Seam Specifications for ElectroShades .....	11.10
Group A ShadeCloths (Series 0900, 1000, 1300, 3000 and 5400) .....	11.11
Group B ShadeCloths (Series 1600 and 2100) .....	11.12
Group C ShadeCloths (Series 1800 and 5500) .....	11.13
Group D ShadeCloths (Series 5100, 5200, 5300, 6000 and 6300) .....	11.14
Group E ShadeCloths (Series 0700) .....	11.15
Group F ShadeCloths (Series 0100) .....	11.16
<b>Window Words .....</b>	<b>11.17</b>



## How to Calculate a Standard Size Shade

Copy this page and fill it out step by step for each combination of shade size and fabric for MechoShades and ElectroShades individually.

**For manual shades** complete steps 1 through 9.

**For motorized shades** complete only steps 1, 3, 8 and 9. Our computer and Fabricated Shade Price List automatically factor in which motor will lift the shade.

**For DoubleShade, monumental or SkyLighter shades** call your MechoShade Technical Support Representative.

- 1) Find the page in this book that matches the combination of drive system and fabric required. For example, a Mecho/5 with ThermoVeil 1300 fabric. See the table of contents for the correct page.
- 2) Using the chart at the top of the page, determine the weight of the shade by aligning the shade height and width. The weights shown are expressed in pounds and include fabric and a concealed hembar.
- 3) Next, determine the tube size found at the bottom of the column of where shade height and width meet.
- 4) Battens and seams are required if the shade is wider than the roll of fabric being specified (63", 72", 84", 96" or 126"). Check with your MechoShade representative for our current fabric width availability. Then, refer to the General Specifications and Guidelines for Battens & Seams on page 3 for MechoShades, or page 10 for ElectroShades to determine the number of battens and seams required. The batten weight must then be added at \_\_\_\_ lbs. per ft, \_\_\_\_ Kgs. per meter for each batten. In step 9, we will add 1/8" (3.2mm) for each batten to the roll diameter to compensate for its thickness.
- 5) If an exposed hembar is required, additional weight must be factored in at \_\_\_\_ lbs. per ft, \_\_\_\_ Kgs. per meter. (Only one is needed per shade).
- 6) To determine the Total Shade Weight, add steps 2, 4 and 5.
- 7) If the Total Shade Weight is over 10 lbs. for a singlebanded shade, or over 8 lbs. for a multibanded shade, a Lift-Assist Mechanism™ (LAM™) is required. If the Shade Weight shown is **bold** it indicates a LAM is needed. Bold circled numbers indicate the starting point for multibanded shades that require LAMs.

If the Total Shade Weight is over 20 lbs. for a singlebanded shade, or over 18 lbs. for a multibanded shade, with or without a LAM, ElectroShades are required. Find the appropriate ElectroShade page for the same fabric and re-calculate.

- 8) To determine the appropriate size bracket find the Roll-Up Diameter for the shade height and tube size needed in the table at the bottom of the page. Remember to add 1/8" (3.2mm) for each batten, if any, to the roll-up diameter.
- 9) Compare the Total Roll-Up Diameter determined in the table against the Maximum Roll-Up Diameter, with or without fascia, found on the bracket drawings shown just above the table. Any bracket with a Maximum Roll-Up Diameter that exceeds the Total Roll-Up Diameter can be specified as long as it fits the space it is being installed into.

Job: \_\_\_\_\_  
Job Number: \_\_\_\_\_  
Tag #: \_\_\_\_\_  
Shade Size: \_\_\_\_\_  
Fabric: \_\_\_\_\_

### Step 2: Shade Weight:

\_\_\_\_\_ Lbs.

### Step 3: Tube Size required:

\_\_\_\_\_ Inches Ø

### Step 4: Battens?

\_\_\_ Yes \_\_\_ No

+ \_\_\_\_\_ Lbs.

### Step 5: Exposed Hembar?

\_\_\_ Yes \_\_\_ No

+ \_\_\_\_\_ Lbs.

### Step 6: Total Shade Weight:

\_\_\_\_\_ Lbs.

### Step 7: Lift-Assist Mechanism required?

\_\_\_ Yes \_\_\_ No

### Step 8: Roll-up diameter required:

\_\_\_\_\_

Batten(s) thickness  
to add to roll-up:

\_\_\_\_\_

Total Roll-Up  
Diameter:

\_\_\_\_\_

### Step 9: Bracket required:

\_\_\_\_\_

With or without  
fascia?

\_\_\_ With \_\_\_ Without

MechoShade Systems, Inc.  
42-03 35th Street, Long Island City, NY 11101  
Telephone: 718-729-2020  
Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com)  
Internet Web Site: [www.mechoshade.com](http://www.mechoshade.com)

604/2  
REVISION  
**11.02**  
MS2200 - 01/01/08



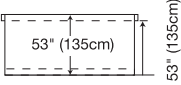
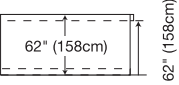
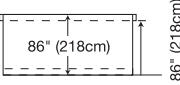
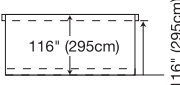
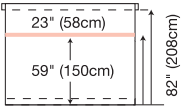
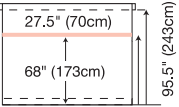
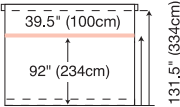
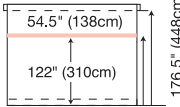
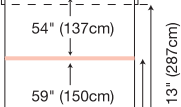
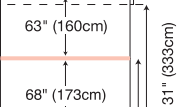
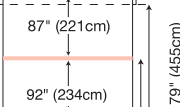
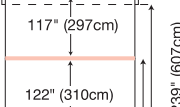
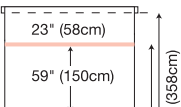
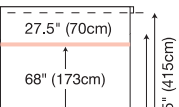
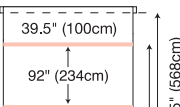
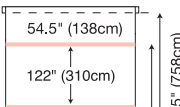
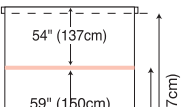
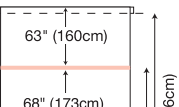
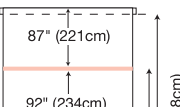
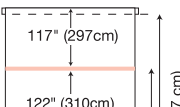
# Batten and Seam Specifications

**Battens vs. Seams:** MechoShade Systems, Inc. is one of the only, if not the only, shade manufacturer to use a batten joint vs. a seam joint. This type of construction costs more, but is highly effective in ensuring that certain types of shade bands hang and track straight. See below for an illustration of the Batten vs. Seam joint.

**Woven ScreenCloth:** All woven ScreenCloth, regardless if their core yarns are polyester or fiberglass, will stretch under their hanging weight due to "Woven Fabric Mechanical Extensibility" or "The Hour Glass Effect". In order to assure the proper tracking and rolling of the shadeband, and avoid the "Hour Glass Effect", battens are included by MechoShade as a standard detail when the width-to-height (W:H) ratio exceeds 1:4. Railroaded, multi-width shade bands will receive a 1-1/2" (38mm) batten joint. Battens may be specified for shade bands that otherwise do not need them to align with shade bands that do require battens, at additional cost. Battens will be positioned on the shade band, per the chart below, or at customer specified positions, subject to approval of MechoShade Systems, Inc., and may be at additional cost.

## Standard Batten Placement for Non-Railroaded (Standard) MechoShades:

- Batten placement for non-railroaded shades shall be the minimum required to meet the 1:4 ratio of width to height.
- Battens shall be equally spaced within the shadeband opening height. For example one batten at the mid point, or two battens at 1/3 points, or three battens at 1/4 points.
- Batten placement for blackout shades with side channels shall not exceed 4'-0" (122cm) o.c. and must be specified.

Standard Batten Placement for Railroaded (RR) MechoShades*					
Roll Widths	63" (160cm) RR*	72" (183cm) RR*	96" (244cm) RR*	126" (366cm) RR*	
SHADE HEIGHTS	Requires 1 width Railroaded*, no seam				
	Requires 1-1/2 widths Railroaded*, +1 seam				
	Requires 2 widths Railroaded*, +1 seam				
	Requires 2-1/2 widths Railroaded*, +2 seam				
	Requires 3 widths Railroaded*, +2 seams				
* All shades are measured from the bottom of the shade up to the center of the Batten joint. Railroad (RR) Shadecloth is turned width to height. All heights shown above are Opening Heights only and are based on a 1-1/2" diameter tube. Opening Heights do not include wrap. Cut panel sizes, including wrap, hem pocket and additional fabric for sealing battens and seams, are added to the opening height dimension					

## Width-to-Height (W:H) Ratio Guidelines and Edge-Clearance Specifications (fabric used normally or railroaded)

- Shadebands up to 1:3 W:H ratio**, require the standard edge-clearance deduction except for 30" (76cm) wide shadebands.
- 1:3 to 1:4 W:H ratios**, increase the hardware edge-clearance 1/16" (1.6mm) each side to 1/8" (3.2mm) additional deduction.
- 1:4 to 1:5 W:H ratios**, increase the hardware edge-clearance 1/8" (3.2mm) each side to 1/4" (6.4mm) additional deduction. Battens or optional guide cables are required.
- 1:5 to 1:6 W:H ratios**, increase the hardware edge-clearance 1/4" (6.4mm) each side to 1/2" (12.8mm) additional deduction. Battens or optional guide cables are required.
- Over 1:6 W:H ratios**, increase the hardware edge-clearance 5/16" (8mm) each side to 5/8" (16mm) additional deduction. Battens & guide cables are required.
- Railroaded multi-width shades** with horizontal joints shall have seam joints.
- Environmental conditions may require** additional use of guide cables and/or battens and increased edge clearance.

MechoShade Systems, Inc.  
42-03 35th Street, Long Island City, NY 11101  
Telephone: 718-729-2020  
Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com)  
Internet Web Site: [www.mechoshade.com](http://www.mechoshade.com)

604/2  
REVISION  
11.03  
MS2200 - 01/01/08



# Shade Height, Tube and Bracket Selector Guide for MechoShades® and Suburban™/2

## Group A ShadeCloths (Series: 0900, 1000, 1300, 3000 and 5400) .030" thick, average 1.05 lbs. per sq. yd.

Weights shown are the hanging weight of the shadeband, expressed in pounds. **ADD .01 Lbs. per inch for each Batten required.**

**Bold** numbers indicate a Lift-Assist Mechanism™ (LAM™) is required for a manual single-banded shade over 10 lbs., up to 25 lbs.

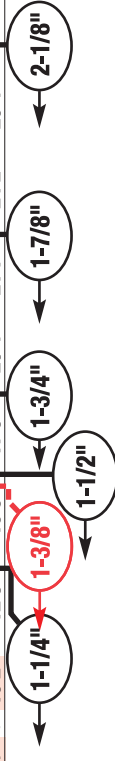
Contact MechoShade Systems Technical Support for manual shades over 25 lbs. (See Notes below).

### Roll Diameter x Opening Height

**ADD 1/8" (.125") to the below listed roll up diameters for each batten required.**  
Battens may be required when a shadeband's Width to Height Ratio is equal or greater than a 1:4 ratio or railroaded (landscaped) shadebands over 84" wide.

### ① Tube Size to Accommodate the Shade Weight & Window Span

	MechoShades										Suburban/2	
	1-1/4" Tube	1-1/2" Tube	1-3/4" Tube	1-7/8" Tube	2-1/8" Tube	1-1/4" Tube	1-1/4" Tube	1-3/8" Tube	1-1/2" Tube	1-1/2" Tube	1-1/4" Tube	1-3/8" Tube
36"	1.7	2.3	2.9	3.4	4.0	4.6	3.9	4.8	5.2	5.6	36"	5.6
48"	2.1	2.8	3.4	4.1	4.8	5.5	4.9	6.0	6.6	7.1	48"	7.1
60"	2.4	3.2	4.0	4.8	5.6	6.4	6.0	7.3	8.0	8.6	60"	8.6
72"	2.8	3.7	4.6	5.5	6.5	7.4	7.0	8.2	8.6	9.4	72"	9.4
84"	3.1	4.2	5.2	6.2	7.3	8.3	8.1	9.0	9.4	9.9	84"	10.8
96"	3.5	4.6	5.8	6.9	8.1	9.2	9.1	10.2	10.7	11.2	96"	12.2
108"	3.8	5.1	6.4	7.6	8.9	10.2	10.2	11.3	11.9	12.5	108"	13.6
120"	4.2	5.6	6.9	8.3	9.7	11.1	11.2	12.5	13.1	13.7	120"	15.0
126"	4.3	5.8	7.2	8.7	10.1	11.6	11.8	13.1	13.7	14.4	126"	15.7
132"	4.5	6.0	7.5	9.0	10.5	12.0	12.3	13.7	14.3	15.0	132"	15.7
144"	4.9	6.5	8.1	9.7	11.4	13.0	13.3	14.8	15.6	16.3	144"	16.3
156"	5.2	7.0	8.7	10.4	12.2	13.9	14.4	16.0	16.8	17.6	156"	17.6
168"	5.6	7.4	9.3	11.1	13.0	14.8	15.4	17.2	18.0	18.9	168"	18.9
180"	5.9	7.9	9.9	11.8	13.8	15.8	16.5	18.3	19.2	20.2	180"	20.2
192"	6.3	8.4	10.4	12.5	14.6	16.7	17.5	19.5	20.5	21.4	192"	21.4
204"	6.6	8.8	11.0	13.2	15.4	17.6	18.6	20.7	21.7	22.7	204"	22.7
216"	7.0	9.3	11.6	13.9	16.3	18.6	19.6	21.8	22.9	24.0	Contact factory or 216" use ElectroShades 228"	
228"	7.3	9.8	12.2	14.6	17.1	19.5	20.7	23.0	24.1	25.4		
240"	7.7	10.2	12.8	15.3	17.9	20.4	21.7	24.2	25.4	26.8	240"	26.8



### ③ Bracket Selection For larger size shades contact our technical or estimating departments or see ElectroShade section.

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Mecho® SlimLine™	M5-SL	2.25"	2.75"	1-1/4" & 1-1/2"
Mecho® 5 Wide	M5-WI	2.75"	2.75"	1-1/4", 1-1/2", 1-3/4" & 2-1/8"
Mecho/5 Pocket	M5-PKT	N/A	4.0"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Mecho/5 Extended	M5-EXT	3.438"	5.0"	1-1/4", 1-1/2", 1-3/4" & 2-1/8"
Suburban™ /2	SU-2EC/SU-2SC	2.375"	2.375"	1-1/4" & 1-3/8"

\* When determining the space required by a specific bracket, factor in both the fascia and roll up diameter of the shade cloth. The roll up diameter for Mecho/5 Pocket and Extended without fascia may extend beyond the bracket dimensions.

### Instructions.

- Determine the proper tube for the width and height of the shadeband.
- Determine the roll up diameter for the tube and opening height, making adjustment for battens as required.
- Determine which bracket model can accommodate the roll up diameter required.

### Note:

- For multibanded MechoShades, a Lift-Assist Mechanism is recommended at 8 Lbs.
- Suburban/2 shades cannot be multibanded.
- Shadebands less than 30" require battens @ +1:3 ratio.

MechoShade Systems, Inc.

42-03 35th Street, Long Island City, NY 11101 • Telephone: 718-729-2020 • Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com) • Internet Web Site: <http://www.mechoshade.com>

© Copyright 2008, MechoShade Systems, Inc., Long Island City, NY. ElectroShade and MechoShade are registered trademarks of, and LAM, Lift-Assist Mechanism, SlimLine and Suburban are trademarks of MechoShade Systems, Inc. Specifications subject to change without notice.

# Shade Height, Tube and Bracket Selector Guide for MechoShades® and Suburban™/2

## Group B ShadeCloths (Series: 1600 and 2100) .030" thick, average .95 lbs. per sq. yd.

Weights shown are the hanging weight of the shadeband, expressed in pounds. **ADD .01 Lbs. per inch for each Batten required.**

**Bold** numbers indicate a Lift-Assist Mechanism™ (LAM™) is required for a manual single-banded shade over 10 lbs., up to 25 lbs.

Contact MechoShade Systems Technical Support for manual shades over 25 lbs. (See Notes below).

### ① Tube Size to Accommodate the Shade Weight & Window Span

	MechoShades												Suburban/2	
	1-1/4" Tube	1-1/2" Tube	1-3/4" Tube	1-7/8" Tube	2-1/8" Tube	1-1/4" Tube	1-1/2" Tube	1-3/4" Tube	1-7/8" Tube	2-1/8" Tube	1-1/4" Tube	1-1/2" Tube	1-3/8" Tube	1-3/8" Tube
36"	1.6	2.1	2.7	3.2	3.8	4.3	3.6	4.0	4.2	4.4	4.8	5.2	5.6	6.1
48"	1.9	2.6	3.2	3.9	4.5	5.2	4.5	5.0	5.3	5.6	6.1	6.6	7.0	7.3
60"	2.3	3.0	3.8	4.5	5.3	6.0	5.5	6.1	6.4	6.7	7.3	7.9	8.6	9.3
72"	2.6	3.4	4.3	5.1	6.0	6.8	6.4	7.2	7.5	7.9	8.6	9.3	9.9	10.2
84"	2.9	3.8	4.8	5.8	6.7	7.7	7.4	8.2	8.6	9.0	9.9	10.2	11.1	11.4
96"	3.2	4.3	5.3	6.4	7.5	8.5	8.3	9.3	9.7	10.2	11.1	11.4	12.4	12.7
108"	3.5	4.7	5.9	7.0	8.2	9.4	9.3	10.3	10.8	11.4	12.4	12.7	13.7	14.0
120"	3.8	5.1	6.4	7.7	8.9	10.2	10.2	11.4	11.9	12.5	13.7	14.0	15.0	15.3
126"	4.0	5.3	6.7	8.0	9.3	10.6	10.7	11.9	12.5	13.1	14.3	14.9	15.6	16.4
132"	4.2	5.5	6.9	8.3	9.7	11.1	11.2	12.4	13.1	13.7	14.9	15.6	16.4	17.2
144"	4.5	6.0	7.4	8.9	10.4	11.9	12.1	13.5	14.2	14.8	16.2	16.9	17.7	18.6
156"	4.8	6.4	8.0	9.6	11.2	12.8	13.1	14.5	15.3	16.0	17.2	17.9	18.8	19.7
168"	5.1	6.8	8.5	10.2	11.9	13.6	14.0	15.6	16.4	17.2	18.3	19.0	20.0	20.8
180"	5.4	7.2	9.0	10.8	12.6	14.4	15.0	16.7	17.5	18.3	19.5	20.6	21.8	23.0
192"	5.7	7.6	9.6	11.5	13.4	15.3	15.9	17.7	18.6	19.5	20.6	21.8	23.0	24.1
204"	6.1	8.1	10.1	12.1	14.1	16.1	16.9	18.8	19.7	20.6	21.8	23.0	24.1	25.2
216"	6.4	8.5	10.6	12.7	14.8	17.0	17.8	19.8	20.8	21.8	23.0	24.1	25.2	26.3
228"	6.7	8.9	11.1	13.4	15.6	17.8	18.8	20.9	21.9	23.0	24.1	25.2	26.3	27.4
240"	7.0	9.3	11.7	14.0	16.3	18.7	19.7	22.0	23.0	24.1	25.2	26.3	27.4	28.5



### ③ Bracket Selection For larger size shades contact our technical or estimating departments or see ElectroShade section.

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Mecho® SlimLine™	MS-SL	2.25"	2.75"	1-1/4" & 1-1/2"
Mecho®/5 Wide	M5-WI	2.75"	2.75"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Mecho/5 Pocket	M5-PKT	N/A	4.0"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Mecho/5 Extended	M5-EXT	3.438"	5.0"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Suburban™/2	SU-2EC/SU-2SC	2.375"	2.375"	1-1/4" & 1-3/8"

\* When determining the space required by a specific bracket, factor in both the fascia and roll up diameter of the shade cloth. The roll up diameter for Mecho/5 Pocket and Extended without fascia may extend beyond the bracket dimensions.

### Roll Diameter x Opening Height

ADD 1/8" (.125") to the below listed roll up diameters for each batten required. Battens may be required when a shadeband's Width to Height Ratio is equal or greater than a 1:4 ratio or railroaded (landscaped) shadebands over 84" wide.

MechoShades						Suburban/2	
1-1/4" Tube	1-1/2" Tube	1-3/4" Tube	1-7/8" Tube	2-1/8" Tube	1-1/4" Tube	1-1/2" Tube	1-3/8" Tube
1.742"	1.978"	2.182"	2.284"	2.531"	1.742"	1.742"	1.865"
1.869"	2.091"	2.285"	2.382"	2.620"	1.869"	1.869"	1.984"
1.988"	2.198"	2.383"	2.477"	2.706"	1.988"	1.988"	2.096"
2.100"	2.300"	2.478"	2.568"	2.790"	2.100"	2.100"	2.203"
2.207"	2.397"	2.569"	2.655"	2.871"	2.207"	2.207"	2.305"
2.308"	2.491"	2.656"	2.740"	2.949"	2.308"	2.308"	
2.406"	2.582"	2.741"	2.823"	3.026"	2.406"	2.406"	
2.499"	2.669"	2.824"	2.903"	3.101"	2.499"	2.499"	
2.545"	2.711"	2.864"	2.942"	3.138"	2.545"	2.545"	
2.589"	2.753"	2.904"	2.981"	3.174"	2.589"	2.589"	
2.676"	2.835"	2.982"	3.057"	3.246"	2.676"	2.676"	
2.761"	2.915"	3.058"	3.131"	3.315"	2.761"	2.761"	
2.843"	2.993"	3.132"	3.203"	3.384"	2.843"	2.843"	
2.922"	3.068"	3.204"	3.274"	3.451"	2.922"	2.922"	
3.000"	3.142"	3.275"	3.343"	3.517"	3.000"	3.000"	
3.075"	3.214"	3.344"	3.411"	3.581"	3.075"	3.075"	
3.149"	3.285"	3.412"	3.478"	3.645"	3.149"	3.149"	
3.221"	3.354"	3.479"	3.543"	3.707"	3.221"	3.221"	
3.291"	3.422"	3.544"	3.607"	3.769"	3.291"	3.291"	

The above diameters include the following amount of wrap:

5-1/2"	7-1/2"	8-1/2"	10"	5-1/2"
--------	--------	--------	-----	--------

### Instructions.

- Determine the proper tube for the width and height of the shadeband.
- Determine the roll up diameter for the tube and opening height, making adjustment for battens as required.
- Determine which bracket model can accommodate the roll up diameter required.

### Note:

- For multibanded MechoShades, a Lift-Assist Mechanism is recommended at 8 Lbs.
- Suburban/2 shades cannot be multibanded.
- Shadebands less than 30" require battens @ +1:3 ratio.

MechoShade Systems, Inc.

42-03 35th Street, Long Island City, NY 11101 • Telephone: 718-729-2020 • Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com) • Internet Web Site: <http://www.mechoshade.com>

© Copyright 2008, MechoShade Systems, Inc., Long Island City, NY. ElectroShade and MechoShade are registered trademarks of, and LAM, Lift-Assist Mechanism, SlimLine and Suburban are trademarks of MechoShade Systems, Inc. Specifications subject to change without notice.



# Shade Height, Tube and Bracket Selector Guide for MechoShades® and Suburban™/2

## Group C ShadeCloths (Series: 1800 and 5500) .030" thick, average .8465 lbs. per sq. yd.

Weights shown are the hanging weight of the shadeband, expressed in pounds. **ADD .01 Lbs. per inch for each Batten required.**

**Bold** numbers indicate a Lift-Assist Mechanism™ (LAM™) is required for a manual single-banded shade over 10 lbs., up to 25 lbs.

Contact MechoShade Systems Technical Support for manual shades over 25 lbs. (See Notes below).

### ① Tube Size to Accommodate the Shade Weight & Window Span

	36"	48"	60"	72"	84"	96"	108"	120"	126"	132"	144"	156"	HT
36"	1.5	2.0	2.5	3.0	3.5	4.0	3.3	3.6	3.8	4.0	4.4	4.7	36"
48"	1.8	2.4	3.0	3.6	4.2	4.8	4.1	4.6	4.8	5.0	5.5	6.0	48"
60"	2.1	2.8	3.5	4.2	4.9	5.5	5.0	5.5	5.8	6.1	6.6	7.2	60"
72"	2.4	3.1	3.9	4.7	5.5	6.3	5.8	6.5	6.8	7.1	7.8	8.4	72"
84"	2.6	3.5	4.4	5.3	6.2	7.0	6.7	7.4	7.8	8.1	8.9	9.6	84"
96"	2.9	3.9	4.9	5.8	6.8	7.8	7.5	8.4	8.8	9.2	10.0	10.8	96"
108"	3.2	4.3	5.3	6.4	7.5	8.6	8.4	9.3	9.8	10.2	11.1	11.9	108"
120"	3.5	4.7	5.8	7.0	8.1	9.3	9.4	10.2	10.7	11.3	12.3	13.3	120"
126"	3.6	4.8	6.1	7.3	8.5	9.7	9.6	10.7	11.2	11.8	12.8	13.8	126"
132"	3.8	5.0	6.3	7.5	8.8	10.1	10.0	11.2	11.7	12.3	13.4	14.4	132"
144"	4.1	5.4	6.8	8.1	9.5	10.8	10.9	12.1	12.7	13.3	14.5	15.7	144"
156"	4.3	5.8	7.2	8.7	10.1	11.6	11.7	13.1	13.7	14.4	15.7	17.1	156"
168"	4.6	6.2	7.7	9.2	10.8	12.3	12.6	14.0	14.7	15.4	16.7	18.1	168"
180"	4.9	6.5	8.2	9.8	11.4	13.1	13.4	14.9	15.7	16.4	17.7	19.1	180"
192"	5.2	6.9	8.6	10.4	12.1	13.8	14.3	15.9	16.7	17.5	18.8	20.1	192"
204"	5.5	7.3	9.1	10.9	12.8	14.6	15.1	16.8	17.7	18.5	20.0	21.3	204"
216"	5.8	7.7	9.6	11.5	13.4	15.3	16.0	17.8	18.6	19.5	21.0	22.3	216"
228"	6.0	8.0	10.0	12.1	14.1	16.1	16.8	18.7	19.6	20.6	22.1	23.4	228"
240"	6.3	8.4	10.5	12.6	14.7	16.8	17.7	19.7	20.6	21.6	23.1	24.4	240"

### ③ Bracket Selection For larger size shades contact our technical or estimating departments or see ElectroShade section.

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Mecho® SlimLine™	MS-SL	2.25"	2.75"	1-1/4" & 1-1/2"
Mecho®/5 Wide	M5-WI	2.75"	2.75"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Mecho/5 Pocket	M5-PKT	N/A	4.0"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Mecho/5 Extended	M5-EXT	3.438"	5.0"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Suburban™ /2	SU-2UN	2.375"	2.375"	1-1/4" & 1-3/8"

\* When determining the space required by a specific bracket, factor in both the fascia and roll up diameter of the shade cloth. The roll up diameter for Mecho/5 Pocket and Extended without fascia may extend beyond the bracket dimensions.

### Roll Diameter x Opening Height

**ADD 1/8" (.125") to the below listed roll up diameters for each batten required.**

Battens may be required when a shadeband's Width to Height Ratio is equal or greater than a 1:4 ratio or railroaded (landscaped) shadebands over 84" wide.

MechoShades					Suburban/2	
②	1-1/4" Tube	1-1/2" Tube	1-3/4" Tube	1-7/8" Tube	2-1/8" Tube	1-1/4" Tube
1-1/4"	1.742"	1.978"	2.182"	2.284"	2.531"	1.742"
1-1/2"	1.869"	2.091"	2.285"	2.382"	2.620"	1.869"
1-3/4"	1.988"	2.198"	2.383"	2.477"	2.706"	1.988"
1-7/8"	2.100"	2.300"	2.478"	2.568"	2.790"	2.100"
2-1/8"	2.207"	2.397"	2.569"	2.655"	2.871"	2.207"
2-1/4"	2.308"	2.491"	2.656"	2.740"	2.949"	2.308"
2-1/2"	2.406"	2.582"	2.741"	2.823"	3.026"	
2-3/4"	2.499"	2.669"	2.824"	2.903"	3.101"	
2-5/8"	2.545"	2.711"	2.864"	2.942"	3.138"	
2-5/4"	2.589"	2.753"	2.904"	2.981"	3.174"	
2-6/7"	2.676"	2.835"	2.982"	3.057"	3.246"	
2-7/8"	2.761"	2.915"	3.058"	3.131"	3.315"	
2-8/5"	2.843"	2.993"	3.132"	3.203"	3.384"	
2-9/2"	2.922"	3.068"	3.204"	3.274"	3.451"	
3-0/0"	3.000"	3.142"	3.275"	3.343"	3.517"	
3-0/75"	3.075"	3.214"	3.344"	3.411"	3.581"	
3-1/4"	3.149"	3.285"	3.412"	3.478"	3.645"	
3-2/21"	3.221"	3.354"	3.479"	3.543"	3.707"	
3-2/91"	3.291"	3.422"	3.544"	3.607"	3.769"	

The above diameters include the following amount of wrap:

5-1/2"	7-1/2"	8-1/2"	10"	5-1/2"	5-1/2"
--------	--------	--------	-----	--------	--------

### Instructions.

- Determine the proper tube for the width and height of the shadeband.
- Determine the roll up diameter for the tube and opening height, making adjustment for battens as required.
- Determine which bracket model can accommodate the roll up diameter required.

### Note:

- For multibanded MechoShades, a Lift-Assist Mechanism is recommended at 8 Lbs.
- Suburban/2 shades cannot be multibanded.
- Shadebands less than 30" require battens @ +1:3 ratio.

MechoShade Systems, Inc.

42-03 35th Street, Long Island City, NY 11101 • Telephone: 718-729-2020 • Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com) • Internet Web Site: <http://www.mechoshade.com>

© Copyright 2008, MechoShade Systems, Inc., Long Island City, NY. ElectroShade and MechoShade are registered trademarks of, and LAM, Lift-Assist Mechanism, SlimLine and Suburban are trademarks of MechoShade Systems, Inc. Specifications subject to change without notice.

# Shade Height, Tube and Bracket Selector Guide for MechoShades® and Suburban™/2

## Group D ShadeCloths (Series: 5100, 5200, 5300, 6000 and 6300) .024" thick, average .9 lbs. per sq. yd.

Weights shown are the hanging weight of the shadeband, expressed in pounds. **ADD .01 Lbs. per inch for each Batten required.**

**Bold** numbers indicate a Lift-Assist Mechanism™ (LAM™) is required for a manual single-banded shade over 10 lbs., up to 25 lbs.

Contact MechoShade Systems Technical Support for manual shades over 25 lbs. (See Notes below).

### Roll Diameter x Opening Height

**ADD 1/8" (.125") to the below listed roll up diameters for each batten required.**

Battens may be required when a shadeband's Width to Height Ratio is equal or greater than a 1:4 ratio or railroaded (landscaped) shadebands over 84" wide.

### ① Tube Size to Accommodate the Shade Weight & Window Span

	36"	48"	60"	72"	84"	96"	108"	120"	126"	132"	144"	156"	HT
36"	1.6	2.1	2.6	3.1	3.7	4.2	3.4	3.8	4.0	4.2	4.6	5.0	36"
48"	1.9	2.5	3.1	3.7	4.4	5.0	4.3	4.8	5.1	5.3	5.8	6.3	48"
60"	2.2	2.9	3.6	4.3	5.1	5.8	5.2	5.8	6.1	6.4	7.0	7.6	60"
72"	2.5	3.3	4.1	4.9	5.8	6.6	6.1	6.8	7.2	7.5	8.2	8.9	72"
84"	2.8	3.7	4.6	5.5	6.5	7.4	7.0	7.8	8.2	8.6	9.4	10.2	84"
96"	3.1	4.1	5.1	6.1	7.2	8.2	8.0	8.8	9.3	9.7	10.6	11.4	96"
108"	3.4	4.5	5.6	6.7	7.9	9.0	8.8	9.8	10.3	10.8	11.8	12.6	108"
120"	3.7	4.9	6.1	7.3	8.6	9.8	9.7	10.8	11.4	11.9	13.0	13.8	120"
126"	3.8	5.1	6.4	7.6	8.9	10.2	10.2	11.3	11.9	12.5	13.6	14.2	126"
132"	4.0	5.3	6.6	7.9	9.3	10.6	10.6	11.8	12.4	13.0	14.2	15.0	132"
144"	4.3	5.7	7.1	8.5	10.0	11.4	11.5	12.8	13.5	14.1	15.4	16.2	144"
156"	4.6	6.1	7.6	9.1	10.7	12.2	12.4	13.8	14.5	15.2	16.6	17.4	156"
168"	4.9	6.5	8.1	9.7	11.4	13.0	13.3	14.8	15.6	16.3	17.8	18.6	168"
180"	5.2	6.9	8.6	10.3	12.1	13.8	14.2	15.8	16.6	17.4	19.0	19.8	180"
192"	5.5	7.3	9.1	10.9	12.8	14.6	15.1	16.8	17.7	18.5	20.2	21.0	192"
204"	5.8	7.7	9.6	11.5	13.5	15.4	16.0	17.8	18.7	19.6	21.4	22.2	204"
216"	6.1	8.1	10.1	12.1	14.2	16.2	16.9	18.8	19.8	20.7	22.6	23.4	216"
228"	6.4	8.5	10.6	12.7	14.9	17.0	17.8	19.8	20.8	21.8	23.8	24.6	228"
240"	6.7	8.9	11.1	13.3	15.6	17.8	18.7	20.8	21.9	22.9	24.9	25.7	240"

### ③ Bracket Selection For larger size shades contact our technical or estimating departments or see ElectroShade section.

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Mecho® SlimLine™	MS-SL	2.25"	2.75"	1-1/4" & 1-1/2"
Mecho®/5 Wide	M5-WI	2.75"	2.75"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Mecho/5 Pocket	M5-PKT	N/A	4.0"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Mecho/5 Extended	M5-EXT	3.438"	5.0"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Suburban™/2	SU-2EC/SU-2SC	2.375"	2.375"	1-1/4" & 1-3/8"

\* When determining the space required by a specific bracket, factor in both the fascia and roll up diameter of the shade cloth.

The roll up diameter for Mecho/5 Pocket and Extended without fascia may extend beyond the bracket dimensions.

### ② MechoShades

1-1/4" Tube	1-1/2" Tube	1-3/4" Tube	1-7/8" Tube	2-1/8" Tube	1-1/4" Tube	1-3/8" Tube
1.649"	1.892"	2.103"	2.208"	2.461"	1.649"	1.777"
1.756"	1.987"	2.189"	2.290"	2.534"	1.756"	1.878"
1.858"	2.077"	2.271"	2.369"	2.605"	1.858"	1.973"
1.954"	2.163"	2.350"	2.445"	2.675"	1.954"	2.064"
2.046"	2.247"	2.427"	2.519"	2.743"	2.046"	2.151"
2.134"	2.327"	2.501"	2.590"	2.804"	2.134"	2.235"
2.218"	2.404"	2.574"	2.660"	2.873"	2.218"	2.315"
2.299"	2.480"	2.644"	2.728"	2.936"	2.299"	2.399"
2.339"	2.516"	2.679"	2.762"	2.968"	2.339"	2.339"
2.378"	2.552"	2.713"	2.795"	2.998"	2.378"	2.998"
2.454"	2.623"	2.779"	2.860"	3.059"	2.454"	3.059"
2.527"	2.692"	2.845"	2.923"	3.118"	2.527"	3.118"
2.599"	2.760"	2.908"	2.985"	3.177"	2.599"	3.177"
2.669"	2.825"	2.971"	3.046"	3.234"	2.669"	3.234"
2.736"	2.890"	3.032"	3.106"	3.290"	2.736"	3.290"
2.803"	2.952"	3.092"	3.164"	3.345"	2.803"	3.345"
2.867"	3.014"	3.151"	3.222"	3.400"	2.867"	3.400"
2.931"	3.074"	3.208"	3.278"	3.453"	2.931"	3.453"
2.993"	3.133"	3.265"	3.334"	3.506"	2.993"	3.506"

The above diameters include the following amount of wrap:

5-1/2"	7-1/2"	8-1/2"	10"	5-1/2"	5-1/2"
--------	--------	--------	-----	--------	--------

### Instructions.

- Determine the proper tube for the width and height of the shadeband.
- Determine the roll up diameter for the tube and opening height, making adjustment for battens as required.
- Determine which bracket model can accommodate the roll up diameter required.

### Note:

- For multibanded MechoShades, a Lift-Assist Mechanism is recommended at 8 Lbs.
- Suburban/2 shades cannot be multibanded.
- Shadebands less than 30" require battens @ +1:3 ratio.

MechoShade Systems, Inc.

42-03 35th Street, Long Island City, NY 11101 • Telephone: 718-729-2020 • Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com) • Internet Web Site: <http://www.mechoshade.com>

© Copyright 2006, MechoShade Systems, Inc., Long Island City, NY. ElectroShade and MechoShade are registered trademarks of, and LAM, Lift-Assist Mechanism, SlimLine and Suburban are trademarks of MechoShade Systems, Inc. Specifications subject to change without notice.

# Shade Height, Tube and Bracket Selector Guide for MechoShades® and Suburban™/2

## Group E Blackout ShadeCloths (Series: 0700) .016" thick, average .8750 lbs per sq. yd.

Weights shown are the hanging weight of the shadeband, expressed in pounds. **ADD .01 Lbs. per inch for each Batten required.**

**Bold numbers indicate a Lift-Assist Mechanism™ (LAM™) is required for a manual single-banded shade over 10 lbs., up to 25 lbs.**  
Contact MechoShade Systems Technical Support for manual shades over 25 lbs. (See Notes below).

### ① Tube Size to Accommodate the Shade Weight & Window Span

	36"	48"	60"	72"	84"	96"	108"	120"	126"	132"	144"	156"	HT
36"	1.5	2.0	2.6	3.1	3.6	4.1	3.4	3.7	3.9	4.1	4.5	4.9	36"
48"	1.8	2.4	3.1	3.7	4.3	4.9	4.2	4.7	4.9	5.2	5.7	6.1	48"
60"	2.1	2.8	3.5	4.3	5.0	5.7	5.1	5.7	6.0	6.3	6.8	7.4	60"
72"	2.4	3.2	4.0	4.8	5.6	6.4	6.0	6.7	7.0	7.3	8.0	8.7	72"
84"	2.7	3.6	4.5	5.4	6.3	7.2	6.9	7.6	8.0	8.4	9.2	9.9	84"
96"	3.0	4.0	5.0	6.0	7.0	8.0	7.7	8.6	9.0	9.5	10.3	11.1	96"
108"	3.3	4.4	5.5	6.6	7.7	8.8	8.6	9.6	10.0	10.5	11.5	12.3	108"
120"	3.6	4.8	6.0	7.2	8.4	9.6	9.5	10.5	11.1	11.6	12.7	13.5	120"
126"	3.7	5.0	6.2	7.5	8.7	9.9	9.9	11.0	11.6	12.1	13.2	14.0	126"
132"	3.9	5.2	6.5	7.8	9.0	10.3	10.4	11.5	12.1	12.7	13.8	14.6	132"
144"	4.2	5.6	6.9	8.3	9.7	11.1	11.2	12.5	13.1	13.7	15.0	15.8	144"
156"	4.5	5.9	7.4	8.9	10.4	11.9	12.1	13.5	14.1	14.8	16.2	17.0	156"
168"	4.8	6.3	7.9	9.5	11.1	12.7	13.0	14.4	15.2	15.9	17.4	18.2	168"
180"	5.0	6.7	8.4	10.1	11.8	13.4	13.9	15.4	16.2	16.9	18.4	19.2	180"
192"	5.3	7.1	8.9	10.7	12.4	14.2	14.7	16.4	17.2	18.0	19.5	20.3	192"
204"	5.6	7.5	9.4	11.3	13.1	15.0	15.6	17.4	18.2	19.1	20.6	21.4	204"
216"	5.9	7.9	9.9	11.8	13.8	15.8	16.5	18.3	19.2	20.2	21.7	22.5	216"
228"	6.2	8.3	10.4	12.4	14.5	16.6	17.4	19.3	20.3	21.2	22.7	23.5	228"
240"	6.5	8.7	10.8	13.0	15.2	17.3	18.2	20.3	21.3	22.3	23.8	24.6	240"

### ③ Bracket Selection For larger size shades contact our technical or estimating departments or see ElectroShade section.

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Mecho® SlimLine™	MS-SL	2.25"	2.75"	1-1/4" & 1-1/2"
Mecho®/5 Wide	M5-WI	2.75"	2.75"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Mecho/5 Pocket	M5-PKT	N/A	4.0"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Mecho/5 Extended	M5-EXT	3.438"	5.0"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Suburban™ /2	SU-2EC/SU-2SC	2.375"	2.375"	1-1/4" & 1-3/8"

\* When determining the space required by a specific bracket, factor in both the fascia and roll up diameter of the shade cloth. The roll up diameter for Mecho/5 Pocket and Extended without fascia may extend beyond the bracket dimensions.

### Roll Diameter x Opening Height

**ADD 1/8" (-125") to the below listed roll up diameters for each batten required.**  
Battens may be required when a shadeband's Width to Height Ratio is equal or greater than a 1:4 ratio or railroaded (landscaped) shadebands over 84" wide.

MechoShades						Suburban/2	
1-1/4" Tube	1-1/2" Tube	1-3/4" Tube	1-7/8" Tube	2-1/8" Tube	1-1/4" Tube	1-3/8" Tube	1-3/8" Tube
1.515"	1.765"	1.992"	2.103"	2.363"	1.515"	1.515"	1.654"
1.594"	1.833"	2.053"	2.160"	2.415"	1.594"	1.594"	1.727"
1.669"	1.899"	2.111"	2.216"	2.465"	1.669"	1.669"	1.796"
1.740"	1.962"	2.169"	2.271"	2.514"	1.740"	1.740"	1.863"
1.809"	2.023"	2.224"	2.324"	2.562"	1.809"	1.809"	1.927"
1.875"	2.083"	2.278"	2.376"	2.609"	1.875"	1.875"	1.990"
1.940"	2.141"	2.331"	2.427"	2.656"	1.940"	1.940"	2.050"
2.002"	2.197"	2.383"	2.477"	2.701"	2.002"	2.002"	2.109"
2.032"	2.225"	2.409"	2.501"	2.724"	2.032"	2.032"	2.138"
2.062"	2.252"	2.434"	2.525"	2.746"	2.062"	2.062"	2.166"
2.120"	2.306"	2.484"	2.573"	2.790"	2.120"	2.120"	2.222"
2.177"	2.358"	2.533"	2.620"	2.834"	2.177"	2.177"	2.276"
2.233"	2.409"	2.580"	2.667"	2.877"	2.233"	2.233"	2.330"
2.287"	2.460"	2.627"	2.712"	2.919"	2.287"	2.287"	
2.339"	2.509"	2.673"	2.757"	2.960"	2.339"	2.339"	
2.391"	2.557"	2.719"	2.801"	3.001"	2.391"	2.391"	
2.442"	2.604"	2.763"	2.844"	3.042"	2.442"	2.442"	
2.491"	2.651"	2.807"	2.887"	3.082"	2.491"	2.491"	
2.540"	2.697"	2.850"	2.929"	3.121"	2.540"	2.540"	

The above diameters include the following amount of wrap:

5-1/2"	7-1/2"	8-1/2"	10"	5-1/2"	5-1/2"
--------	--------	--------	-----	--------	--------

### Instructions.

- Determine the proper tube for the width and height of the shadeband.
- Determine the roll up diameter for the tube and opening height, making adjustment for battens as required.
- Determine which bracket model can accommodate the roll up diameter required.

### Notes:

- For multibanded MechoShades, a Lift-Assist Mechanism is recommended at 8 Lbs.
- Suburban/2 shades cannot be multibanded.
- Shadebands less than 30" require battens @ +1:3 ratio.

MechoShade Systems, Inc.

42-03 35th Street, Long Island City, NY 11101 • Telephone: 718-729-2020 • Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com) • Internet Web Site: <http://www.mechoshade.com>

© Copyright 2008, MechoShade Systems, Inc., Long Island City, NY. ElectroShade and MechoShade are registered trademarks of, and LAM, Lift-Assist Mechanism, SlimLine and Suburban are trademarks of MechoShade Systems, Inc. Specifications subject to change without notice.



# Shade Height, Tube and Bracket Selector Guide for MechoShades® and Suburban™ /2

## Group F Blackout ShadeCloths (Series: 0100) .0216" thick, average .793 lbs per sq. yd.

Weights shown are the hanging weight of the shadeband, expressed in pounds, **ADD .01 Lbs. per inch for each Batten required.**

**Bold** numbers indicate a Lift-Assist Mechanism™ (LAM™) is required for a manual single-banded shade over 10 lbs., up to 25 lbs. Contact MechoShade Systems Technical Support for manual shades over 25 lbs. (See Notes below).

Roll Diameter x Opening Height

**ADD 1/8" (.125") to the below listed roll up diameters for each batten required.**  
Battens may be required when a shadeband's Width to Height Ratio is equal or greater than a 1:4 ratio or railroaded (landscaped) shadebands over 84" wide.

### ① Tube Size to Accommodate the Shade Weight & Window Span

### ② MechoShades

### Suburban/2

	36"	48"	60"	72"	84"	96"	108"	120"	126"	132"	144"	156"	HT	1-1/4" Tube	1-1/2" Tube	1-3/4" Tube	1-7/8" Tube	2-1/8" Tube	1-1/4" Tube	1-3/8" Tube
36"	1.5	1.9	2.4	2.9	3.4	3.9	3.1	3.5	3.6	3.8			36"	1.61"	1.86"	2.07"	2.18"	2.43"	1.61"	1.74
48"	1.7	2.3	2.8	3.4	4.0	4.6	3.9	4.3	4.6				48"	1.71"	1.94"	2.15"	2.25"	2.50"	1.71"	1.83
60"	2.0	2.6	3.3	4.0	4.6	5.3	4.6	5.2	5.5				60"	1.80"	2.03"	2.22"	2.32"	2.56"	1.80"	1.92
72"	2.2	3.0	3.7	4.5	5.2	6.0	5.4	6.1	6.4				72"	1.89"	2.11"	2.30"	2.39"	2.63"	1.89"	2.01
84"	2.5	3.3	4.2	5.0	5.8	6.7	6.1	7.0					84"	1.98"	2.18"	2.37"	2.46"	2.69"	1.98"	2.09
96"	2.8	3.7	4.6	5.6	6.4	7.4	6.9	7.9					96"	2.06"	2.26"	2.44"	2.53"	2.75"	2.06"	2.16
108"	3.0	4.0	5.0	6.1	7.1	8.1	7.6						108"	2.14"	2.33"	2.50"	2.59"	2.81"	2.14"	2.24
120"	3.3	4.4	5.5	6.6	7.7	8.8	8.4						120"	2.21"	2.40"	2.57"	2.66"	2.87"	2.21"	2.31
126"	3.4	4.6	5.7	6.7	8.0	9.2	9.1						126"	2.25"	2.43"	2.60"	2.69"	2.90"	2.25"	
132"	3.5	4.7	5.9	7.1	8.3	9.5	9.9						132"	2.29"	2.47"	2.63"	2.72"	2.92"	2.29"	
144"	3.8	5.1	6.3	7.7	8.9	10.2	10.6						144"	2.36"	2.53"	2.69"	2.78"	2.98"		
156"	4.0	5.4	6.8	8.2	9.5	10.9	11.4						156"	2.43"	2.60"	2.75"	2.84"	3.04"		
168"	4.3	5.8	7.2	8.7	10.1	11.6	12.1						168"	2.49"	2.66"	2.81"	2.89"	3.09"		
180"	4.6	6.1	7.7	9.3	10.7	12.3	12.9						180"	2.56"	2.72"	2.87"	2.95"	3.14"		
192"	4.8	6.5	8.1	9.8	11.3	13.0	13.6						192"	2.62"	2.78"	2.93"	3.00"	3.19"		
204"	5.1	6.8	8.5	10.3	11.9	13.7	14.4						204"	2.69"	2.84"	2.98"	3.06"	3.25"		
216"	5.3	7.2	9.0	10.9	12.5	14.4	15.1						216"	2.75"	2.90"	3.04"	3.11"	3.30"		
228"	5.6	7.5	9.4	11.4	13.1	15.1							228"	2.81"	2.95"	3.09"	3.17"	3.35"		
240"	5.9	7.9	9.9	11.9	13.8	15.8							240"	2.86"	3.01"	3.15"	3.22"	3.39"		

The above Diameters include the following amount of wrap:

5-1/2"	7-1/2"	8-1/2"	10"	5-1/2"	5-1/2"
--------	--------	--------	-----	--------	--------

### ③ Bracket Selection For larger size shades contact our technical or estimating departments or see ElectroShade section.

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Mecho® SlimLine™	MS-SL	2.25"	2.75"	1-1/4" & 1-1/2"
Mecho®/5 Wide	M5-WI	2.75"	2.75"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Mecho/5 Pocket	M5-PKT	N/A	4.0"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Mecho/5 Extended	M5-EXT	3.438"	5.0"	1-1/4", 1-1/2", 1-3/4", 1-7/8" & 2-1/8"
Suburban™ /2	SU-2EC/SU-2SC	2.375"	2.375"	1-1/4" & 1-3/8"

\* When determining the space required by a specific bracket, factor in both the fascia and roll up diameter of the shadecloth. The roll up diameter for Mecho/5 Pocket and Extended without fascia may extend beyond the bracket dimensions.

### Instructions.

- Determine the proper tube for the width and height of the shadeband.
- Determine the roll up diameter for the tube and opening height, making adjustment for battens as required.
- Determine which bracket model can accommodate the roll up diameter required.

### Note:

- For multibanded MechoShades, a Lift-Assist Mechanism is recommended at 8 Lbs.
- Suburban/2 shades cannot be multibanded.
- Shadebands less than 30" require battens @ +1:3 ratio.

MechoShade Systems, Inc.

42-03 35th Street, Long Island City, NY 11101 • Telephone: 718-729-2020 • Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com) • Internet Web Site: <http://www.mechoshade.com>

© Copyright 2008, MechoShade Systems, Inc., Long Island City, NY. ElectroShade and MechoShade are registered trademarks of, and LAM, Lift-Assist Mechanism, SlimLine and Suburban are trademarks of MechoShade Systems, Inc. Specifications subject to change without notice.

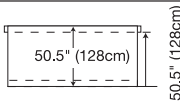
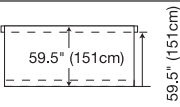
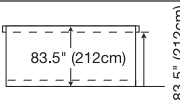
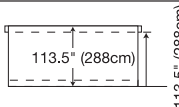
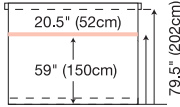
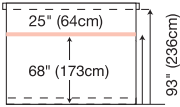
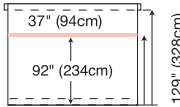
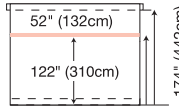
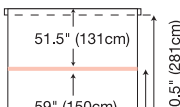
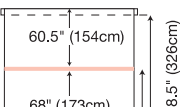
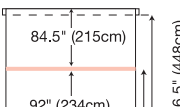
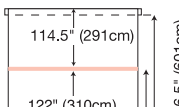
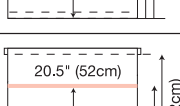
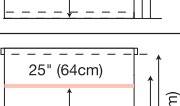
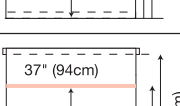
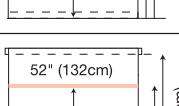
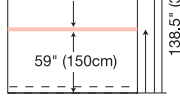
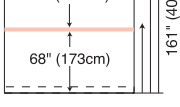
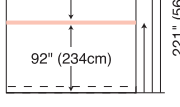
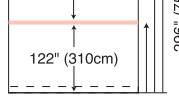
# Batten and Seam Specifications

**Battens vs. Seams:** MechoShade Systems, Inc. is one of the only, if not the only, shade manufacturer to use a batten joint vs. a seam joint. This type of construction costs more, but is highly effective in ensuring that certain types of shade bands hang and track straight. See page 2.23 for an illustration of the Batten vs. Seam joint.

**Woven ScreenCloth:** All woven ScreenCloth, regardless if their core yarns are polyester or fiberglass, will stretch under their hanging weight due to "Woven Fabric Mechanical Extensibility" or "The Hour Glass Effect". In order to assure the proper tracking and rolling of the shadeband, and avoid the "Hour Glass Effect", battens are included by MechoShade as a standard detail when the width-to-height (W:H) ratio exceeds 1:4. Railroaded, multi-width shade bands will receive a 1-1/2" (38mm) batten joint. Battens may be specified for shade bands that otherwise do not need them to align with shade bands that do require battens, at additional cost. Battens will be positioned on the shade band, per the chart below, or at customer specified positions, subject to approval of MechoShade Systems, Inc., and may be at additional cost.

## Standard Batten Placement for Non-Railroaded (Standard) ElectroShades:

- Batten placement for non-railroaded shades shall be the minimum required to meet the 1:4 ratio of width to height.
- Battens shall be equally spaced within the shadeband opening height. For example one batten at the mid point, or two battens at 1/3 points, or three battens at 1/4 points.
- Batten placement for blackout shades with side channels shall not exceed 4'-0" (122cm) o.c. and must be specified.

Standard Batten Placement for Railroaded (RR) ElectroShades*				
Roll Widths	63" (160cm) RR*	72" (183cm) RR*	96" (244cm) RR*	126" (366cm) RR*
SHADE HEIGHTS	Requires 1 width Railroaded*, no seam 			
	Requires 1-1/2 widths Railroaded*, +1 seam 			
	Requires 2 widths Railroaded*, +1 seam 			
	Requires 2-1/2 widths Railroaded*, +2 seam 			
	Requires 3 widths Railroaded*, +2 seams 			

\* All shades are measured from the bottom of the shade up to the center of the Batten joint. Railroad (RR) Shadecloth is turned width to height. All heights shown above are Opening Heights only and are based on a 2-1/2" diameter tube. Opening Heights do not include wrap. Cut panel sizes, including wrap, hem-pocket and additional fabric for sealing battens and seams, are added to the opening height dimension

## Width-to-Height (W:H) Ratio Guidelines and Edge-Clearance Specifications (fabric used normally or railroaded)

- Shadebands up to 1:3 W:H ratio**, require the standard edge-clearance deduction except for 30" (76cm) wide shadebands.
- 1:3 to 1:4 W:H ratios**, increase the hardware edge-clearance 1/16" (1.6mm) each side to 1/8" (3.2mm) additional deduction.
- 1:4 to 1:5 W:H ratios**, increase the hardware edge-clearance 1/8" (3.2mm) each side to 1/4" (6.4mm) additional deduction. Battens or optional guide cables are required.
- 1:5 to 1:6 W:H ratios**, increase the hardware edge-clearance 1/4" (6.4mm) each side to 1/2" (12.8mm) additional deduction. Battens or optional guide cables are required.
- Over 1:6 W:H ratios**, increase the hardware edge-clearance 5/16" (8mm) each side to 5/8" (16mm) additional deduction. Battens & guide cables are required.
- Railroaded multi-width shades** with horizontal joints shall have seam joints.
- Environmental conditions may require** additional use of guide cables and/or battens and increased edge clearance.

MechoShade Systems, Inc.  
42-03 35th Street, Long Island City, NY 11101  
Telephone: 718-729-2020  
Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com)  
Internet Web Site: [www.mechoshade.com](http://www.mechoshade.com)

604/2  
REVISION  
**11.10**  
MS2200 - 01/01/08



# Shade Height, Tube and Bracket Selector Guide for ElectroShades®

## Group A ShadeCloths (Series: 0900, 1000, 1300, 3000 and 5400) .030" thick, average 1.05 lbs. per sq. yd.

Weights shown are the hanging weight of the shadeband, expressed in pounds.

ADD .00925 Lbs. per inch for each Batten required.

①

Tube Size to Accommodate the Shade Weight & Window Span

	84"	96"	108"	120"	126"	132"	144"	156"	168"	180"	192"	204"	216"	228"	240"	HT	1-3/4" Tube	2-1/8" Tube	2-1/2" Tube	3-1/2" Tube	4-1/2" Tube
72"	6.5	7.4	9.7	10.8	11.3	11.8	12.9	14.0	15.1	16.1	17.2	18.3	19.4	20.4	21.5	72"	2.478"	2.790"	3.089"	3.939"	4.879"
84"	7.3	8.3	10.7	11.9	12.5	13.1	14.3	15.5	16.7	17.9	19.1	20.3	21.5	22.7	23.9	84"	2.569"	2.871"	3.163"	3.997"	4.926"
96"	8.1	9.2	11.8	13.1	13.7	14.4	15.7	17.0	18.8	19.6	21.0	22.3	23.6	24.9	26.2	96"	2.656"	2.949"	3.234"	4.054"	4.972"
H 108"	8.9	10.2	12.8	14.3	15.0	15.7	17.1	18.5	20.0	21.4	22.8	24.2	25.7	27.1	28.5	108"	2.741"	3.026"	3.304"	4.110"	5.018"
120"	9.7	11.1	13.9	15.4	16.2	17.0	18.5	20.1	21.6	23.1	24.7	26.2	27.8	29.3	30.9	120"	2.824"	3.101"	3.373"	4.166"	5.063"
126"	10.1	11.6	14.4	16.0	16.8	17.6	19.2	20.8	22.4	24.0	25.6	27.2	28.8	30.4	32.0	126"	2.864"	3.138"	3.407"	4.193"	5.086"
E 132"	10.5	12.0	14.9	16.6	17.4	18.3	19.9	21.6	23.2	24.9	26.5	28.2	29.9	31.5	33.1	132"	2.904"	3.174"	3.440"	4.220"	5.109"
144"	11.4	13.0	16.0	17.8	18.6	19.5	21.3	23.1	24.9	26.6	28.4	30.2	32.0	33.7	35.4	144"	2.982"	3.246"	3.506"	4.274"	5.153"
156"	12.2	13.9	17.0	18.9	19.9	20.8	22.7	24.6	26.5	28.4	30.3	32.2	34.1	36.0	37.9	156"	3.058"	3.315"	3.571"	4.328"	5.198"
I 168"	13.0	14.8	18.1	20.1	21.1	22.1	24.1	26.1	28.1	30.1	32.1	34.2	36.2	38.2	40.2	168"	3.132"	3.384"	3.635"	4.380"	5.241"
180"	13.8	15.8	19.1	21.3	22.3	23.4	25.5	27.6	29.8	31.9	34.0	36.1	38.3	40.4	42.6	180"	3.204"	3.451"	3.697"	4.432"	5.285"
G 192"	14.6	16.7	20.2	22.4	23.5	24.7	26.9	29.2	31.4	33.6	35.9	38.1	40.4	42.6	44.8	192"	3.275"	3.517"	3.759"	4.484"	5.328"
204"	15.4	17.6	21.2	23.6	24.8	26.0	28.3	30.7	33.0	35.4	37.7	40.1	42.5	44.8	47.1	204"	3.344"	3.581"	3.819"	4.535"	5.371"
216"	16.3	18.6	22.3	24.8	26.0	27.2	29.7	32.2	34.7	37.1	39.6	42.1	44.6	47.0	49.3	216"	3.412"	3.645"	3.879"	4.585"	5.414"
H 228"	17.1	19.5	23.3	25.9	27.2	28.5	31.1	33.7	36.3	38.9	41.5	44.1	46.7	49.3	51.9	228"	3.479"	3.707"	3.938"	4.635"	5.456"
240"	17.9	20.4	24.4	27.1	28.5	29.8	32.5	35.2	37.9	40.6	43.3	46.1	48.8	51.5	54.2	240"	3.544"	3.769"	3.995"	4.684"	5.498"
252"	18.7	21.4	25.4	28.3	29.7	31.1	33.9	36.7	39.6	42.3	45.2	48.0	50.9	53.7	56.5	252"	3.608"	3.829"	4.052"	4.733"	5.539"
T 264"	19.5	22.3	26.5	29.4	30.9	32.4	35.3	38.3	41.2	44.1	47.1	50.0	53.0	56.0	59.0	264"	3.670"	3.888"	4.108"	4.780"	5.580"
276"	20.3	23.2	27.5	30.6	32.1	33.7	36.7	39.8	42.8	45.9	48.9	52.0	55.1	58.1	61.2	276"	3.732"	3.946"	4.163"	4.828"	5.621"
288"	21.2	24.2	28.6	31.8	33.3	34.9	38.1	41.3	44.5	47.6	50.8	54.0	57.2	60.4	63.6	288"	3.793"	3.994"	4.218"	4.875"	5.662"
300"	22.0	25.1	29.6	32.9	34.6	36.2	39.5	42.8	46.1	49.4	52.7	56.0	59.3	62.6	65.9	300"	3.853"	4.061"	4.272"	4.922"	5.702"

The above diameters include the following amount of wrap:

8-1/2"	10"	10-1/2"	13-1/2"	21"
--------	-----	---------	---------	-----

## ③ Bracket Selection For larger size shades (up to 50' x 50' ++ ) contact MechoShade Systems, Inc. technical or estimating departments.

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Electro®/1	ES-I	N/A	4.25"	2-1/2" & 3-1/2"
Electro/1 Extended	ES-EXT	N/A	6.375"	2-1/2", 3-1/2" & 4-1/2"
Electro/2	ES-II	4.25"	N/A	2-1/2" & 3-1/2"
Electro/2 Extended	ES-EX5	5.125"	N/A	2-1/2", 3-1/2" & 4-1/2"
	ES-EX6	6.375"	N/A	2-1/2", 3-1/2" & 4-1/2"

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Electro/3	ES-III	2.75"	2.75"	1-3/4" & 2-1/8"
Electro/3 Pocket	ES-3PK	N/A	4.0"	1-3/4" & 2-1/8"
Electro/3 Extended	ES-3EX	3.4375"	5.0"	1-3/4" & 2-1/8"

\* When determining the space required by a specific bracket, factor in both the fascia and roll up diameter of the shade cloth.  
The roll up diameter for Electro/1 Extended, Electro/2 Extended, Electro/3 Pocket and Electro/3 Extended (without fascia) may extend beyond the bracket dimensions.

MechoShade Systems, Inc.

42-03 35th Street, Long Island City, NY 11101 • Telephone: 718-729-2020 • Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com) • Internet Web Site: <http://www.mechoshade.com>

© Copyright 2008, MechoShade Systems, Inc., Long Island City, NY. ElectroShade and MechoShade are registered trademarks of MechoShade Systems, Inc. Specifications subject to change without notice.

11.11  
MS2008-010108

**MechoShade®**

# Shade Height, Tube and Bracket Selector Guide for ElectroShades®

## Group B ShadeCloths (Series: 1600 and 2100) .030" thick, average .95 lbs. per sq. yd.

Weights shown are the hanging weight of the shadeband, expressed in pounds.

ADD .00925 Lbs. per inch for each Batten required.

①

Tube Size to Accommodate the Shade Weight & Window Span

	84"	96"	108"	120"	126"	132"	144"	156"	168"	180"	192"	204"	216"	228"	240"	HT	1-3/4" Tube	2-1/8" Tube	2-1/2" Tube	3-1/2" Tube	4-1/2" Tube
72"	6.0	6.8	9.1	10.1	10.6	11.1	12.1	13.1	14.1	15.1	16.2	17.2	18.2	19.2	20.2	72"	2.478"	2.790"	3.089"	3.939"	4.879"
84"	6.7	7.7	10.0	11.2	11.7	12.3	13.4	14.5	15.6	16.7	17.8	19.0	20.1	21.2	22.3	84"	2.569"	2.871"	3.163"	3.997"	4.926"
96"	7.5	8.5	11.0	12.2	12.8	13.4	14.6	15.9	17.1	18.3	19.5	20.8	22.0	23.2	24.4	96"	2.656"	2.949"	3.234"	4.054"	4.972"
H 108"	8.2	9.4	11.9	13.3	13.9	14.6	15.9	17.2	18.6	19.9	21.2	22.5	23.9	25.2	26.5	108"	2.741"	3.026"	3.304"	4.110"	5.018"
120"	8.9	10.2	12.9	14.3	15.0	15.8	17.2	18.6	20.0	21.5	22.9	24.3	25.8	27.2	28.6	120"	2.824"	3.101"	3.373"	4.166"	5.063"
126"	9.3	10.6	13.4	14.8	15.6	16.3	17.8	19.3	20.8	22.3	23.8	25.2	26.7	28.2	29.7	126"	2.864"	3.138"	3.407"	4.193"	5.086"
E 132"	9.7	11.1	13.8	15.4	16.1	16.9	18.4	20.0	21.5	23.1	24.6	26.1	27.7	29.2	30.7	132"	2.904"	3.174"	3.440"	4.220"	5.109"
144"	10.4	11.9	14.8	16.4	17.3	18.1	19.7	21.4	23.0	24.6	26.3	27.9	29.6	31.2		144"	2.982"	3.246"	3.506"	4.274"	5.153"
I 156"	11.2	12.8	15.7	17.5	18.4	19.2	21.0	22.7	24.5	26.2	28.0	29.7	31.5	33.2		156"	3.058"	3.315"	3.571"	4.328"	5.198"
168"	11.9	13.6	16.7	18.5	19.5	20.4	22.2	24.1	26.0	27.8	29.7	31.5	33.4	35.2		168"	3.132"	3.384"	3.635"	4.380"	5.241"
180"	12.6	14.4	17.6	19.6	20.6	21.6	23.5	25.5	27.4	29.4	31.4	33.3	35.3	37.2		180"	3.204"	3.451"	3.697"	4.432"	5.285"
G 192"	13.4	15.3	18.6	20.7	21.7	22.7	24.8	26.8	28.9	31.0	33.0	35.1	37.2	39.2		192"	3.275"	3.517"	3.759"	4.484"	5.328"
204"	14.1	16.1	19.5	21.7	22.8	23.9	26.0	28.2	30.4	32.6	34.7	36.9	39.1	41.2		204"	3.344"	3.581"	3.819"	4.535"	5.371"
216"	14.9	17.0	20.5	22.8	23.9	25.0	27.3	29.6	31.9	34.1	36.4	38.7	41.0	43.2		216"	3.412"	3.645"	3.879"	4.585"	5.414"
H 228"	15.6	17.8	21.4	23.8	25.0	26.2	28.6	31.0	33.3	35.7	38.1	40.5	42.9	45.3		228"	3.479"	3.707"	3.938"	4.635"	5.456"
240"	16.3	18.7	22.4	24.9	26.1	27.4	29.8	32.3	34.8	37.3	39.8	42.3	44.8	47.3		240"	3.544"	3.769"	3.995"	4.684"	5.498"
252"	17.1	19.5	23.3	26.0	27.2	28.5	31.1	33.7	36.3	38.9	41.5	44.1	46.7	49.3		252"	3.608"	3.829"	4.052"	4.733"	5.539"
T 264"	17.8	20.4	24.3	27.0	28.3	29.7	32.4	35.1	37.8	40.5	43.2	45.9	48.6		264"	3.670"	3.888"	4.108"	4.780"	5.580"	
276"	18.6	21.2	25.2	28.1	29.4	30.8	33.6	36.5	39.3	42.1	44.9	47.7	50.5		276"	3.732"	3.946"	4.163"	4.828"	5.621"	
288"	19.3	22.0	26.1	29.1	30.6	32.0	34.9	37.8	40.7	43.6	46.6	49.5	52.4		288"	3.793"	4.004"	4.218"	4.875"	5.662"	
300"	20.2	22.9	27.1	30.2	31.7	33.2	36.2	39.2	42.2	45.2	48.2	51.3	54.3		300"	3.853"	4.061"	4.272"	4.922"	5.702"	

1-3/4"

2-1/8"

2-1/2"

3-1/2"

4-1/2"

The above Diameters include the following amount of wrap:

8-1/2"

10"

10-1/2"

13-1/2"

21"

The above diameters include the following amount of wrap:

8-1/2"	10"	10-1/2"	13-1/2"	21"
--------	-----	---------	---------	-----

### ③ Bracket Selection For larger size shades (up to 50' x 50' +++) contact MechoShade Systems, Inc. technical or estimating departments.

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Electro®/1	ES-I	N/A	4.25"	2-1/2" & 3-1/2"
Electro/1 Extended	ES-EXT	N/A	6.375"	2-1/2", 3-1/2" & 4-1/2"
Electro/2	ES-II	4.25"	N/A	2-1/2" & 3-1/2"
Electro/2 Extended	ES-EX5	5.125"	N/A	2-1/2", 3-1/2" & 4-1/2"
	ES-EX6	6.375"	N/A	2-1/2", 3-1/2" & 4-1/2"

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Electro/3	ES-III	2.75"	2.75"	1-3/4" & 2-1/8"
Electro/3 Pocket	ES-3PK	N/A	4.0"	1-3/4" & 2-1/8"
Electro/3 Extended	ES-3EX	3.4375"	5.0"	1-3/4" & 2-1/8"

\* When determining the space required by a specific bracket, factor in both the fascia and roll up diameter of the shade cloth. The roll up diameter for Electro/1 Extended, Electro/2 Extended, Electro/3 Pocket and Electro/3 Extended (without fascia) may extend beyond the bracket dimensions.

MechoShade Systems, Inc.

42-03 35th Street, Long Island City, NY 11101 • Telephone: 718-729-2020 • Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com) • Internet Web Site: <http://www.mechoshade.com>

© Copyright 2008, MechoShade Systems, Inc., Long Island City, NY. ElectroShade and MechoShade are registered trademarks of MechoShade Systems, Inc. Specifications subject to change without notice.

11.12  
MS2008-016108





**MechoShade®**



# Shade Height, Tube and Bracket Selector Guide for ElectroShades®

## Group D ShadeCloths (Series: 5100, 5200, 5300, 6000 and 6300) .024" thick, average .9 lbs. per sq. yd.

Weights shown are the hanging weight of the shadeband, expressed in pounds.

ADD .00925 Lbs. per inch for each Batten required.

### ② Roll Diameter x Opening Height

ADD .125" to the below listed roll up diameters for each batten required. Battens may be required when a shadeband's Width to Height Ratio is equal or greater than a 1:4 ratio or railroaded (landscaped) shadebands over 84" wide.

### ① Tube Size to Accommodate the Shade Weight & Window Span

	84"	96"	108"	120"	126"	132"	144"	156"	168"	180"	192"	204"	216"	228"	240"	HT	1-3/4" Tube	2-1/8" Tube	2-1/2" Tube	3-1/2" Tube	4-1/2" Tube
72"	5.8	6.6	8.8	9.8	10.3	10.7	11.7	12.7	13.7	14.6	15.6	16.6	17.6	18.5	19.5	72"	2.350"	2.675"	2.985"	3.855"	4.806"
84"	6.5	7.4	9.7	10.8	11.3	11.8	12.9	14.0	15.1	16.1	17.2	18.3	19.4	20.4	21.5	84"	2.427"	2.743"	3.046"	3.903"	4.844"
96"	7.2	8.2	10.6	11.8	12.4	12.9	14.1	15.3	16.5	17.6	18.8	20.0	21.2	22.3	23.5	96"	2.501"	2.804"	3.108"	3.949"	4.881"
H 108"	7.9	9.0	11.5	12.8	13.4	14.0	15.3	16.6	17.9	19.1	20.4	21.7	23.0	24.2	25.5	108"	2.574"	2.873"	3.164"	3.996"	4.919"
120"	8.6	10.0	12.4	13.8	14.5	15.1	16.5	17.9	19.3	20.6	22.0	23.4	24.8	26.1	27.5	120"	2.644"	2.936"	3.222"	4.041"	4.956"
126"	8.9	10.2	12.8	14.3	15.0	15.7	17.1	18.5	20.0	21.4	22.8	24.2	25.7	27.1	28.5	126"	2.679"	2.968"	3.250"	4.064"	4.974"
E 132"	9.3	10.6	13.3	14.8	15.5	16.2	17.7	19.2	20.7	22.1	23.6	25.1	26.6	28.1	29.5	132"	2.713"	2.998"	3.278"	4.086"	4.993"
144"	10.0	11.4	14.2	15.8	16.6	17.3	18.9	20.5	22.1	23.6	25.2	26.8	28.4	29.9	31.5	144"	2.779"	3.059"	3.334"	4.131"	5.029"
I 156"	10.7	12.2	15.1	16.8	17.6	18.4	20.1	21.8	23.5	25.1	26.8	28.5	30.2	31.8		156"	2.845"	3.118"	3.388"	4.175"	5.066"
168"	11.4	13.0	16.0	17.8	18.7	19.5	21.3	23.1	24.9	26.6	28.4	30.2	32.0	33.7		168"	2.908"	3.177"	3.442"	4.219"	5.102"
180"	12.1	13.8	16.9	18.8	19.7	20.6	22.5	24.4	26.3	28.1	30.0	31.9	33.8	35.6		180"	2.971"	3.234"	3.495"	4.262"	5.138"
G 192"	12.8	14.6	17.8	19.8	20.1	21.7	23.7	25.7	27.7	29.6	31.6	33.6	35.6	37.5		192"	3.032"	3.290"	3.547"	4.305"	5.173"
204"	13.5	15.4	18.7	20.8	21.8	22.8	24.9	27.0	29.1	31.1	33.2	35.3	37.4	39.4		204"	3.092"	3.345"	3.598"	4.347"	5.209"
216"	14.2	16.2	19.6	21.8	22.9	23.9	26.1	28.3	30.5	32.6	34.8	37.0	39.2	41.3		216"	3.151"	3.400"	3.649"	4.389"	5.244"
H 228"	14.9	17.0	20.5	22.8	23.9	25.0	27.3	29.6	31.9	34.1	36.4	38.7	41.0	43.2		228"	3.208"	3.453"	3.699"	4.431"	5.279"
240"	15.6	17.8	21.4	23.8	25.0	26.1	28.5	30.1	33.3	35.6	38.0	40.4	42.8	45.1		240"	3.265"	3.506"	3.748"	4.472"	5.313"
252"	16.3	18.6	22.3	24.8	26.0	27.2	29.7	32.2	34.7	37.1	39.6	42.1	44.6	47.0		252"	3.321"	3.558"	3.797"	4.513"	5.348"
T 264"	17.0	19.4	23.2	25.8	27.1	28.3	30.9	33.5	36.1	38.6	41.2	43.8	46.4	48.9		264"	3.375"	3.609"	3.845"	4.553"	5.382"
276"	17.7	20.2	24.1	26.8	28.1	29.4	32.1	34.8	37.5	40.1	42.8	45.5	48.2		276"	3.429"	3.660"	3.892"	4.594"	5.416"	
288"	18.4	21.0	25.0	27.8	29.2	30.5	33.3	36.1	38.9	41.6	44.4	47.2	50.0		288"	3.482"	3.709"	3.939"	4.633"	5.449"	
300"	19.1	21.8	25.9	28.8	30.2	31.6	34.5	37.4	40.3	43.1	46.0	48.9	51.8		300"	3.535"	3.758"	3.985"	4.673"	5.483"	

1-3/4"

2-1/8"

2-1/2"

3-1/2"

4-1/2"

The above Diameters include the following amount of wrap

8-1/2"

10"

10-1/2"

13-1/2"

21"

The above diameters include the following amount of wrap:  
8-1/2" 10" 10-1/2" 13-1/2" 21"

### ③ Bracket Selection For larger size shades (up to 50' x 50' ++ ) contact MechoShade Systems, Inc. technical or estimating departments.

Bracket System	Model Number	Roll Up	Tube Sizes Available	Bracket System	Model Number	Roll Up	Tube Sizes Available
Electro®/1	ES-I	N/A	4.25"	Electro/3	ES-III	2.75"	1-3/4" & 2-1/8"
Electro/1 Extended	ES-EXT	N/A	6.375"	Electro/3 Pocket	ES-3PK	N/A	1-3/4" & 2-1/8"
Electro/2	ES-II	4.25"	N/A	Electro/3 Extended	ES-3EX	3.4375"	1-3/4" & 2-1/8"
Electro/2 Extended	ES-EX5	5.125"	N/A	* When determining the space required by a specific bracket, factor in both the fascia and roll up diameter of the shadecloth. The roll up diameter for Electro/1 Extended, Electro/2 Extended, Electro/3 Pocket and Electro/3 Extended (without fascia) may extend beyond the bracket dimensions.			
	ES-EX6	6.375"	N/A				

MechoShade Systems, Inc.

42-03 35th Street, Long Island City, NY 11101 • Telephone: 718-729-2020 • Fax: 718-729-2941 / 800-899-8081

E-mail: [info@mechoshade.com](mailto:info@mechoshade.com) • Internet Web Site: <http://www.mechoshade.com>

© Copyright 2008, MechoShade Systems, Inc., Long Island City, NY. ElectroShade and MechoShade are registered trademarks of MechoShade Systems, Inc. Specifications subject to change without notice.

11.14  
MS2200 - 01/01/08



# Shade Height, Tube and Bracket Selector Guide for ElectroShades®

Group E Blackout ShadeCloths (Series: 0700) .015" thick, .875 lbs. per sq. yd.

Weights shown are the hanging weight of the shadeband, expressed in pounds.

ADD .00925 Lbs. per inch for each Batten required and DEDUCT .0004 Lbs. per inch if an Exposed Hembar is required.

## ② Roll Diameter x Opening Height

ADD .125" to the below listed roll up diameters for each batten required. Battens may be required when a shadeband's Width to Height Ratio is equal or greater than a 1:4 ratio or railroaded (landscaped) shadebands over 84" wide.

① Tube Size to Accommodate the Shade Weight & Window Span

	84"	96"	108"	120"	126"	132"	144"	156"	168"	180"	192"	204"	216"	228"	240"	HT	1-3/4" Tube	2-1/8" Tube	2-1/2" Tube	3-1/2" Tube	4-1/2" Tube
H 72"	5.6	6.4	8.6	9.6	10.1	10.6	11.5	12.5	13.4	14.4	15.4	16.3	17.3	18.2	19.2	72"	2.169"	2.514"	2.841"	3.741"	4.706"
H 84"	6.3	7.2	9.5	10.6	11.1	11.6	12.7	13.7	14.8	15.9	16.9	18.0	19.0	20.1	21.3	84"	2.224"	2.562"	2.884"	3.773"	4.732"
H 96"	7.0	8.0	10.4	11.5	12.1	12.7	13.8	15.0	16.2	17.3	18.5	19.6	20.8	21.9	23.1	96"	2.278"	2.609"	2.926"	3.805"	4.757"
E 108"	7.7	8.8	11.3	12.5	13.1	13.8	15.0	16.3	17.5	18.8	20.0	21.3	22.5	23.8	25.0	108"	2.331"	2.656"	2.967"	3.837"	4.783"
E 120"	8.4	9.6	12.1	13.5	14.2	14.8	16.2	17.5	18.9	20.2	21.6	22.9	24.3	25.6	27.1	120"	2.383"	2.701"	3.008"	3.869"	4.809"
E 126"	8.7	9.9	12.6	14.0	14.7	15.4	16.8	18.2	19.6	21.0	22.4	23.8	25.1	26.5	27.9	126"	2.409"	2.724"	3.028	3.885"	4.821"
E 132"	9.0	10.3	13.0	14.5	15.2	15.9	17.3	18.8	20.2	21.7	23.1	24.6	26.0	27.5	28.9	132"	2.434"	2.746"	3.049"	3.901"	4.834"
I 144"	9.7	11.1	13.9	15.4	16.2	17.0	18.5	20.0	21.6	23.1	24.7	26.2	27.8	29.3	30.9	144"	2.484"	2.790"	3.088"	3.932"	4.859"
E 156"	10.4	11.9	14.8	16.4	17.2	18.0	19.7	21.3	23.0	24.6	26.2	27.9	29.5	31.2	32.8	156"	2.533"	2.834"	3.128"	3.963"	4.884"
G 168"	11.1	12.7	15.6	17.4	18.2	19.1	20.8	22.6	24.3	26.0	27.8	29.5	31.3	33.0	34.9	168"	2.580"	2.877"	3.167"	3.993"	4.909"
G 180"	11.8	13.4	16.5	18.3	19.3	20.2	22.0	23.9	25.7	27.5	29.4	31.2	33.0	34.9	36.7	180"	2.627"	2.919"	3.205"	4.024"	4.934"
H 192"	12.4	14.2	17.4	19.3	20.3	21.3	23.2	25.1	27.0	29.0	30.9	32.8	34.8	36.7	38.6	192"	2.673"	2.960"	3.243"	4.054"	4.959"
H 204"	13.1	15.0	18.3	20.3	21.3	22.3	24.3	26.4	28.4	30.4	32.5	34.5	36.5	38.6	40.4	204"	2.719"	3.001"	3.280"	4.084"	4.983"
H 216"	13.8	15.8	19.1	21.3	22.3	23.4	25.5	27.6	29.8	31.8	34.0	36.1	38.3	40.4	42.2	216"	2.763"	3.042"	3.317"	4.114"	5.008"
T 228"	14.5	16.6	20.0	22.2	23.3	24.5	26.7	28.9	31.1	33.4	35.6	37.8	40.0	42.2	44.1	228"	2.807"	3.082"	3.354"	4.144"	5.032"
T 240"	15.2	17.3	20.9	23.2	24.4	25.5	27.8	30.2	32.5	34.8	37.1	39.4	41.8	44.1	45.9	240"	2.850"	3.121"	3.390"	4.173"	5.056"
E 252"	15.9	18.1	21.8	24.2	25.4	26.6	29.0	31.4	33.9	36.3	38.7	41.1	43.5	45.9	47.8	252"	2.893"	3.160"	3.426"	4.202"	5.081"
E 264"	16.5	18.9	22.6	25.2	26.4	27.7	30.2	32.7	35.2	37.7	40.2	42.8	45.3	47.8	49.6	264"	2.935"	3.198"	3.462"	4.231"	5.105"
E 276"	17.2	19.7	23.5	26.1	27.4	28.7	31.3	34.0	36.6	39.2	41.8	44.4	47.0	49.6	50.5	276"	2.976"	3.236"	3.497"	4.260"	5.128"
E 288"	17.9	20.4	24.4	27.1	28.5	29.8	32.5	35.2	37.9	40.6	43.4	46.1	48.8	50.5	51.5	288"	3.017"	3.274"	3.532"	4.289"	5.152"
E 300"	18.6	21.2	25.3	28.1	29.5	30.9	33.7	36.5	39.3	42.1	44.9	47.7	50.5	51.5	52.5	300"	3.057"	3.311"	3.566"	4.317"	5.176"

The above diameters include the following amount of wrap:  
8-1/2" 10" 10-1/2" 13-1/2" 21"

## ③ Bracket Selection For larger size shades (up to 50' x 50' ++ ) contact MechoShade Systems, Inc. technical or estimating departments.

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Electro®/1	ES-I	N/A	4.25"	2-1/2" & 3-1/2"
Electro/1 Extended	ES-EXT	N/A	6.375"	2-1/2", 3-1/2" & 4-1/2"
Electro/2	ES-II	4.25"	N/A	2-1/2" & 3-1/2"
Electro/2 Extended	ES-EX5	5.125"	N/A	2-1/2", 3-1/2" & 4-1/2"
	ES-EX6	6.375"	N/A	2-1/2", 3-1/2" & 4-1/2"

Bracket System	Model Number	Roll Up With Fascia	Roll Up Without Fascia	Tube Sizes Available
Electro/3	ES-III	2.75"	2.75"	1-3/4" & 2-1/8"
Electro/3 Pocket	ES-3PK	N/A	4.0"	1-3/4" & 2-1/8"
Electro/3 Extended	ES-3EX	3.4375"	5.0"	1-3/4" & 2-1/8"

\* When determining the space required by a specific bracket, factor in both the fascia and roll up diameter of the shade cloth. The roll up diameter for Electro/1 Extended, Electro/2 Extended, Electro/3 Pocket and Electro/3 Extended (without fascia) may extend beyond the bracket dimensions.

MechoShade Systems, Inc.

42-03 35th Street, Long Island City, NY 11101 • Telephone: 718-729-2020 • Fax: 718-729-2941 / 800-899-8081

E-mail: info@mechoshade.com • Internet Web Site: <http://www.mechoshade.com>

© Copyright 2008, MechoShade Systems, Inc., Long Island City, NY. ElectroShade and MechoShade are registered trademarks of MechoShade Systems, Inc. Specifications subject to change without notice.

11.15  
MS2300 - 01/01/08



# Shade Height, Tube and Bracket Selector Guide for ElectroShades®

## Group F Equinox ShadeCloths (Series: 0100) .0216" thick, .793 lbs. per sq. yd.

Weights shown are the hanging weight of the shadeband, expressed in pounds.

ADD .00925 Lbs. per inch for each Batten required and DEDUCT .0004 Lbs. per inch if an Exposed Hembar is required.

### ② Roll Diameter x Opening Height

ADD .125" to the below listed roll up diameters for each batten required. Battens may be required when a shadeband's Width to Height Ratio is equal or greater than a 1:4 ratio or railroaded (landscaped) shadebands over 84" wide.

① Tube Size to Accommodate the Shade Weight & Window Span

	84"	96"	108"	120"	126"	132"	144"	156"	168"	180"	192"	HT	1-3/4" Tube	2-1/8" Tube	2-1/2" Tube	3-1/2" Tube	4-1/2" Tube
H 72"	5.2	6.0	8.2	9.1	9.5	10.0	10.9	11.8	12.7	13.7	14.5	72"	2.30"	2.63"	2.94"	3.82"	4.78"
H 84"	5.8	6.7	9.0	10.0	10.5	11.0	12.0	12.9	14.0	15.0	16.0	84"	2.37"	2.69"	3.00"	3.86"	4.81"
H 96"	6.4	7.4	9.8	10.9	11.4	12.0	13.1	14.1	15.3	16.4	17.4	96"	2.44"	2.75"	3.05"	3.91"	4.84"
H 108"	7.1	8.1	10.6	11.7	12.4	13.0	14.2	15.2	16.5	17.7	18.9	108"	2.50"	2.81"	3.11"	3.95"	4.88"
E 120"	7.7	8.8	11.4	12.6	13.3	14.0	15.2	16.4	17.8	19.1	20.3	120"	2.57"	2.87"	3.16"	3.99"	4.91"
H 126"	8.0	9.2	11.7	13.0	13.7	14.3	15.6	16.9	18.2	19.5	20.8	126"	2.60"	2.90"	3.19	4.01"	4.93"
H 132"	8.3	9.5	12.0	13.2	13.9	14.7	15.8	17.5	18.7	20.1	21.4	132"	2.63"	2.92"	3.21"	4.03"	4.95"
I 144"	8.9	10.2	12.8	14.1	14.9	15.7	16.9	18.6	20.0	21.4	22.8	144"	2.69"	2.98"	3.26"	4.07"	4.98"
H 156"	9.5	10.9	13.6	15.0	15.8	16.7	18.0	19.8	21.2	22.8		156"	2.75"	3.04"	3.31"	4.11"	5.01"
H 168"	10.1	11.5	14.4	15.9	16.7	17.7	19.1	20.9	22.5	24.1		168"	2.81"	3.09"	3.36"	4.15"	5.04"
G 180"	10.7	12.2	15.2	16.8	17.7	18.7	20.1	22.1	23.7	25.5		180"	2.87"	3.14"	3.41"	4.19"	5.08"
H 192"	11.3	12.9	16.0	17.7	18.6	19.7	21.2	23.2	25.0	26.8		192"	2.93"	3.19"	3.46"	4.23"	5.11"
H 204"	11.9	13.6	16.8	18.6	19.5	20.7	22.3	24.4	26.3	28.2		204"	2.98"	3.25"	3.51"	4.27"	5.14"
H 216"	12.5	14.3	17.6	19.5	20.5	21.7	23.4	25.5	27.5	29.5		216"	3.04"	3.30"	3.55"	4.31"	5.17"
H 228"	13.1	15.0	18.4	20.4	21.4	22.7	24.5	26.7	28.8	30.9		228"	3.09"	3.35"	3.60"	4.35"	5.21"
T 240"	13.8	15.7	19.2	21.3	22.4	23.7	25.5	27.8	30.1	32.2		240"	3.15"	3.39"	3.64"	4.38"	5.24"
2-1/8" 252"	14.4	16.4	20.0	22.1	23.3	24.7	26.6	29.0	31.3	33.6		252"	3.20"	3.44"	3.69"	4.42"	5.27"
264"	15.0	17.1	20.8	23.0	24.2	25.7	27.7	30.1	32.6	34.9		264"	3.25"	3.49"	3.73"	4.46"	5.30"
H 276"	15.6	17.8	21.6	23.9	25.2	26.7	28.8	31.3	33.8	36.3		276"	3.30"	3.54"	3.78"	4.50"	5.33"
H 288"	16.2	18.5	22.4	24.8	26.1	27.7	29.8	32.4	35.1	37.6		288"	3.35"	3.58"	3.82"	4.53"	5.36"
300"	16.8	19.2	23.2	25.7	27.1	28.7	30.9	33.6	36.4	39.0		300"	3.40"	3.63"	3.86"	4.57"	5.39"
The above diameters include the following amount of wrap:													8-1/2"	10"	10-1/2"	13-1/2"	21"

### ③ Bracket Selection For larger size shades (up to 50' x 50' ++), contact MechoShade Systems, Inc. technical or estimating departments.

Bracket System	Model Number	Roll Up	Tube Sizes Available
Electro®/1	ES-I	N/A	2-1/2" & 3-1/2"
Electro/1 Extended	ES-EXT	N/A	2-1/2", 3-1/2" & 4-1/2"
Electro/2	ES-II	N/A	2-1/2" & 3-1/2"
Electro/2 Extended	ES-EX5	N/A	2-1/2", 3-1/2" & 4-1/2"
	ES-EX6	N/A	2-1/2", 3-1/2" & 4-1/2"

Bracket System	Model Number	Roll Up	Tube Sizes Available
Electro/3	ES-III	2.75"	1-3/4" & 2-1/8"
Electro/3 Pocket	ES-3PK	N/A	1-3/4" & 2-1/8"
Electro/3 Extended	ES-3EX	3.4375"	1-3/4" & 2-1/8"

\* When determining the space required by a specific bracket, factor in both the fascia and roll up diameter of the shadecloth. The roll up diameter for Electro/1 Extended, Electro/2 Extended, Electro/3 Pocket and Electro/3 Extended (without fascia) may extend beyond the bracket dimensions.

MechoShade Systems, Inc.

42-03 35th Street, Long Island City, NY 11101 • Telephone: 718-729-2020 • Fax: 718-729-2941 / 800-899-8081

E-mail: info@mechoshade.com • Internet Web Site: <http://www.mechoshade.com>

© Copyright 2008, MechoShade Systems, Inc., Long Island City, NY. ElectroShade and MechoShade are registered trademarks of MechoShade Systems, Inc. Specifications subject to change without notice.

## **Fenestration**

Originally, the arrangement of windows in a building. Now, windows, glazing, and shading devices.

## **Solar-Optical Properties**

The transmittance, reflectance, and absorptance of glazing materials for solar radiation.

## **Visible Light Transmittance**

That portion of the solar spectrum which is visible to the human eye. Too much Visible Light Transmittance creates brightness and glare problems within the room. Visible light transmittance must be a primary consideration when selecting a sunscreen shadecloth.

## **Solar Heat Gain**

The amount of heat admitted through fenestration due to transmitted radiation and the inward flow of absorbed radiation.

## **(SC) Shading Coefficient:**

The percentage of solar heat gain that passes through a combination of glass and screen. A lower shading coefficient means lower heat gain (better thermal performance). When used on the interior, light colors have lower shading coefficients than dark colors. Thus, light colors outperform dark colors. A lower shading coefficient equals lower heat gain. [ i.e. SC .60 = 60% relative solar heat gain; SC .45 = 45% relative solar heat gain.

When these same fabrics are used on the exterior, this performance is reversed. For exterior shading, dark colors have the lower coefficient and thus outperform light colors. An explanation for this is that the lighter colors do not reflect heat away from the window, but reflect a substantial percentage back into the building as well.

## **(Rs) Solar Reflectance:**

The percentage of the amount of solar energy which is reflected or bounces off the screening material. Light colors are more reflective with lower heat gain and shading coefficients, but with a higher percentage of daylight and solar transmittance. Light colors, however, are brighter when sunlit which causes high surface brightness (bare light bulb syndrome) and may transmit excessive, debilitating light onto computer screens and work stations.

## **(As) Solar Absorptance:**

The percentage of the amount of solar energy which is absorbed by the screen or shade cloth. Dark colors absorb light and heat, and are less energy efficient than lighter colors. They transmit less light and have a lower surface brightness which lowers reflectivity and provides excellent glare-free environments for CRTs and work stations.

## **(Ts) Solar Transmittance:**

The percentage of ultraviolet, visible and near infrared energy that is transmitted through the glass.

## **Openness Factor**

The openness factor (Of) is the density of a sun screen shade cloth's weave. To assure personal comfort near the window wall, it is necessary to control the direct solar radiant energy (sunshine) that penetrates the glass / shade combination. This is accomplished with proper selection of fabric density in conjunction with visible light transmittance of the glass.

## **Wave Length**

The distance between successive peaks or valleys of radiation waves; measurement is in millionth of a meter.

## **U-Value**

A measurement of the conductive inward or outward heat flow expressed as a percentage.

## **Emittance**

The ability to give off radiant energy when compared to a perfect absorber. Different materials emit stored energy at different temperatures. Shade cloths emit much lower temperatures than polished aluminum or satin aluminum finishes.

## **Long Wave Emittance**

Long wave emittance is sensible heat which heats the air.

## **White and Dark Surfaces**

Most shade cloth surfaces have a high long-wave emittance. Light colored fabric surfaces will reflect more short-wave solar radiation and therefore absorb less. Dark colored fabric surfaces will absorb more short-wave radiation and reflect less.

## **E.S.I**

Equivalent Sphere Illumination provided by luminous hemisphere.

## **Solar Altitude**

The angular distance of the sun above the horizon.

## **Solar Azimuth**

The angular distance from the south of the horizontal projection of the earth-sun line.

## **Window Management**

The control of the admission of heat and light through fenestration by means of adjustable shading devices.



# SECTION 12494 – ROLLER SHADES

---

## Table of Contents

Roller Shades .....	11.02.a
Part 1: General .....	11.02.a
1.1 Section Includes .....	11.02.a
1.2 Related Sections .....	11.02.a
1.3 References .....	11.02.a
1.4 Submittals .....	11.02.a
1.5 Quality Assurance .....	11.02.a
1.6 Delivery, Storage and Handling .....	11.03.a
1.7 Project Conditions .....	11.03.a
1.8 Warranty .....	11.03.a
Part 2: Products .....	11.03.a
2.1 Manufacturers .....	11.03.a
2.2 Applications/Scope .....	11.04.a
2.3 Shade Cloth .....	11.04.a
2.4 Shade Band .....	11.05.a
2.5 Shade Fabrication .....	11.05.a
2.6 Components .....	11.06.a
2.7 Shade Motor Drive System .....	11.07.a
2.8 Motor Control Systems .....	11.07.a
2.9 Accessories .....	11.09.a
Part 3: Execution .....	11.10.a
3.1 Examination .....	11.10.a
3.2 Preparation .....	11.10.a
3.3 Installation .....	11.10.a
3.4 Protection .....	11.10.a





# SECTION 12494 – ROLLER SHADES

---

## SECTION 12494

### ROLLER SHADES

#### PART 1: GENERAL

##### 1.1 SECTION INCLUDES

- A. Manually operated sunscreen roller shades
- B. Manually operated room-darkening shades.
- C. Manually operated double-roller sunscreen and room-darkening shades.
- D. Electrically operated sunscreen roller shades.
- E. Electrically operated room-darkening shades.
- F. Electrically operated double-roller sunscreen and room-darkening shades.
- G. Local group and master control system for shade operation.
- H. Local group and master control system for shade operation with addressable motors.

##### 1.2 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry: Wood blocking and grounds for mounting roller shades and accessories.
- B. Section 09260 - Gypsum Board Assemblies: Coordination with gypsum board assemblies for installation of shade pockets, closures and related accessories.
- C. Section 09510 - Acoustical Ceilings: Coordination with acoustical ceiling systems for installation of shade pockets, closures and related accessories.
- D. Division 16 - Electrical: Electric service for motor controls.

##### 1.3 REFERENCES

- A. ASTM G 21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- B. NFPA 70 - National Electrical Code.
- C. NFPA 701-99 - Fire Tests for Flame-Resistant Textiles and Films.

##### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.0
- B. Submit Environmental Certification and Third Party Evaluation per Section 1.5 Qualifications.
- C. Product Data: Manufacturer's data sheets on each product to be used, including:

- 1. Preparation instructions and recommendations.
- 2. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
- 3. Storage and handling requirements and recommendations.
- 4. Mounting details and installation methods.
- 5. Typical wiring diagrams including integration of motor controllers with building management system, audiovisual and lighting control systems as applicable.
- D. Shop Drawings: Plans, elevations, sections, product details, installation details, operational clearances, wiring diagrams and relationship to adjacent work.
  - 1. Prepare shop drawings on Autocad or Microstation format using base sheets provided electronically by the Architect.
- E. Window Treatment Schedule: For all roller shades. Use same room designations as indicated on the Drawings and include opening sizes and key to typical mounting details.
- F. Selection Samples: For each finish product specified, one set of shade cloth options and aluminum finish color samples representing manufacturer's full range of available colors and patterns.
- G. Verification Samples: For each finish product specified, one complete set of shade components, unassembled, demonstrating compliance with specified requirements. Shadecloth sample and aluminum finish sample as selected. Mark face of material to indicate interior faces.
- H. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.

##### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Obtain roller shades through one source from a single manufacturer with a minimum of twenty years experience in manufacturing products comparable to those specified in this section.
- B. Installer Qualifications: Installer trained and certified by the manufacturer with a minimum of ten years experience in installing products comparable to those specified in this section.
- C. Fire-Test-Response Characteristics: Passes NFPA 701-99

# SECTION 12494 – ROLLER SHADES

small and large-scale vertical burn. Materials tested shall be identical to products proposed for use.

- D. Electrical Components: NFPA Article 100 listed and labeled by either UL or ETL or other testing agency acceptable to authorities having jurisdiction, marked for intended use, and tested as a system. Individual testing of components will not be acceptable in lieu of system testing.
- E. Anti-Microbial Characteristics: 'No Growth' per ASTM G 21 results for fungi ATCC9642, ATCC 9644, ATCC9645.
- F. Environmental Certification: Submit written certification from the manufacturer, including third party evaluation, recycling characteristics, and perpetual use certification as specified below. Initial submittals, which do not include the Environmental Certification, below will be rejected Materials that are simply 'PVC free' without identifying their inputs shall not qualify as meeting the intent of this specification and shall be rejected.
- G. Third Party Evaluation: Provide documentation stating the shade cloth has undergone third party evaluation for all chemical inputs, down to a scale of 100 parts per million, that have been evaluated for human and environmental safety. Identify any and all inputs, which are known to be carcinogenic, mutagenic, teratogenic, reproductively toxic, or endocrine disrupting. Also identify items that are toxic to aquatic systems, contain heavy metals, or organohalogenes. The material shall contain no inputs that are known problems to human or environmental health per the above major criteria, except for an input that is required to meet local fire codes.
- H. Recycling Characteristics: Provide documentation that the shade cloth can and is part of a closed loop of perpetual use and not be required to be down cycled, incinerated or otherwise thrown away. Scrap material can be sent back to the mill for reprocessing and recycling into the same quality yarn and woven into new material, without down cycling. Certify that this process is currently underway and will be utilized for this project.
- I. Perpetual Use Certification: Certify that at the end of the useful life of the shade cloth, that the material can be sent back to the manufacturer for recapture as part of a closed loop of perpetual use and that the material can and will be reconstituted into new yarn, for weaving into new shade

cloth. Provide information on each shade band indicating that the shade band can be sent back to the manufacturer for this purpose.

- J. Mock-Up: Provide a mock-up (manual shades only) of one roller shade assembly for evaluation of mounting, appearance and accessories.
  - 1. Locate mock-up in window designated by Architect.
  - 2. Do not proceed with remaining work until, mock-up is accepted by Architect.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver shades in factory-labeled packages, marked with manufacturer and product name, fire-test-response characteristics, and location of installation using same room designations indicated on Drawings and in the Window Treatment Schedule.

## 1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Install roller shades after finish work including painting is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

## 1.8 WARRANTY

- A. Roller Shade Hardware, Chain and Shadecloth (except EcoVeil): Manufacturer's standard non-depreciating twenty-five year limited warranty.
  - 1. EcoVeil standard non-depreciating 10-year limited warranty.
- B. Roller Shade Motors and Motor Control Systems: Manufacturer's standard non-depreciating five-year warranty.
- C. Roller Shade Installation: One year from date of Substantial Completion, not including scaffolding, lifts or other means to reach inaccessible areas.

## PART 2: PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: MechoShade Systems, Inc.; 42-03 35th Street, Long Island City, NY 11101. ASD. Tel: (718) 729-2020. Fax: (718) 729-2941.

# SECTION 12494 – ROLLER SHADES

Email: [info@mechoshade.com](mailto:info@mechoshade.com), [www.mechoshade.com](http://www.mechoshade.com).

- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.
- D. Alternates: The following products and manufacturers may be bid as an alternate product in accordance with Section 01030. Any pricing for alternate products shall be listed separately from the base bid specified product. Any alternate pricing must include line-by-line compliance or non-compliance with the specifications. If the alternate product is acceptable to the Architect, the specified manufacturer will be given the opportunity to provide an equivalent proposal.
  - 1. Suburban/2 Shade System by MechoShade Systems, Inc.
  - 2. (List other manufacturer or product here.)

## 2.2 APPLICATIONS/SCOPE

- A. Roller Shade Schedule:
  - 1. Shade Type 1: Manual operating, chain drive, sun-screen roller shades in all exterior windows of rooms and spaces shown on the Drawings.
  - 2. Shade Type 2: Manual operating interior, chain drive room darkening roller shades with blackout fabric in all exterior windows of rooms and spaces shown on Drawings, and related mounting systems and accessories.
  - 3. Shade Type 3: Manual operating interior, chain drive "double" solar and room darkening blackout roller shades, operating independently of each other, in all exterior windows of rooms and spaces shown on Drawings, and related mounting systems and accessories.
  - 4. Shade Type 4: Motorized interior solar roller shades in all exterior windows of rooms and spaces shown on Drawings, and related motor control systems.
  - 5. Shade Type 5: Motorized interior room darkening roller shades with blackout fabric in all exterior windows of rooms and spaces shown on Drawings, and related motor control systems.
  - 6. Shade Type 6: Motorized interior "double", solar and room darkening blackout roller shades, operating

independently of each other, in all exterior windows of rooms and spaces shown on Drawings, and related motor control systems.

## 2.3 SHADE CLOTH

- A. Visually Transparent Single-Fabric Shadecloth: MechoShade Systems, Inc., ThermoVeil group, single thickness non-raveling 0.030-inch (0.762 mm) thick vinyl fabric, woven from 0.018-inch (0.457 mm) diameter extruded vinyl yarn comprising of 21 percent polyester and 79 percent reinforced vinyl, in colors selected from manufacturer's available range.
  - 1. Open Linear Weave: "1800 series", 15 percent open, linear-weave pattern.
  - 2. Dense Linear Weave: "1000 series", 3 percent open, dense linear-weave pattern.
  - 3. Extra - Dense Linear Weave "0900 series", 0-1 percent visually translucent linear weave pattern.
  - 4. Open Basket Weave: "2100 series", 10 percent open, 2 by 2 open basket-weave pattern.
  - 5. Dense Basket Weave: "1300 series", 5 percent open, 2 by 2 dense basket-weave pattern.
  - 6. Dense "3000 Satin Texture", "3200 Diamond Pastel", and "3300 Diamond Earthtone series" visually translucent, twill-weave pattern all at 2 percent open.
  - 7. Color: Selected from manufacturer's standard colors.
- B. Visually Transparent Single-Fabric Shadecloth: MechoShade Systems, Inc., EuroVeil "5300" or EuroTwill "6000" Series: 0.010 diameter (0.254 mm) non-raveling vinyl/polyester yarn, fabric thickness 0.025 inches (0.635 mm).
  - 1. Dense Basket Weave "5300 series, 5 percent open.
  - 2. Extra Dense Twill Weave "6000" series, 2-3 percent open.
  - 3. Color: Selected from manufacturer's standard colors.
- C. Vinyl Room Darkening Shadecloth (Single-Fabric): MechoShade Systems, Inc., "0700 series", blackout material, washable and colorfast laminated and embossed vinyl coated fabric, 0.012 inches thick (0.30 mm) blackout material and weighing 0.81 lbs. per square yard, with a minimum of 62 threads per square inch in colors selected from manufacturer's available range.
  - 1. Color: Selected from manufacturer's standard colors.

# SECTION 12494 – ROLLER SHADES

---

- D. Room darkening (PVC Free) Shadecloth with opaque acrylic backing: MechoShade Systems, Inc., "Equinox 0100 series", .008 inches thick (.19 mm) blackout material and weighing .94 lbs. per square yard, comprising of 53% fiber glass, 45% acrylic, 2% poly finish.

1. Color: Selected from manufacturer's standard colors.

- E. Environmentally Certified Shadecloth: MechoShade Systems, Inc., EcoVeil group, 1350 Series, fabricated from TPO for both core yarn and jacket, single thickness, non-raveling 0.030 inch (0.762 mm) thick fabric.

1. Weave: 5 percent open 2x2 basket weave.

2. Color: Selected from manufacturer's standard colors.

## 2.4 SHADE BAND

- A. Shade Bands: Construction of shade band includes the fabric, the hem weight, hem-pocket, shade roller tube, and the attachment of the shade band to the roller tube. Sewn hems and open hem pockets are not acceptable.

1. Hem Pockets and Hem Weights: Fabric hem pocket with RF-welded seams (including welded ends) and concealed hem weights. Hem weights shall be of appropriate size and weight for shade band. Hem weight shall be continuous inside a sealed hem pocket. Hem pocket construction and hem weights shall be similar, for all shades within one room.

2. Shade band and Shade Roller Attachment

- Use extruded aluminum shade roller tube of a diameter and wall thickness required to support shade fabric without excessive deflection. Roller tubes less than 1.55 inch (39.37 mm) in diameter for manual shades, and less than 2.55 inches (64.77 mm) for motorize shades are not acceptable.
- Provide for positive mechanical engagement with drive / brake mechanism.
- Provide for positive mechanical attachment of shade band to roller tube; shade band shall be made removable / replaceable with a "snap-on" snap-off" spline mounting, without having to remove shade roller from shade brackets.
- Mounting spline shall not require use of adhesives, adhesive tapes, staples, and/or rivets.
- Any method of attaching shade band to roller tube

that requires the use of: adhesive, adhesive tapes, staples, and/or rivets are not acceptable.

## 2.5 SHADE FABRICATION

- Fabricate units to completely fill existing openings from head to sill and jamb-to-jamb, unless specifically indicated otherwise.
- Fabricate shadecloth to hang flat without buckling or distortion. Fabricate with heat-sealed trimmed edges to hang straight without curling or raveling. Fabricate unguided shadecloth to roll true and straight without shifting sideways more than 1/8 inch (3.18 mm) in either direction per 8 feet (2438 mm) of shade height due to warp distortion or weave design. Fabricate hem as follows:
  - Bottom hem weights.
  - Concealed hemtube.
  - Exposed hemtube.
  - Exposed blackout hembar with light seal.
  - Exposed blackout hembar with polybond seal.
- Provide battens in standard shades as required to assure proper tracking and uniform rolling of the shadebands. Contractor shall be responsible for assuring the width-to-height (W:H) ratios shall not exceed manufacturer's standards or, in absence of such standards, shall be responsible for establishing appropriate standards to assure proper tracking and rolling of the shadecloth within specified standards. Battens shall be roll-formed stainless steel or tempered steel, as required.
- For railroaded shadebands, provide seams in railroaded multi-width shadebands as required to meet size requirements and in accordance with seam alignment as acceptable to Architect. Seams shall be properly located. Furnish battens in place of plain seams when the width, height, or weight of the shade exceeds manufacturer's standards. In absence of such standards, assure proper use of seams or battens as required to, and assure the proper tracking of the railroaded multi-width shadebands.
- Provide battens for railroaded shades when width-to-height (W:H) ratios meet or exceed manufacturer's standards. In absence of manufacturer's standards, be responsible for proper use and placement of battens to assure proper tracking and roll of shadebands.



# SECTION 12494 – ROLLER SHADES

---

F. Blackout shadebands, when used in side channels, shall have horizontally mounted, roll-formed stainless steel or tempered-steel battens not more than 3 feet (115 mm) on center extending fully into the side channels. Battens shall be concealed in a integrally-colored fabric to match the inside and outside colors of the shadeband, in accordance with manufacturer's published standards for spacing and requirements.

1. Battens shall be roll formed of stainless steel or tempered steel and concave to match the contour of the roller tube.
2. Batten pockets shall be self-colored fabric front and back RF welded into the shadecloth. A self-color opaque liner shall be provided front and back to eliminate any see through of the batten pocket that shall not exceed 1-1/2 inches (38.1 mm) high and be totally opaque. A see-through moiré effect, which occurs with multiple layers of transparent fabrics, shall not be acceptable.

## 2.6 COMPONENTS

A. Access and Material Requirements:

1. Provide shade hardware allowing for the removal of shade roller tube from brackets without removing hardware from opening and without requiring end or center supports to be removed.
2. Provide shade hardware that allows for removal and re-mounting of the shade bands without having to remove the shade tube, drive or operating support brackets.
3. Use only Delrin engineered plastics by DuPont for all plastic components of shade hardware. Styrene based plastics, and /or polyester, or reinforced polyester will not be acceptable.

B. Motorized Shade Hardware and Shade Brackets:

1. Provide shade hardware constructed of minimum 1/8-inch (3.18 mm) thick plated steel, or heavier, thicker, as required to support 150 percent of the full weight of each shade.
2. Provide shade hardware system that allows for field adjustment of motor or replacement of any operable hardware component without requiring removal of

brackets, regardless of mounting position (inside, or outside mount).

3. Provide shade hardware system that allows for operation of multiple shade bands offset by a maximum of 8-45 degrees from the motor axis between shade bands (4-22.5 degrees) on each side of the radial line, by a single shade motor (multi-banded shade, subject to manufacturer's design criteria).

C. Manual Operated Chain Drive Hardware and Brackets:

1. Provide for universal, regular and offset drive capacity, allowing drive chain to fall at front, rear or non-offset for all shade drive end brackets. Universal offset shall be adjustable for future change.
2. Provide hardware capable for installation of a removable fascia, for both regular and/or reverse roll, which shall be installed without exposed fastening devices of any kind.
3. Provide shade hardware system that allows for removable regular and/or reverse roll fascias to be mounted continuously across two or more shade bands without requiring exposed fasteners of any kind.
4. Provide shade hardware system that allows for operation of multiple shade bands (multi-banded shades) by a single chain operator, subject to manufacturer's design criteria. Connectors shall be offset to assure alignment from the first to the last shade band.
5. Provide shade hardware system that allows multi-banded manually operated shades to be capable of smooth operation when the axis is offset a maximum of 6 degrees on each side of the plane perpendicular to the radial line of the curve, for a 12 degrees total offset.
6. Provide positive mechanical engagement of drive mechanism to shade roller tube. Friction fit connectors for drive mechanism connection to shade roller tube are not acceptable
7. Provide shade hardware constructed of minimum 1/8-inch (3.18 mm) thick plated steel or heavier as required to support 150 percent of the full weight of each shade.





# SECTION 12494 – ROLLER SHADES

## 8. Drive Bracket / Brake Assembly:

- a. MechoShade Drive Bracket model M5 shall be fully integrated with all MechoShade accessories, including, but not limited to: SnapLoc fascia, room darkening side / sill channels, center supports and connectors for multi-banded shades.
- b. M5 drive sprocket and brake assembly shall rotate and be supported on a welded 3/8 inch (9.525 mm) steel pin.
- c. The brake shall be an over-running clutch design which disengages to 90 percent during the raising and lowering of a shade. The brake shall withstand a pull force of 50 lbs. (22 kg) in the stopped position.
- d. The braking mechanism shall be applied to an oil-impregnated hub on to which the brake system is mounted. The oil impregnated hub design includes an articulated brake assembly, which assures a smooth, non-jerky operation in raising and lowering the shades. The assembly shall be permanently lubricated. Products that require externally applied lubrication and or not permanently lubricated are not acceptable.
- e. The entire M5 assembly shall be fully mounted on the steel support bracket, and fully independent of the shade tube assembly, which may be removed and reinstalled without effecting the roller shade limit adjustments.

- D. Drive Chain: #10 qualified stainless steel chain rated to 90 lb. (41 kg) minimum breaking strength. Nickel plate chain shall not be accepted.

## 2.7 SHADE MOTOR DRIVE SYSTEM

### A. Shade Motors:

1. Tubular, asynchronous (non-synchronous) motors, with built-in reversible capacitor operating at 110v AC (60hz), single phase, temperature Class A, thermally protected, totally enclosed, maintenance free with line voltage power supply equipped with locking disconnect plug assembly furnished with each motor.
2. Conceal motors inside shade roller tube.
3. Maximum current draw for each shade motor of 2.3 amps.

4. Use motors rated at the same nominal speed for all shades in the same room.

- B. Total hanging weight of shade band shall not exceed 80 percent of the rated lifting capacity of the shade motor and tube assembly.

## 2.8 MOTOR CONTROL SYSTEMS

- A. IQ/MLC: Specifications and design of shade motors and motor control system are based on the IQ/MLC motor logic control system manufactured by MechoShade Systems, Inc. Other systems may be acceptable provide that all of the following performance capabilities are provided. Motor logic control systems not in complete compliance with these performance criteria shall not be accepted as equal systems.

### 1. Motor Control System:

- a. Provide power to each shade motor via individual 3 conductor line voltage circuits connecting each motor to the relay based motor logic controllers (IQ/MLC).
- b. Control system components shall provide appropriate (spike and brown out) over-current protection (+/- 10 percent of line voltage) for each of the four individual motor circuits and shall be rated by UL or ETL as a recognized component of this system and tested as an integrated system.
- c. Motor control system shall allow each group of four shade motors in any combination to be controlled by each of four local switch ports, with up to fourteen possible "sub-group" combinations via local 3-button wall switches and all at once via a master 3-button switch. System shall allow for overlapping switch combinations from two or more local switches.
- d. Multiple "sub-groups" from different IQ/MLC control components shall be capable of being combined to form "groups" operated by a single 3-button wall switch, from either the master port or in series from a local switch port.
- e. Each shade motor shall be accessible (for control purposes) from up to four local switches and one master switch.
- f. Control system shall allow for automatic alignment of shade hem bars in stopped position at 25 percent,

# SECTION 12494 – ROLLER SHADES

---

- 50 percent, and 75 percent of opening heights, and up to three user-defined intermediate stopping positions in addition to all up / all down, regardless of shade height, for a total of five positions. Control system shall allow shades to be stopped at any point in the opening height noting that shades may not be in alignment at these non-defined positions).
- g. Control system shall have two standard operating modes: Normal mode allowing the shades to be stopped anywhere in the window's opening height and uniform mode, allowing the shades to only be stopped at the predefined intermediate stop positions. Both modes shall allow for all up / all down positioning.
  - h. Control system components shall allow for interface with both audiovisual system components and building fire and life safety system via a dry contact terminal block.
  - i. Control system components shall allow for interface with external analog input control devices such as solar activated controllers, 24 hour timers, and similar items; via a dry contact terminal block.
  - j. Reconfiguration of switch groups shall not require rewiring of the hardwired line voltage motor power supply wiring, or the low voltage control wiring. Reconfiguration of switch groups shall be accomplished within the motor control device (IQ/MLC).
2. Wall Switches:
- a. Three-button architectural flush mounted switches with metal cover plate and no exposed fasteners.
  - b. Connect local wall switches to control system components via low voltage (12V DC) 4-conductor modular cable equipped with RJ-11 type connectors supplied, installed and certified under Division 16 - Electrical.
  - c. Connect master wall switches to control system components via low voltage (12V DC) 6-conductor modular cable equipped with RJ-12 type connectors supplied, installed and certified under Division 16 - Electrical.
- B. I.CON Control System (Software, two way communication): Specifications and design are based on the I.CON motor control system as manufactured by MechoShade Systems, Inc.
- Inc. Other systems may be acceptable provided that all of the following performance capabilities are provided. Motor control systems not in complete compliance with these performance criteria shall not be accepted as equal systems.
- 1. Upper and lower stopping points (operating limits) of shadebands shall be programmed into motors via a hand held removable program module / configurator.
  - 2. Intermediate stopping positions for shades shall be 4 predefined intermediate positions, for a total of 6 defined and aligned positions. All shades on the same switch circuit with the same opening height shall align at each intermediate stopping position.
  - 3. Motors shall be addressable through a 2 motor bus interface module via a hand-held removable program module and shall be capable of responding to a minimum of seven different user defined stored addresses including multiple overlapping sub groups and three reserved control input addresses for use by building management systems, life safety systems and other emergency inputs.
  - 4. The BI and I.CON controller system shall have the capability of two-way communication with the motors. Each I.CON controller, (bus Interface or BI) shall allow for a unique address message to be received from the hand held configurator and/or a PC controller or switch.
    - a. Bus line shall consist of 2 twisted pair of 16 ga low voltage wire.
    - b. Shade motor control components (bus interfaces, wall switches, bus supplies, auxiliary control input devices, and similar items) shall be connected in series via the low voltage (12VDC) two way digital communication bus line.
    - c. Bus line shall be capable of being installed in a free topology to provide maximum flexibility for installation and future maintenance.
    - d. Low voltage (12VDC) digital bus line shall be powered by a bus supply transformer, requiring 115VAC (220 - 230 VAC) input drawing a maximum

# SECTION 12494 – ROLLER SHADES

current of 1 amp. A minimum of one bus supply shall be required for every 400 linear feet of bus line.

Final bus supply spacing shall be reviewed with the system manufacturer after the number of nodes per 400 ft (120 meters) run of bus line has been determined.

## 5. Wall Switches:

- a. Shades shall be operated by 4 button low voltage standard switches or programmable intelligent switches [IS]. Standard switch shall be wired to a bus interface and the bus interface will be programmed to transmit an address for the local switch.
- b. Intelligent switches may be installed anywhere on the busline. Each IS shall be capable of storing one control level address to be broadcast along the busline.
- c. An address that is transmitted by either a switch or central controller shall be responded to by those motors with the same address in their control table.
- d. IS shall provide for interface with other low voltage input devices via a set of dry contact terminals located on the switch.
- e. Standard switch or IS may control an individual, sub-group or group of motors in accordance with the address in each motor/BI unit.

## 2.9 ACCESSORIES

### A. Roller Shade Pocket for recessed mounting in acoustical tile, or drywall ceilings as indicated on the Drawings.

1. Provide either extruded aluminum and or formed steel shade pocket, sized to accommodate roller shades, with exposed extruded aluminum closure mount, tile support and removable closure panel to provide access to shades.
  - a. Provide "Vented Pocket" such that there will be a minimum of four 1 inch (25.4 mm) diameter holes per foot allowing the solar gain to flow above the ceiling line.

### B. Fascia (for Shade Type ??):

1. Continuous removable extruded aluminum fascia that attaches to shade mounting brackets without the use of adhesives, magnetic strips, or exposed fasteners.
2. Fascia shall be able to be installed across two or more shade bands in one piece.
3. Fascia shall fully conceal brackets, shade roller and fabric on the tube.
4. Provide bracket / fascia end caps where mounting conditions expose outside of roller shade brackets.
5. Notching of Fascia for manual chain shall not be acceptable.

### C. Room Darkening Side and / or Sill Channels:

1. Extruded aluminum with polybond edge seals and SnapLoc-mounting brackets and with concealed fastening. Exposed fastening is not acceptable. Channels shall accept one-piece exposed blackout hembar with vinyl seal to assure side light control and sill light control.
  - a. MechoShade side channels, 1-15/16 inches (49.2 mm) wide by 1-3/16 inches (30.1 mm) deep, two-band center channels, 2-5/8 inches (66.6 mm) wide by 1-3/16 inches (30.1 mm) deep. The 2-5/8-inch (66.6 mm) double-center channels may be installed at center-support positions of multi-band-shade ElectroShades. MechoShade side channels 2-5/8 inch (66.6 mm) may be used as center supports for ElectroShades; shadebands up to 8 high. For shadebands over 8 feet (2438 mm), provide ElectroShade side channels.
  - b. ElectroShade side channels, 2-1/2 inches (63.5 mm) wide by 1-3/16 inches (30.1 mm) deep; two-band center channels 5 inches (127 mm) wide by 1-3/16 inches (30.1 mm) deep. The 2-5/8-inch (66.6 mm) double-center channels may be installed at center-support positions of multi-band-shade ElectroShades. MechoShade side channels 2-5/8 inches (66.6 mm) may be used as center supports for ElectroShades. Also provide for use with manually operated room darkening MechoShades over 8 feet (2438 mm) in height.

# SECTION 12494 – ROLLER SHADES

---

- c. Color: Selected from manufacturer's standard colors.
- d. Color: Custom color as selected by Architect.

## PART 3: EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### 3.3 INSTALLATION

- A. Install roller shades level, plumb, square, and true according to manufacturer's written instructions, and located so shade band is not closer than 2 inches (50 mm) to interior face of glass. Allow proper clearances for window operation hardware.
- B. Turn-Key Single-Source Responsibility for Motorized Interior Roller Shades: To control the responsibility for performance of motorized roller shade systems, assign the design, engineering, and installation of motorized roller shade systems, motors, controls, and low voltage electrical control wiring specified in this Section to a single manufacturer and their authorized installer/dealer. The Architect will not produce a set of electrical drawings for the installation of control wiring for the motors, or motor controllers of the motorized roller shades. Power wiring (line voltage), shall be provided by the roller shade installer/dealer, in accordance with the requirements provided by the manufacturer. Coordinate the following with the roller shade installer/dealer:
  - 1. Main Contractor shall provide power panels and circuits of sufficient size to accommodate roller shade manufacturer's requirements, as indicated on the

mechanical and electrical drawings.

- 2. Main Contractor shall coordinate with requirements of roller shade installer/dealer, before inaccessible areas are constructed.
  - 3. Roller shade installer/dealer shall run line voltage as dedicated home runs (of sufficient quantity, in sufficient capacity as required) terminating in junction boxes in locations designated by roller shade dealer.
  - 4. Roller shade installer/dealer shall provide and run all line voltage (from the terminating points) to the motor controllers, wire all roller shade motors to the motor controllers, and provide and run low voltage control wiring from motor controllers to switch/ control locations designated by the Architect. All above-ceiling and concealed wiring shall be plenum-rated, or installed in conduit, as required by the electrical code having jurisdiction.
  - 5. Main Contractor shall provide conduit with pull wire in all areas, which might not be accessible to roller shade contractor due to building design, equipment location or schedule.
  - C. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.
  - D. Clean roller shade surfaces after installation, according to manufacturer's written instructions.
  - E. Engage Installer to train Owner's maintenance personnel to adjust, operate and maintain roller shade systems.
- ### 3.4 PROTECTION
- A. Protect installed products until completion of project.
  - B. Touch-up, repair or replace damaged products before Substantial Completion.