

TSRA31BET

3" Track Spot Luminaire with Regressed Arm

3" Diameter Track spot designed for retail, hospitality and commercial spot lighting applications.

LUMENS / WATTAGE DATA

| PART NUMBER | SOURCE LUMENS ¹ | DELIVERED LUMENS ² | SYSTEM WATTS | LPW |
|---------------|----------------------------|-------------------------------|--------------|-----|
| TSRA31BET 21L | 2100 | 2100 | 28 | 75 |

¹ Nominal Source Lumens at 35K ² Nominal Delivered Lumens

FEATURES

TSRA31 fixture delivers approximately 2100 initial lumens viz precise TIR optics. Available in four distinct beam patterns. Regressed optic produces clean beam with smooth edge and is field interchangeable to other beam angles without tools. Integral flat black baffle reduces peripheral brightness. Sturdy, regressed support arm has positive friction-grip hardware that will not sag, or rotate out of aiming position over time. Clean cylindrical housing has no exposed hardware and can rotate 359 degrees with up to 90 degree aiming from nadir. Integral on/off switch for convenience.

CONSTRUCTION

TSRA31 is constructed of die cast aluminum and fabricated steel and is finished with durable powder coat finish that can be easily cleaned and maintained.

ELECTRONICS

TSRA31 has best in class LED system with 3 MacAdam ellipse binning and 80+ CRI. Integral 120V power supply is dimmable via ELV type dimming protocol control devices (contact factory for more information).

CODE COMPLIANCE

ETL listed for dry location. Manufactured and tested to UL Standards No. 1574.

WARRANTY

5 year warranty standard. L70>60,000 hours.

QUICK SHIP

Quick ship highlighted options ship in 2-4 days.

PROJECT: _____

QUANTITY: _____

TYPE: _____

SPEC
TRAC



PRODUCT SELECTOR GUIDE

| SERIES | FAMILY | LUMENS | CCT | BEAM | DIMMING | ADAPTOR | FINISH |
|--------|--------|--------|-----|------|---------|---------|--------|
| TS | RA31 | 21L | | | E1 | BET | |

EXAMPLE

| | | | | | | | |
|----|------|-----|-----|----|----|-----|----|
| TS | RA31 | 21L | 35K | MD | E1 | BET | MW |
|----|------|-----|-----|----|----|-----|----|

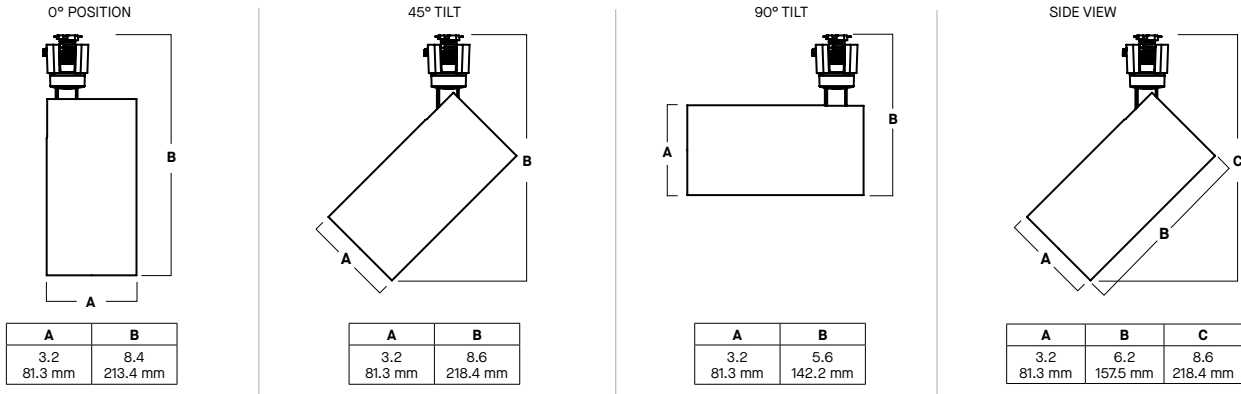
| SERIES | FAMILY | LUMENS | CCT | BEAM | DIMMING | ADAPTOR | FINISH | | |
|--------|--------|--------|--------|------------|------------------|--------------------------------------|---|-----------------------------|----------------------------------|
| TS | RA31 | 21L | 2100Lm | 30K 35K | 3000 K 3500 K | XN 14° ND 24° MD 34° XW 59° | E1 Electronic Driver, 120V. ELV Dimming. | BET Basix 1 CIR/1 NEUT 120V | MW Matte White MB Matte Black |

GREEN TEXT INDICATES QUICK SHIP OPTIONS



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FIXTURE DIMENSIONS



FINISH



PAINT TIMES

| TIER | COST | AVERAGE PAINT TIME* |
|----------------------------|-----------------|---------------------|
| Tier 1 - Standard Finishes | \$ | 🕒 |
| Custom Color | Contact Factory | Contact Factory |

*CONTACT FACTORY FOR SPECIFIC PRODUCT LEAD TIMES

TSRA31 21L 35K XN E1 BET xx

| CANDLEPOWER CURVE TEST SP-15009 | INTENSITY CANDELA 0° AZIMUTH | ZONAL LUMENS | SINGLE UNIT: PERFORMANCE HORIZONTAL FOOTCANDLES INITIAL DOWNLIGHT ONLY | | | | MULTIPLE UNITS: PERFORMANCE 80/50/20% REFLECTANCES HORIZONTAL FOOTCANDLES AND WATTS/SQ FT | | | | | | | | | | | |
|------------------------------------|------------------------------------|--------------|--|-------------------------|------------------------------|-----------------------|---|--------------------|--------|---|-------|-----|------|-----|------|--|--|--|
| | | | Mounting Distance | FC at Beam Center | Diameter at Beam Angle | FC at Beam Edge | Ceiling Height | Fixture Spacing | RCR 6 | | RCR 8 | | | | | | | |
| | 0° | 18650 | 0° - 10° | 1027 | 47% | 6.5' | 441 fc | 1.6' | 216 fc | 18' | 3' | 225 | 2.21 | 211 | 2.19 | | | |
| | 5° | 12891 | 0° - 20° | 1774 | 81% | 7.5' | 332 fc | 1.9' | 162 fc | 22' | 4' | 138 | 1.36 | 130 | 1.35 | | | |
| | 15° | 2506 | 0° - 30° | 2037 | 93% | 8.5' | 258 fc | 2.1' | 126 fc | 26' | 5' | 71 | 0.70 | 88 | 0.91 | | | |
| | 25° | 508 | 0° - 40° | 2131 | 97% | 10.0' | 186 fc | 2.5' | 91 fc | Delivered Illuminance Rating: (DIR) | | | | | | | | |
| | 35° | 134 | 0° - 60° | 2180 | 99% | 12.0' | 130 fc | 3.0' | 63 fc | 1' Suspension Length to luminous aperture | | | | | | | | |
| | 45° | 45 | 0° - 80° | 2183 | 100% | 14.0' | 95 fc | 3.5' | 46 fc | Square rooms used for multiple units: | | | | | | | | |
| | 55° | 9 | 0° - 90° | 2184 | 100% | 16.0' | 73 fc | 4.0' | 36 fc | RCR 6: Length & Width = Ceiling Ht. - 3.5' x 1.66 | | | | | | | | |
| | 90° | 1 | Total | 2192 | 100% | 20.0' | 47 fc | 5.0' | 23 fc | RCR 8: Length & Width = Ceiling Ht. - 3.5' x 1.25 | | | | | | | | |
| | | | | Delivered Lumens: 2192 | CP at 0° (Nadir): 18650 | Beam Angle: 14° | CCT Multiplier: 30K x .93 | | | | | | | | | | | |
| | | | | Luminaire Watts: 20 | CRI: 80+ | Spacing Ratio: 0.25 | | | | | | | | | | | | |
| | | | | LER: 109.60 | Melanopic Ratio: 0.57 | | | | | | | | | | | | | |

TSRA31 21L 35K ND E1 BET xx

| CANDLEPOWER CURVE TEST SP-15009_1 | INTENSITY CANDELA 0° AZIMUTH | ZONAL LUMENS | SINGLE UNIT: PERFORMANCE HORIZONTAL FOOTCANDLES INITIAL DOWNLIGHT ONLY | | | | MULTIPLE UNITS: PERFORMANCE 80/50/20% REFLECTANCES HORIZONTAL FOOTCANDLES AND WATTS/SQ FT | | | | | | | | | | | |
|--------------------------------------|------------------------------------|--------------|--|-------------------------|------------------------------|-----------------------|---|--------------------|--------|---|-------|-----|------|-----|------|--|--|--|
| | | | Mounting Distance | FC at Beam Center | Diameter at Beam Angle | FC at Beam Edge | Ceiling Height | Fixture Spacing | RCR 4 | | RCR 6 | | | | | | | |
| | 0° | 9946 | 0° - 10° | 783 | 37% | 6.5' | 235 fc | 2.8' | 110 fc | 15' | 4' | 123 | 1.19 | 132 | 1.37 | | | |
| | 5° | 9005 | 0° - 20° | 1655 | 77% | 7.5' | 177 fc | 3.2' | 83 fc | 18' | 5' | 77 | 0.75 | 83 | 0.86 | | | |
| | 15° | 3184 | 0° - 30° | 1936 | 90% | 8.5' | 138 fc | 3.6' | 64 fc | 22' | 6' | 62 | 0.60 | 51 | 0.53 | | | |
| | 25° | 573 | 0° - 40° | 2049 | 96% | 10.0' | 99 fc | 4.3' | 47 fc | Delivered Illuminance Rating: (DIR) | | | | | | | | |
| | 35° | 175 | 0° - 60° | 2123 | 99% | 12.0' | 69 fc | 5.1' | 32 fc | 1' Suspension Length to luminous aperture | | | | | | | | |
| | 45° | 68 | 0° - 80° | 2129 | 99% | 14.0' | 51 fc | 6.0' | 24 fc | Square rooms used for multiple units: | | | | | | | | |
| | 55° | 25 | 0° - 90° | 2130 | 100% | 16.0' | 39 fc | 6.8' | 18 fc | RCR 4: Length & Width = Ceiling Ht. - 3.5' x 2.50 | | | | | | | | |
| | 90° | 2 | Total | 2140 | 100% | 20.0' | 25 fc | 8.5' | 12 fc | RCR 6: Length & Width = Ceiling Ht. - 3.5' x 1.66 | | | | | | | | |
| | | | | Delivered Lumens: 2140 | CP at 0° (Nadir): 9946 | Beam Angle: 24° | CCT Multiplier: 30K x .93 | | | | | | | | | | | |
| | | | | Luminaire Watts: 20 | CRI: 80+ | Spacing Ratio: 0.41 | | | | | | | | | | | | |
| | | | | LER: 107.00 | Melanopic Ratio: 0.57 | | | | | | | | | | | | | |

HOW TO USE PERFORMANCE DATA

| SINGLE UNIT | MULTIPLE UNITS |
|---|---|
| <p>Cone of Light of a single, symmetrical beam luminaire. Direct initial illumination (FC) and Beam Angle diameter directly beneath fixture; shown at different distances from aperture to horizontal plane. Calculated using Inverse Square Law.</p> $FC_{H} = CP \times (\cos \theta) \div D^2$ <p>Beam Diam. = 1/2 Beam Angle (Tan) x 2D</p> <ul style="list-style-type: none"> CP Candela at 0° (Nadir) cos θ Cosine of θ Angle D Distance (Mounting Height AFF) FC_H Footcandles, Horizontal Beam Angle Cone of light to 50% max. CP Beam Diam. Pattern of light at Beam Angle | <p>Square grid layout of multiple luminaires in unfurnished, square rooms of different proportions (Room Cavity Ratios) with 80/50/20% room surface reflectances. 2' Suspension Length to aperture. Initial average illumination (FC) calculated at 2.5' above floor, using Zonal Cavity Method. W/Sq. Ft. of layout shown for each ceiling height and RCR.</p> <p>Delivered Illuminance Rating (DIR*): System performance indicator expressed as ratio of approximate initial FC per W/Sq. Ft. delivered to horizontal plane below, for the range of ceiling heights indicated.</p> <ul style="list-style-type: none"> To estimate FC for Fixture Spacing that is different than shown (do not exceed Spacing Ratio): FC = Chart Spacing² ÷ Different Spacing² x Chart FC To estimate Sq. Ft. per fixture for a specific target FC: Sq. Ft. / Fixture = Chart FC x Chart Spacing² ÷ Target FC To estimate Fixture Quantity in a room: Fixture Qty. = Sq. Ft. of Rm. ÷ Sq. Ft. per fixture To estimate Watts/Sq. Ft.: W/ Sq. Ft. = Luminaire Watts x Qty. ÷ Sq. Ft. of Rm. |

TSRA31 21L 35K MD E1 BET xx

| CANDLEPOWER CURVE TEST SP-15009_2 | INTENSITY CANDELA 0° AZIMUTH | ZONAL LUMENS | SINGLE UNIT: PERFORMANCE HORIZONTAL FOOTCANDLES INITIAL DOWNLIGHT ONLY | | | | MULTIPLE UNITS: PERFORMANCE 80/50/20% REFLECTANCES HORIZONTAL FOOTCANDLES AND WATTS/SQ FT | | | | | |
|--------------------------------------|--|------------------------------------|--|---------------------------|------------------------|-----------------|---|-----------------|-------|------|-------|------|
| | | | Mounting Distance | FC at Beam Center | Diameter at Beam Angle | FC at Beam Edge | Ceiling Height | Fixture Spacing | RCR 3 | | RCR 5 | |
| | 0° | 0° - 10° 575 25% | 6.5' | 152 fc | 4.0' | 66 fc | 12' | 4' | 138 | 1.22 | 115 | 1.11 |
| | 0° | 0° - 20° 1633 72% | 7.5' | 114 fc | 4.6' | 50 fc | 15' | 5' | 99 | 0.87 | 63 | 0.60 |
| | 5° | 0° - 30° 2099 92% | 8.5' | 89 fc | 5.2' | 39 fc | 18' | 6' | 62 | 0.55 | 62 | 0.59 |
| | 15° | 0° - 40° 2202 97% | 10.0' | 64 fc | 6.2' | 28 fc | Delivered Illuminance Rating: (DIR) | | | | | |
| | 25° | 0° - 60° 2255 99% | 12.0' | 44 fc | 7.4' | 19 fc | 113 FC per W/Sq. Ft. | | | | | |
| | 35° | 0° - 80° 2259 99% | 14.0' | 33 fc | 8.6' | 14 fc | 104 FC per W/Sq. Ft. | | | | | |
| | 45° | 0° - 90° 2261 100% | 16.0' | 25 fc | 9.9' | 11 fc | 1' Suspension Length to luminous aperture Square rooms used for multiple units: RCR 3: Length & Width = Ceiling Ht. - 3.5' x 3.33 RCR 5: Length & Width = Ceiling Ht. - 3.5' x 2.00 * Average Initial Footcandles at 2.5' Above Floor | | | | | |
| | 55° | Total 2271 100% | 20.0' | 16 fc | 12.3' | 7 fc | | | | | | |
| | 90° | | | | | | | | | | | |
| | Delivered Lumens: 2271 Luminaire Watts: 20 LER: 113.55 | CP at 0° (Nadir): 6405 CRI: 80+ | Beam Angle: 34° Spacing Ratio: 0.57 Melanopic Ratio 0.58 | CCT Multiplier: 30K x .93 | | | | | | | | |

TSRA31 21L 35K XW E1 BET xx

| CANDLEPOWER CURVE TEST SP-15009_3 | INTENSITY CANDELA 0° AZIMUTH | ZONAL LUMENS | SINGLE UNIT: PERFORMANCE HORIZONTAL FOOTCANDLES INITIAL DOWNLIGHT ONLY | | | | MULTIPLE UNITS: PERFORMANCE 80/50/20% REFLECTANCES HORIZONTAL FOOTCANDLES AND WATTS/SQ FT | | | | | |
|--------------------------------------|--|------------------------------------|--|---------------------------|------------------------|-----------------|---|-----------------|-------|------|-------|------|
| | | | Mounting Distance | FC at Beam Center | Diameter at Beam Angle | FC at Beam Edge | Ceiling Height | Fixture Spacing | RCR 2 | | RCR 4 | |
| | 0° | 0° - 10° 238 11% | 6.5' | 58 fc | 7.4' | 19 fc | 9' | 4' | 148 | 1.30 | 96 | 0.95 |
| | 0° | 0° - 20° 899 40% | 7.5' | 44 fc | 8.5' | 14 fc | 12' | 5' | 81 | 0.71 | 71 | 0.71 |
| | 5° | 0° - 30° 1677 74% | 8.5' | 34 fc | 9.7' | 11 fc | 15' | 6' | 56 | 0.49 | 39 | 0.39 |
| | 15° | 0° - 40° 2102 93% | 10.0' | 25 fc | 11.4' | 8 fc | Delivered Illuminance Rating: (DIR) | | | | | |
| | 25° | 0° - 60° 2250 99% | 12.0' | 17 fc | 13.7' | 6 fc | 114 FC per W/Sq. Ft. | | | | | |
| | 35° | 0° - 80° 2255 100% | 14.0' | 13 fc | 16.0' | 4 fc | 100 FC per W/Sq. Ft. | | | | | |
| | 45° | 0° - 90° 2256 100% | 16.0' | 10 fc | 18.2' | 3 fc | 1' Suspension Length to luminous aperture Square rooms used for multiple units: RCR 2: Length & Width = Ceiling Ht. - 3.5' x 5.00 RCR 4: Length & Width = Ceiling Ht. - 3.5' x 2.50 * Average Initial Footcandles at 2.5' Above Floor | | | | | |
| | 55° | Total 2265 100% | 20.0' | 6 fc | 22.8' | 2 fc | | | | | | |
| | 90° | | | | | | | | | | | |
| | Delivered Lumens: 2265 Luminaire Watts: 20 LER: 113.25 | CP at 0° (Nadir): 2470 CRI: 80+ | Beam Angle: 59° Spacing Ratio: 0.95 Melanopic Ratio 0.58 | CCT Multiplier: 30K x .93 | | | | | | | | |

HOW TO USE PERFORMANCE DATA

| SINGLE UNIT | MULTIPLE UNITS |
|---|---|
| <p>Cone of Light of a single, symmetrical beam luminaire. Direct initial illumination (FC) and Beam Angle diameter directly beneath fixture; shown at different distances from aperture to horizontal plane. Calculated using Inverse Square Law.</p> $FC_{H} = CP \times (\cos \theta) \div D^2$ <p>Beam Diam. = $\frac{1}{2}$ Beam Angle (Tan) x 2D</p> <ul style="list-style-type: none"> • CP Candela at 0° (Nadir) • Cos θ Cosine of θ Angle • D Distance (Mounting Height AFF) • FC_{H} Footcandles, Horizontal • Beam Angle Cone of light to 50% max. CP • Beam Diam. Pattern of light at Beam Angle | <p>Square grid layout of multiple luminaires in unfurnished, square rooms of different proportions (Room Cavity Ratios) with 80/50/20% room surface reflectances. 2' Suspension Length to aperture. Initial average illumination (FC) calculated at 2.5' above floor, using Zonal Cavity Method. W/Sq. Ft. of layout shown for each ceiling height and RCR.</p> <p>Delivered Illuminance Rating (DIR*): System performance indicator expressed as ratio of approximate initial FC per W/Sq. Ft. delivered to horizontal plane below, for the range of ceiling heights indicated.</p> <ul style="list-style-type: none"> • To estimate FC for Fixture Spacing that is different than shown (do not exceed Spacing Ratio): $FC = \text{Chart Spacing}^2 \div \text{Different Spacing}^2 \times \text{Chart FC}$ • To estimate Sq. Ft. per fixture for a specific target FC: $\text{Sq. Ft.} / \text{Fixture} = \text{Chart FC} \times \text{Chart Spacing}^2 \div \text{Target FC}$ <ul style="list-style-type: none"> • To estimate Fixture Quantity in a room: $\text{Fixture Qty.} = \text{Sq. Ft. of Rm.} \div \text{Sq. Ft. per fixture}$ • To estimate Watts/Sq. Ft.: $W / \text{Sq. Ft.} = \text{Luminaire Watts} \times \text{Qty.} \div \text{Sq. Ft. of Rm.}$ |