Spectrum Lighting

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

PROJECT:

QUANTITY: TYPE:

SPEC TRAC

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
TRSA31 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
TRSA31 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.

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**	3000 K	**XN**	14°	**E1**	Electronic Driver, 120V. ELV Dimming.	**BET**	Basix 1 CIR/1 NEUT 120V	**MW**	Matte White
				35K	3500 K	**ND**	24°					**MB**	Matte Black
						MD	34°						
						XW	59°						

GREEN TEXT INDICATES QUICK SHIP OPTIONS

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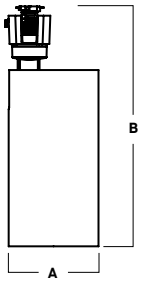
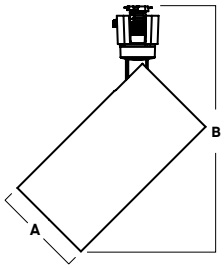
FIXTURE DIMENSIONS

0° POSITION



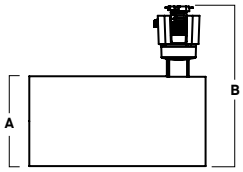
A	B
3.2 81.3 mm	8.4 213.4 mm

45° TILT



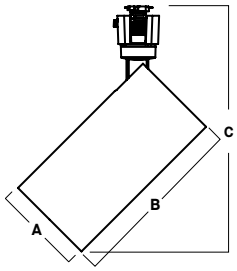
A	B
3.2 81.3 mm	8.6 218.4 mm

90° TILT



A	B
3.2 81.3 mm	5.6 142.2 mm

SIDE VIEW



A	B	C
3.2 81.3 mm	6.2 157.5 mm	8.6 218.4 mm

FINISH

MW
Matte White

MB
Matte Black

PAINT TIMES

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

*CONTACT FACTORY FOR SPECIFIC PRODUCT LEAD TIMES

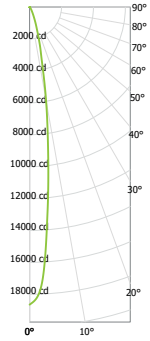
TSRA31BET

3.1" Track Spot Luminaire with Regressed Arm

Spectrum Lighting

TSRA31 21L 35K XN E1 BET xx

CANDLEPOWER CURVE
TEST SP-15009



Delivered Lumens: 2192
Luminaire Watts: 20
LER: 109.60

INTENSITY
CANDELA
0° AZIMUTH

	0°
0°	18650
5°	12891
15°	2506
25°	508
35°	134
45°	45
55°	9
90°	1

CP at 0° (Nadir): 18650
CRI: 80+

ZONAL LUMENS

0° - 10°	1027	47%
0° - 20°	1774	81%
0° - 30°	2037	93%
0° - 40°	2131	97%
0° - 60°	2180	99%
0° - 80°	2183	100%
0° - 90°	2184	100%
Total	2192	100%

SINGLE UNIT: PERFORMANCE
HORIZONTAL FOOTCANDLES
INITIAL DOWNLIGHT ONLY

Mounting Distance	FC at Beam Center	Diameter at Beam Angle	FC at Beam Edge
6.5 '	441 fc	1.6 '	216 fc
7.5 '	332 fc	1.9 '	162 fc
8.5 '	258 fc	2.1 '	126 fc
10.0 '	186 fc	2.5 '	91 fc
12.0 '	130 fc	3.0 '	63 fc
14.0 '	95 fc	3.5 '	46 fc
16.0 '	73 fc	4.0 '	36 fc
20.0 '	47 fc	5.0 '	23 fc

Beam Angle: 14°
Spacing Ratio: 0.25
Melanopic Ratio 0.57

MULTIPLE UNITS: PERFORMANCE
80/50/20% REFLECTANCES
HORIZONTAL FOOTCANDLES AND WATTS/SQ FT

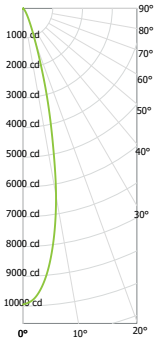
Ceiling Height	Fixture Spacing	RCR 6		RCR 8	
		FC +	W/Sq. Ft.	FC +	W/Sq. Ft.
18'	3'	225	2.21	211	2.19
22'	4'	138	1.36	130	1.35
26'	5'	71	0.70	88	0.91
Delivered Illuminance Rating: (DIR)		102 FC per W/Sq. Ft.		96 FC per W/Sq. Ft.	

1' Suspension Length to luminous aperture
Square rooms used for multiple units:
RCR 6: Length & Width = Ceiling Ht. - 3.5' x 1.66
RCR 8: Length & Width = Ceiling Ht. - 3.5' x 1.25
+ Average Initial Footcandles at 2.5' Above Floor

CCT Multiplier: 30K x .93

TSRA31 21L 35K ND E1 BET xx

CANDLEPOWER CURVE
TEST SP-15009_1



Delivered Lumens: 2140
Luminaire Watts: 20
LER: 107.00

INTENSITY
CANDELA
0° AZIMUTH

	0°
0°	9946
5°	9005
15°	3184
25°	573
35°	175
45°	68
55°	25
90°	2

CP at 0° (Nadir): 9946
CRI: 80+

ZONAL LUMENS

0° - 10°	783	37%
0° - 20°	1655	77%
0° - 30°	1936	90%
0° - 40°	2049	96%
0° - 60°	2123	99%
0° - 80°	2129	99%
0° - 90°	2130	100%
Total	2140	100%

SINGLE UNIT: PERFORMANCE
HORIZONTAL FOOTCANDLES
INITIAL DOWNLIGHT ONLY

Mounting Distance	FC at Beam Center	Diameter at Beam Angle	FC at Beam Edge
6.5 '	235 fc	2.8 '	110 fc
7.5 '	177 fc	3.2 '	83 fc
8.5 '	138 fc	3.6 '	64 fc
10.0 '	99 fc	4.3 '	47 fc
12.0 '	69 fc	5.1 '	32 fc
14.0 '	51 fc	6.0 '	24 fc
16.0 '	39 fc	6.8 '	18 fc
20.0 '	25 fc	8.5 '	12 fc

Beam Angle: 24°
Spacing Ratio: 0.41
Melanopic Ratio 0.57

MULTIPLE UNITS: PERFORMANCE
80/50/20% REFLECTANCES
HORIZONTAL FOOTCANDLES AND WATTS/SQ FT

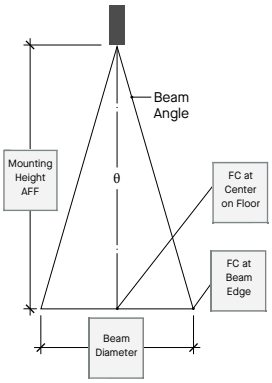
Ceiling Height	Fixture Spacing	RCR 4		RCR 6	
		FC +	W/Sq. Ft.	FC +	W/Sq. Ft.
15'	4'	123	1.19	132	1.37
18'	5'	77	0.75	83	0.86
22'	6'	62	0.60	51	0.53
Delivered Illuminance Rating: (DIR)		103 FC per W/Sq. Ft.		96 FC per W/Sq. Ft.	

1' Suspension Length to luminous aperture
Square rooms used for multiple units:
RCR 4: Length & Width = Ceiling Ht. - 3.5' x 2.50
RCR 6: Length & Width = Ceiling Ht. - 3.5' x 1.66
+ Average Initial Footcandles at 2.5' Above Floor

CCT Multiplier: 30K x .93

HOW TO USE PERFORMANCE DATA

SINGLE UNIT



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.

$FC_H = CP \times (\cos \theta) \div D^2$

Beam Diam. = ½ Beam Angle (Tan) x 2D

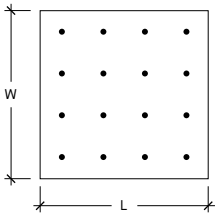
- CP — Candela at 0° (Nadir)
- Cos θ — Cosine of θ Angle
- D — Distance (Mounting Height AFF)
- FC_H — Footcandles, Horizontal
- Beam Angle — Cone of light to 50% max. CP
- Beam Diam. — Pattern of light at Beam Angle

MULTIPLE UNITS

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.

Delivered Illuminance Rating (DIR[e]):
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.

- To estimate FC for Fixture Spacing that is different than shown (do not exceed Spacing Ratio):
  FC = Chart Spacing^2 ÷ Different Spacing^2 x Chart FC
- To estimate Sq. Ft. per fixture for a specific target FC:
  Sq. Ft. / Fixture = Chart FC x Chart Spacing^2 ÷ 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.

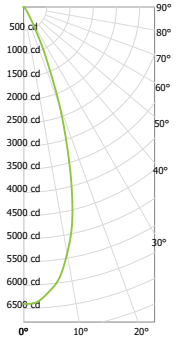
TSRA31BET

3.1" Track Spot Luminaire with Regressed Arm

Spectrum Lighting

TSRA31 21L 35K MD E1 BET xx

CANDLEPOWER CURVE
TEST SP-15009_2



INTENSITY
CANDELA
0° AZIMUTH

	0°
0°	6405
5°	6173
15°	3991
25°	975
35°	151
45°	49
55°	16
90°	1

ZONAL LUMENS

0° - 10°	575	25%
0° - 20°	1633	72%
0° - 30°	2099	92%
0° - 40°	2202	97%
0° - 60°	2255	99%
0° - 80°	2259	99%
0° - 90°	2261	100%
Total	2271	100%

SINGLE UNIT: PERFORMANCE
HORIZONTAL FOOTCANDLES
INITIAL DOWNLIGHT ONLY

Mounting Distance	FC at Beam Center	Diameter at Beam Angle	FC at Beam Edge
6.5 '	152 fc	4.0 '	66 fc
7.5 '	114 fc	4.6 '	50 fc
8.5 '	89 fc	5.2 '	39 fc
10.0 '	64 fc	6.2 '	28 fc
12.0 '	44 fc	7.4 '	19 fc
14.0 '	33 fc	8.6 '	14 fc
16.0 '	25 fc	9.9 '	11 fc
20.0 '	16 fc	12.3 '	7 fc

MULTIPLE UNITS: PERFORMANCE
80/50/20% REFLECTANCES
HORIZONTAL FOOTCANDLES AND WATTS/SQ FT

Ceiling Height	Fixture Spacing	RCR 3		RCR 5	
		FC +	W/Sq. Ft.	FC +	W/Sq. Ft.
12'	4'	138	1.22	115	1.11
15'	5'	99	0.87	63	0.60
18'	6'	62	0.55	62	0.59
Delivered Illuminance Rating: (DIR)		113 FC per W/Sq. Ft.		104 FC per W/Sq. Ft.	

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

Delivered Lumens: 2271
Luminaire Watts: 20
LER: 113.55

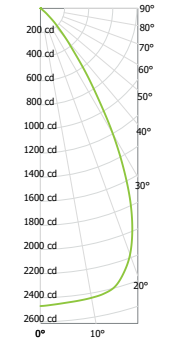
CP at 0° (Nadir): 6405
CRI: 80+

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

	0°
0°	2470
5°	2451
15°	2390
25°	1764
35°	670
45°	160
55°	19
90°	1

ZONAL LUMENS

0° - 10°	238	11%
0° - 20°	899	40%
0° - 30°	1677	74%
0° - 40°	2102	93%
0° - 60°	2250	99%
0° - 80°	2255	100%
0° - 90°	2256	100%
Total	2265	100%

SINGLE UNIT: PERFORMANCE
HORIZONTAL FOOTCANDLES
INITIAL DOWNLIGHT ONLY

Mounting Distance	FC at Beam Center	Diameter at Beam Angle	FC at Beam Edge
6.5 '	58 fc	7.4 '	19 fc
7.5 '	44 fc	8.5 '	14 fc
8.5 '	34 fc	9.7 '	11 fc
10.0 '	25 fc	11.4 '	8 fc
12.0 '	17 fc	13.7 '	6 fc
14.0 '	13 fc	16.0 '	4 fc
16.0 '	10 fc	18.2 '	3 fc
20.0 '	6 fc	22.8 '	2 fc

MULTIPLE UNITS: PERFORMANCE
80/50/20% REFLECTANCES
HORIZONTAL FOOTCANDLES AND WATTS/SQ FT

Ceiling Height	Fixture Spacing	RCR 2		RCR 4	
		FC +	W/Sq. Ft.	FC +	W/Sq. Ft.
9'	4'	148	1.30	96	0.95
12'	5'	81	0.71	71	0.71
15'	6'	56	0.49	39	0.39
Delivered Illuminance Rating: (DIR)		114 FC per W/Sq. Ft.		100 FC per W/Sq. Ft.	

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

Delivered Lumens: 2265
Luminaire Watts: 20
LER: 113.25

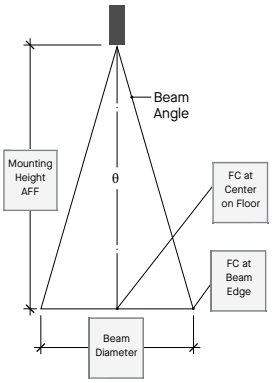
CP at 0° (Nadir): 2470
CRI: 80+

Beam Angle: 59°
Spacing Ratio: 0.95
Melanopic Ratio 0.58

CCT Multiplier: 30K x .93

HOW TO USE PERFORMANCE DATA

SINGLE UNIT



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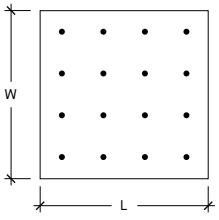

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- To estimate Watts/Sq. Ft.:
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