

ADDENDUM NO.: FOUR

DATE: 31 July 2013

PROJECT TITLE: **HORIZON GROUND AND FOURTH FLOOR UPFIT**

University of South Carolina
State Project No. H27-6081-AC
WTS Project No. 11700/ File 7.0

WTS FILE NO.: 11700 / 7.0

WRITTEN BY: John McLean, AIA. LEED AP
J. Sanders Tate, AIA LEED AP

TO: Prospective Bidders / Plan Holders

This addendum is issued pursuant to Article 1.1.1 of the AIA General Conditions of the Contract (A201) in connection with the revision of Bidding Documents which have been previously issued.

Addenda are issued prior to execution of Contract. All instructions contained herein shall be reflected in the Contract Sum and this Addendum will be made a part of the Contract Documents, if, as, and when a Construction Contract is awarded.

This Addendum forms a part of the Contract Documents and modifies the original documents dated 17 June 2013 as noted below. Acknowledge receipt of this Addendum in this space provided on the Bid Form. Failure to do so will subject the Bidder to disqualification.

This Addendum consists of 01 page and the following attachment(s):

SSOE Addendum 3.....51 pages

END OF ADDENDUM

ADDENDUM NO. 4

Date: July 31, 2013

RE: Watson Tate Savory Architects, Inc.
USC Horizon I Ground and Fourth Floors Upfit

To: Bidders: This addendum forms a part of the contract documents and modifies the original Bidding Documents dated June 17, 2013. Acknowledge receipt of this addendum in the space provided on the bid form.

From: SSOE Group
2520 Meridian Parkway, Suite 450
Durham, NC 27707
Phone: (919) 361-9606
Fax: (919) 484-8627

CLARIFICATIONS

Mechanical

Drawing M1.51

1. Add plan note 10 to read as follows: "RF-2 shall be modular air handling unit consisting of intake section and fan section (top discharge). Extend concrete pad as required to provide footprint 6" greater than EF-2 housing."

Electrical

Schneider Lighting Substitution Request – See attached for reference

Substitution request is acceptable with below comments.

1. B1
 - a. Lamps to be 25W T8
2. B2
 - a. Lamps to be 25W T8
 - b. Louver must be 24 cells
3. EXIT
 - a. Provide integral self-diagnostic per spec 16511.
4. All fixtures
 - a. Provide fuse option where available.

ADDENDUM NO. 4

CALD Lighting Substitution Request – See attached for reference

Substitution request is acceptable with below comments unless indicated below as “Not Acceptable”

1. A1
 - a. **Not Acceptable** – must be low profile one piece construction to match aesthetics of other floors
 - b. No UL information
2. A2
 - a. **Not Acceptable** - must be low profile one piece construction to match aesthetics of other floors
 - b. No UL information
3. E
 - a. Fixture taller than specified. Acceptable if can be coordinated properly with mechanical (Corridor H404A and bathroom vestibules)
4. H
 - a. **Not Acceptable** – minimal information on housing construction
 - b. No UL information.
 - c. Housing appears to be minimal with no framing of the lens. Aesthetics to match that of other floors (Focal Point Metro fixture)
5. J
 - a. Shall be programmed start ballast.
6. Exit
 - a. Provide self-diagnostic option.
7. All fixtures
 - a. Provide fuse option where available.

END OF ADDENDUM



SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase)

Project: _____ Substitution Request Number: _____

From: _____
To: _____ Date: _____

A/E Project Number: _____
Re: _____ Contract For: _____

Specification Title: _____ Description: _____
Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
Manufacturer: _____ Phone: _____
Address: _____
Trade Name: _____ Model No.: _____
Installer: _____ Phone: _____
Address: _____

History: ☐ New product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

☐ Point-by-point comparative data attached — REQUIRED BY A/E

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Architect: _____
Address: _____ Owner: _____
_____ Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

Savings to Owner for accepting substitution: _____ (\$ _____).

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase — Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

Telephone: _____

Attachments: ☐

A/E's REVIEW AND ACTION

- ☐ Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
- ☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
- ☐ Substitution rejected - Use specified materials.
- ☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ A/E
☐ Other:



Date: Jul 22, 2013

The Schneider Company
39A Pelham Davis Circle
Greenville SC 29615
Phone: (864) 675-9250
Fax: (864) 675-9640

Job Name
USC HORIZON GROUND & FOURTH FLOORS UPFIT
TSC13-21698
COLUMBIA SC

Bid Date
Aug 1, 2013

Submittal Date
Jul 22, 2013

Architect:
WATSON TATE SAVORY LIOLLIO ARCHITECTS - COLUMBIA
1316 WASHINGTON STREET
COLUMBIA SC 29201



Transmittal

The Schneider Company
 39A Pelham Davis Circle
 Greenville SC 29615
 Phone: (864) 675-9250

From: SPOOKY PALANZA

Project USC HORIZON GROUND & FOURTH FLOORS UPFIT
Quote# TSC13-21698
Location COLUMBIA SC
To WATSON TATE SAVORY LIOLLIO ARCHITECTS
 1316 WASHINGTON STREET
 COLUMBIA SC 29201
 Contact:

ATTACHED WE ARE SENDING YOU 0 COPIES OF THE FOLLOWING ITEMS:

- | | | |
|-----------------------------------|--|--------|
| ☐ Drawings | ☐ Specifications | Other: |
| ☐ Prints | ☐ Information | |
| ☐ Plans | ☒ Submittals | |

THESE ARE TRANSMITTED FOR:

- | | | |
|--|---|---------------------------------|
| ☒ Prior Approval | ☐ Resubmittal for Approval | ☐ Record |
| ☐ Approval | ☐ Corrections | Bids due on: |
| ☐ Approval as Submitted | ☐ Your Use | Other: |
| ☐ Approval as Noted | ☐ Review and Comment | |

Type	MFG	Part
A1	FINELITE	S16-WCB-2T5HO-DC-91W-OPEN-277-AC12"-FE-TITANIUM SILVER FINISH
A2	FINELITE	S16-WCB-2T5HO-DC-91W-OPEN-277-AC12"-FE-TITANIUM SILVER FINISH-0-10V DIM
B1	H.E. WILLIAMS	HE3G-D24-332-36S-EB8P2/1-UNV
	Item Note:	DUAL-LEVEL SWITCHED
B2	H.E. WILLIAMS	HE3G-D24-432-48S-EB8P2/2-UNV
	Item Note:	DUAL-LEVEL SWITCHED
D	H.E. WILLIAMS	PH60-132T-CS-EB1-UNV
E	H.E. WILLIAMS	PV45-126T-CS-EB1-UNV
G1	H.E. WILLIAMS	76-4-232-WG-7614-EB2-UNV
J	PMC LIGHTING	SLC-XX-T8-MWA-WHT-UNV
EXIT	H.E. WILLIAMS	EXIT/CA-XX-R-AF-BLK-EM



Jul 22, 2013

WATSON TATE SAVORY LIOLLIO ARCHITECTS - COLUMBIA
1316 WASHINGTON STREET
COLUMBIA SC 29201

RE: USC HORIZON GROUND & FOURTH FLOORS UPFIT
COLUMBIA SC

Type	MFG	Part
A1	FINELITE	S16-WCB-2T5HO-DC-91W-OPEN-277-AC12"-FE-TITANIUM SILVER FINISH
A2	FINELITE	S16-WCB-2T5HO-DC-91W-OPEN-277-AC12"-FE-TITANIUM SILVER FINISH-0-10V DIM
B1	H.E. WILLIAMS	HE3G-D24-332-36S-EB8P2/1-UNV
	Item Note:	DUAL-LEVEL SWITCHED
B2	H.E. WILLIAMS	HE3G-D24-432-48S-EB8P2/2-UNV
	Item Note:	DUAL-LEVEL SWITCHED
D	H.E. WILLIAMS	PH60-132T-CS-EB1-UNV
E	H.E. WILLIAMS	PV45-126T-CS-EB1-UNV
G1	H.E. WILLIAMS	76-4-232-WG-7614-EB2-UNV
J	PMC LIGHTING	SLC-XX-T8-MWA-WHT-UNV
EXIT	H.E. WILLIAMS	EXIT/CA-XX-R-AF-BLK-EM

Job Name:

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLIO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

S16-WCB-2T5HO-DC-91W-OPEN-277-
AC12"-FE-TITANIUM SILVER FINISH

Notes:

Type:**A1**

TSC13-21698

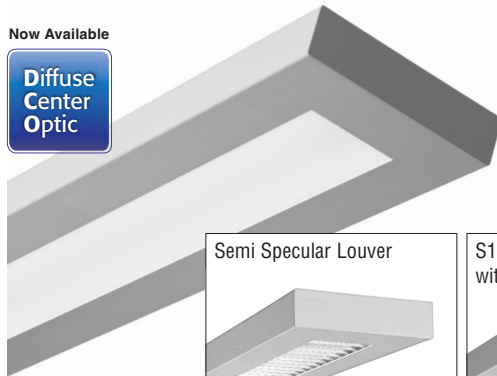


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FINELITE

Series 16 Technical Sheet

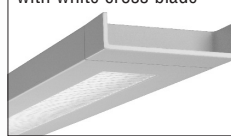
Now Available



Semi Specular Louver



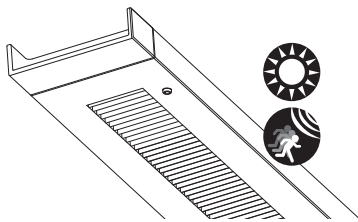
S16 with extended endcap with white cross blade

**DESCRIPTION**

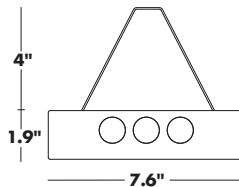
Series 16 is a low profile rectilinear form scaled to blend inconspicuously into any interior architecture. At just 7.6" by 1.9" this luminaire integrates exceptionally well into low ceiling environments.

Date Project Type

Comments

**INTEGRATED SENSORS:**

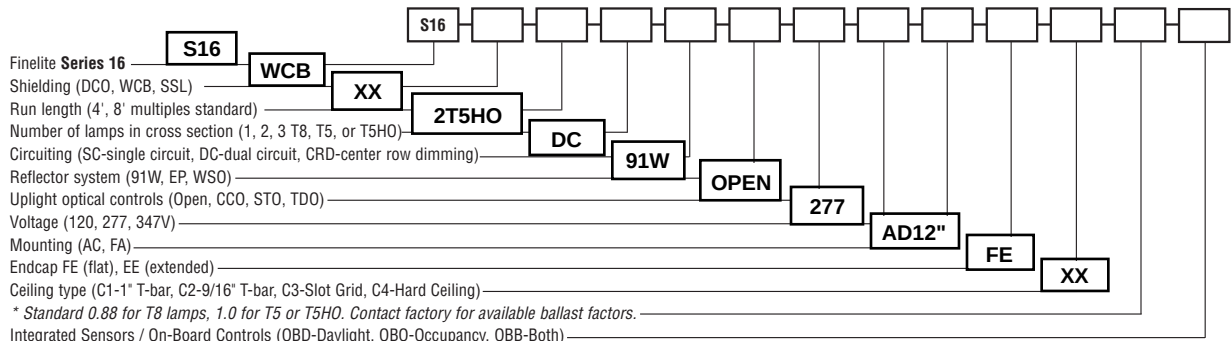
Series 16 can be specified with integrated daylight or occupancy sensors.

**DIMENSIONS / LAMPING:**

Available in 1, 2, or 3 T8, T5 or T5HO lamps.

**CONTROLLED CENTER OPTICS****SOFT TOP OPTICS****TOTALLY DIRECT OPTICS****ORDERING GUIDE**

Sample Number: S16 - WCB - 32' - 2T8 - SC - 91W - TDO - 277 - FA - C1 - FE - 0.88 - OBD

**TITANIUM SILVER FINISH**

Finelite, Inc. • 30500 Whipple Road • Union City, CA 94587-1530 • 510 / 441-1100 • Fax: 510 / 441-1510 • www.finelite.com

Due to continuing product improvements, Finelite reserves the right to change specifications without notice. Please visit www.finelite.com for most current data.

Job Name:

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

S16-WCB-2T5HO-DC-91W-OPEN-277-
AC12"-FE-TITANIUM SILVER FINISH

Notes:**Type:****A1**

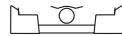
TSC13-21698



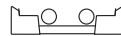
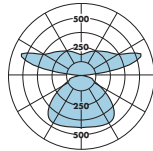
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FINELITE

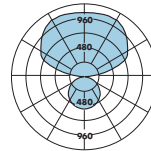
Series 16 Technical Sheet

PHOTOMETRY

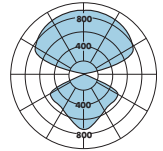
S16: 1 T8-WCB-WSO
Distribution: 59% Up / 41% Down
Efficiency: 83.8%
Peak Candela Value: 473@ 105°
LSI Report: 21895



S16: 2 T8-DCO-91W-Open
Distribution: 72% Up / 28% Down
Efficiency: 89.7%
Peak Candela Value: 1094@ 165°
LSI Report: 29710



S16: 2 T8-WCB-91W-Open
Distribution: 68% Up / 32% Down
Efficiency: 87.5%
Peak Candela Value: 888@ 165°
LSI Report: 21524

**CANDLEPOWER SUMMARY**

	0	22.5	45	67.5	90	Flux
0	431	431	431	431	431	
5	423	424	427	428	428	41
15	375	384	401	425	438	114
25	308	322	365	415	450	170
35	232	247	305	390	449	199
45	161	169	225	316	379	188
55	113	117	137	200	251	143
65	74	76	84	108	130	93
75	42	42	45	55	90	54
85	13	12	13	14	19	16
90	0	0	0	0	0	
95	18	110	106	82	75	107
105	66	148	360	455	473	313
115	117	175	287	394	432	284
125	161	204	280	322	319	234
135	193	224	262	283	278	194
145	204	222	243	251	247	148
155	201	210	221	223	221	100
165	192	193	196	197	195	56
175	179	177	177	177	177	17
180	173	173	173	173	173	

CANDLEPOWER SUMMARY

	0	22.5	45	67.5	90	Flux
0	547	547	547	547	547	
5	545	543	544	546	543	52
15	525	523	524	527	524	148
25	486	484	487	495	493	225
35	428	427	436	442	442	272
45	358	360	368	373	373	282
55	278	283	285	286	285	253
65	197	196	195	194	193	193
75	119	108	107	106	104	114
85	30	29	27	26	25	32
90	0	0	0	0	0	
95	37	104	104	97	94	112
105	200	328	459	464	463	414
115	383	514	633	750	783	609
125	562	673	781	851	882	677
135	726	798	910	967	990	681
145	864	906	996	1052	1070	612
155	973	991	1045	1083	1093	478
165	1048	1051	1073	1085	1094	302
175	1088	1080	1085	1082	1084	105
180	1084	1084	1084	1084	1084	

CANDLEPOWER SUMMARY

	0	22.5	45	67.5	90	Flux
0	776	776	776	776	776	
5	760	759	759	751	747	72
15	669	651	654	663	669	185
25	539	523	547	590	615	257
35	395	393	442	520	572	287
45	268	276	332	445	547	282
55	186	190	219	374	551	257
65	119	121	137	230	429	189
75	63	64	72	99	188	97
85	16	19	23	29	37	28
90	0	0	0	0	0	
95	41	94	92	82	79	102
105	188	307	409	414	415	374
115	354	461	598	694	717	561
125	516	601	713	779	801	615
135	659	721	797	838	841	599
145	764	801	843	874	876	522
155	836	859	872	883	885	401
165	877	883	891	888	888	251
175	889	880	883	886	888	86
180	881	881	881	881	881	

— Refer to www.finelite.com for additional photometry and product information.

SPECIFICATIONS

CONSTRUCTION: Body is 20-gauge die-formed steel with 18-gauge die-formed internal joiner system, plug-together wiring standard. All components are hard-tooled to tolerances of 0.010".

ENDCAPS: (FE) Flat endcap standard, 14 gauge die-formed steel, adds 0.1" at each end. Optional: (EE) Extended Endcap, aluminum die-cast endcap with 0.100" reveal, adds 2.5" at each end.

REFLECTORS: (91W) Die-formed pre-painted aluminum, 91% reflective white. Optional: (EP) Extended Performance reflector system (1T5HO only). (WSO) Wide Spread Optic for 1T8 or 1T5HO. Optional Dust Cover for T8 lamps only. Contact factory.

UPLIGHT OPTICAL OPTIONS:

Open	No optical control.
CCO	Controlled Center Optics, covers center lamp, 100% downlight (center only); 96% reflective white paint.
STO	Soft Top Optics, 0.063" perforations cover the top surface; 96% reflective white paint.
TDO	Totally Direct Optic, solid top above lamps, 0/100; 96% reflective white paint.

SHIELDING OPTIONS:

DCO	Diffuse Center Optic, 73% transmissive, 99% diffusion.
WCB	White Cross Blade Baffle, 87 cell baffles spaced 0.5" apart and finished with 96% reflective white paint.

SSL Semi Specular Louver, 44 cell louvers spaced 1.0" apart.

ACCESSORY: Optional Dust Cover, clear acrylic, T8 lamps only. NOTE: Will significantly impact light level performance. Contact Factory.

ELECTRICAL: 120 or 277V prewired. Fixture and electrical components are UL/C-UL listed and fixture will bear UL/C-UL labels. Optional Adders: Low-profile 347V ballast, prewired dual circuit, emergency circuits, low-profile emergency battery packs. Contact factory.

INTEGRATED SENSORS: Series 16 can be specified with integrated sensors from Wattstopper, Philips, and Lutron. **Daylight Sensors:** Wattstopper sensors can be supplied with either a closed loop 0-10v dimming (handheld remote supplied) or closed loop single zone switching system. The Lutron sensor is directional and for use with Ecosystem ballasts. The Philips sensor is a closed loop 0-10v sensor for use with Advance Mark 7 ballasts. **Occupancy Sensor:** Wattstopper occupancy sensor is a PIR sensor with additional hold-off daylight feature.

LAMPING: Available in 1, 2 or 3 T8, T5 or T5HO lamp cross sections.

BALLAST: Electronic instant-start ballast <10% THD, 0.88 BF standard for T8 lamps. Electronic rapid-start ballasts <10% THD, 1.0 BF standard for T5/T5HO lamps. Optional adders: rapid-start ballasts (standard

for T5/T5HO), 347V, emergency battery packs, dimming ballasts (controls by others). Requires low-profile ballasts and battery packs.

MOUNTING OPTIONS: (FA) 50" fully Adjustable aircraft cable standard with safety stop. Contact factory for additional lengths up to 150". Mounting connects to fixture with factory-installed curved balancer, which allows for side-to-side fixture leveling and locks it into place. Note: Curved balancer assembly is 4" above top of fixture. Optional (AC) semi-adjustable aircraft cable ($\pm 0.5"$) in lengths of 12", 15", 18", 21", 24", 27", 30", and 36".

SUPPORT CABLES: Plated steel cable and hardware.

FEED: 18 gauge straight cord. 14 gauge feed cord used when fixture current exceeds 5 amps. Optional Adders: Coil Cord Feed.

FINISHES: Finelite Signal White standard. Optional Adders: 185 colors available from Tiger Drylac's RAL color chart.

LENGTHS: 4' and 8' section lengths can be combined to make longer runs. Contact factory for additional lengths.

WEIGHT: Fixture weight = 3.0 lb/ft.

WALL MOUNT: Companion wall mount available.

Job Name:

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLIO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

S16-WCB-2T5HO-DC-91W-OPEN-277-AC12"-
FE-TITANIUM SILVER FINISH-0-10V DIM

Notes:

Type:**A2**

TSC13-21698

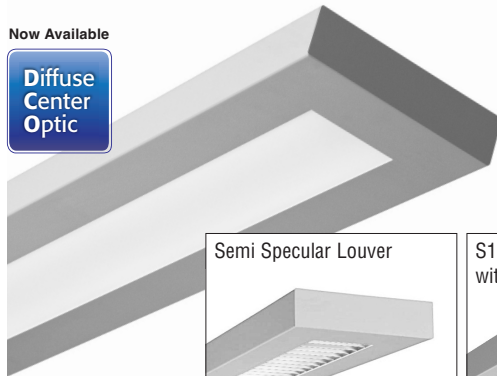


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FINELITE

Series 16 Technical Sheet

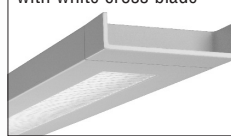
Now Available



Semi Specular Louver



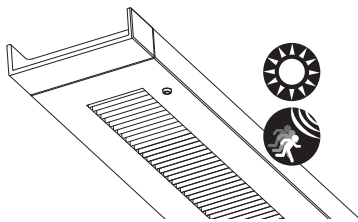
S16 with extended endcap with white cross blade

**DESCRIPTION**

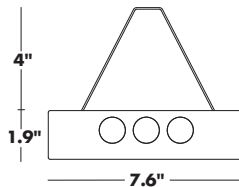
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Date Project Type

Comments

**INTEGRATED SENSORS:**

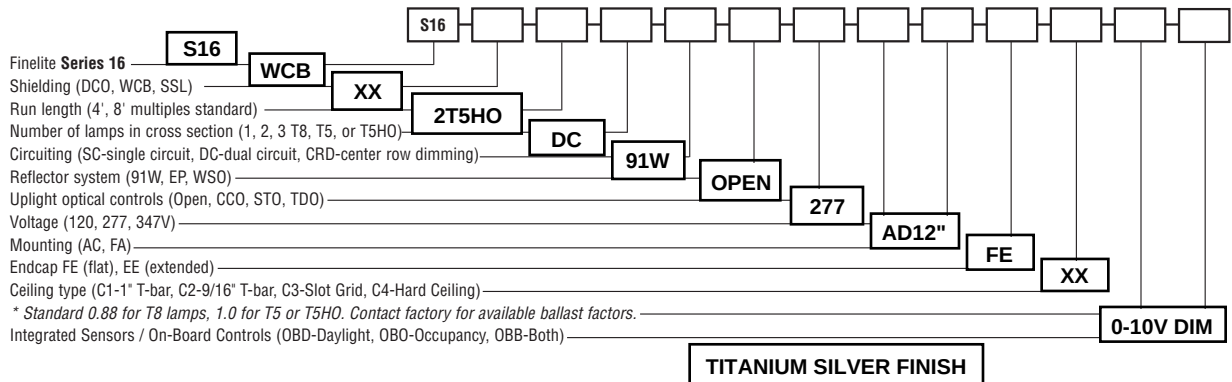
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**CONTROLLED CENTER OPTICS****SOFT TOP OPTICS****TOTALLY DIRECT OPTICS****ORDERING GUIDE**

Sample Number: S16 - WCB - 32' - 2T8 - SC - 91W - TDO - 277 - FA - C1 - FE - 0.88 - OBD



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Job Name:

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

S16-WCB-2T5HO-DC-91W-OPEN-277-AC12"-
FE-TITANIUM SILVER FINISH-0-10V DIM

Notes:**Type:****A2**

TSC13-21698



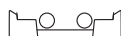
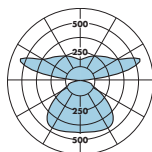
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FINELITE

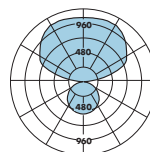
Series 16 Technical Sheet

PHOTOMETRY

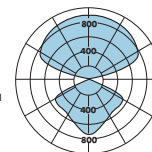
S16: 1 T8-WCB-WSO
Distribution: 59% Up / 41% Down
Efficiency: 83.8%
Peak Candela Value: 473@ 105°
LSI Report: 21895



S16: 2 T8-DCO-91W-Open
Distribution: 72% Up / 28% Down
Efficiency: 89.7%
Peak Candela Value: 1094@ 165°
LSI Report: 29710



S16: 2 T8-WCB-91W-Open
Distribution: 68% Up / 32% Down
Efficiency: 87.5%
Peak Candela Value: 888@ 165°
LSI Report: 21524

**CANDLEPOWER SUMMARY**

	0	22.5	45	67.5	90	Flux
0	431	431	431	431	431	
5	423	424	427	428	428	41
15	375	384	401	425	438	114
25	308	322	365	415	450	170
35	232	247	305	390	449	199
45	161	169	225	316	379	188
55	113	117	137	200	251	143
65	74	76	84	108	130	93
75	42	42	45	55	90	54
85	13	12	13	14	19	16
90	0	0	0	0	0	
95	18	110	106	82	75	107
105	66	148	360	455	473	313
115	117	175	287	394	432	284
125	161	204	280	322	319	234
135	193	224	262	283	278	194
145	204	222	243	251	247	148
155	201	210	221	223	221	100
165	192	193	196	197	195	56
175	179	177	177	177	177	17
180	173	173	173	173	173	

CANDLEPOWER SUMMARY

	0	22.5	45	67.5	90	Flux
0	547	547	547	547	547	
5	545	543	544	546	543	52
15	525	523	524	527	524	148
25	486	484	487	495	493	225
35	428	427	436	442	442	272
45	358	360	368	373	373	282
55	278	283	285	286	285	253
65	197	196	195	194	193	193
75	119	108	107	106	104	114
85	30	29	27	26	25	32
90	0	0	0	0	0	
95	37	104	104	97	94	112
105	200	328	459	464	463	414
115	383	514	633	750	783	609
125	562	673	781	851	882	677
135	726	798	910	967	990	681
145	864	906	996	1052	1070	612
155	973	991	1045	1083	1093	478
165	1048	1051	1073	1085	1094	302
175	1088	1080	1085	1082	1084	105
180	1084	1084	1084	1084	1084	

CANDLEPOWER SUMMARY

	0	22.5	45	67.5	90	Flux
0	776	776	776	776	776	
5	760	759	759	751	747	72
15	669	651	654	663	669	185
25	539	523	547	590	615	257
35	395	393	442	520	572	287
45	268	276	332	445	547	282
55	186	190	219	374	551	257
65	119	121	137	230	429	189
75	63	64	72	99	188	97
85	16	19	23	29	37	28
90	0	0	0	0	0	
95	41	94	92	82	79	102
105	188	307	409	414	415	374
115	354	461	598	694	717	561
125	516	601	713	779	801	615
135	659	721	797	838	841	599
145	764	801	843	874	876	522
155	836	859	872	883	885	401
165	877	883	891	888	888	251
175	889	880	883	886	888	86
180	881	881	881	881	881	

— Refer to www.finelite.com for additional photometry and product information.

SPECIFICATIONS

CONSTRUCTION: Body is 20-gauge die-formed steel with 18-gauge die-formed internal joiner system, plug-together wiring standard. All components are hard-tooled to tolerances of 0.010".

ENDCAPS: (FE) Flat endcap standard, 14 gauge die-formed steel, adds 0.1" at each end. Optional: (EE) Extended Endcap, aluminum die-cast endcap with 0.100" reveal, adds 2.5" at each end.

REFLECTORS: (91W) Die-formed pre-painted aluminum, 91% reflective white. Optional: (EP) Extended Performance reflector system (1T5HO only). (WSO) Wide Spread Optic for 1T8 or 1T5HO. Optional Dust Cover for T8 lamps only. Contact factory.

UPLIGHT OPTICAL OPTIONS:

Open	No optical control.
CCO	Controlled Center Optics, covers center lamp, 100% downlight (center only); 96% reflective white paint.
STO	Soft Top Optics, 0.063" perforations cover the top surface; 96% reflective white paint.
TDO	Totally Direct Optic, solid top above lamps, 0/100; 96% reflective white paint.

SHIELDING OPTIONS:

DCO	Diffuse Center Optic, 73% transmissive, 99% diffusion.
WCB	White Cross Blade Baffle, 87 cell baffles spaced 0.5" apart and finished with 96% reflective white paint.

SSL Semi Specular Louver, 44 cell louvers spaced 1.0" apart.

ACCESSORY: Optional Dust Cover, clear acrylic, T8 lamps only. NOTE: Will significantly impact light level performance. Contact Factory.

ELECTRICAL: 120 or 277V prewired. Fixture and electrical components are UL/C-UL listed and fixture will bear UL/C-UL labels. Optional Adders: Low-profile 347V ballast, prewired dual circuit, emergency circuits, low-profile emergency battery packs. Contact factory.

INTEGRATED SENSORS: Series 16 can be specified with integrated sensors from Wattstopper, Philips, and Lutron. **Daylight Sensors:** Wattstopper sensors can be supplied with either a closed loop 0-10v dimming (handheld remote supplied) or closed loop single zone switching system. The Lutron sensor is directional and for use with Ecosystem ballasts. The Philips sensor is a closed loop 0-10v sensor for use with Advance Mark 7 ballasts. **Occupancy Sensor:** Wattstopper occupancy sensor is a PIR sensor with additional hold-off daylight feature.

LAMPING: Available in 1, 2 or 3 T8, T5 or T5HO lamp cross sections.

BALLAST: Electronic instant-start ballast <10% THD, 0.88 BF standard for T8 lamps. Electronic rapid-start ballasts <10% THD, 1.0 BF standard for T5/T5HO lamps. Optional adders: rapid-start ballasts (standard

for T5/T5HO), 347V, emergency battery packs, dimming ballasts (controls by others). Requires low-profile ballasts and battery packs.

MOUNTING OPTIONS: (FA) 50" fully Adjustable aircraft cable standard with safety stop. Contact factory for additional lengths up to 150". Mounting connects to fixture with factory-installed curved balancer, which allows for side-to-side fixture leveling and locks it into place. Note: Curved balancer assembly is 4" above top of fixture. Optional (AC) semi-adjustable aircraft cable ($\pm 0.5"$) in lengths of 12", 15", 18", 21", 24", 27", 30", and 36".

SUPPORT CABLES: Plated steel cable and hardware.

FEED: 18 gauge straight cord. 14 gauge feed cord used when fixture current exceeds 5 amps. Optional Adders: Coil Cord Feed.

FINISHES: Finelite Signal White standard. Optional Adders: 185 colors available from Tiger Drylac's RAL color chart.

LENGTHS: 4' and 8' section lengths can be combined to make longer runs. Contact factory for additional lengths.

WEIGHT: Fixture weight = 3.0 lb/ft.

WALL MOUNT: Companion wall mount available.

Job Name:

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

HE3G-D24-332-36S-EB8P2/1-UNV

Notes: DUAL-LEVEL SWITCHED

Type:**B1**

TSC13-21698

PARABOLIC 3" LOUVER**HE3****SUBMITTAL:****2x4****JOB:****TYPE:****VOLTAGE:****EXAMPLE****HE3 G - D 2 4 - 3 32 - 36 S - OPTIONS - EB3 - UNV**

SERIES

CEILING

AIR

NOM.

NOM.

TOTAL

WATTAGE/

LAMPS

TYPE

LOUVER

LOUVER

CELLS

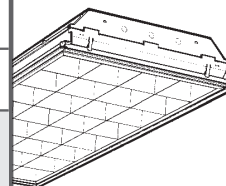
FINISH

OPTIONS

BALLAST

TYPE

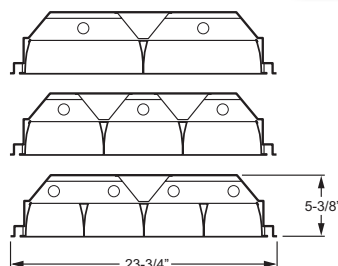
VOLTAGE



LOUVER
Patented
Inverted

**FEATURES**

- ▶ Patented, inverted louver design provides greater efficiency, crisp lines, and eliminates crazing at bottom edge of louver.
- ▶ Semi-specular, low-iridescent, anodized aluminum louver in choice of cell configuration ensures superior, enduring performance. Specular or white louver is also available.
- ▶ Full 3" parabolic louver aids in glare reduction.
- ▶ Ballast secured by two captive bolts and nuts to ensure a tight, reliable fit for maximum heat dissipation.
- ▶ All parts painted after fabrication to facilitate installation, increase efficiency, and inhibit corrosion.
- ▶ This fixture is proudly made in the USA.

**SPECIFICATIONS**

Housing – 22-gauge die-formed C.R.S.

Parabolic Louver –

Semi-specular, low-iridescent anodized aluminum standard with tab-and-slot construction. Patented (No. 5,678,922) inverted parabolic louver design.

Closed top reflects light instead of trapping it within the louver.

Forming the louver at top produces greater efficiency and less glare.

Patent No. 5,678,922.

Thin bottom edge is the thickness of two layers of material—prevents crazing at the bottom edge.

Door Frame – Concealed 22-gauge C.R.S. frame with integral hinges and spring steel latches completely hidden in black reveal.

Finish – 92% minimum average reflective white polyester powder coat bonded to phosphate-free, multi-stage pretreated metal.

Electrical – Electronic ballast standard, instant start T8, program start T5, rated Class P.

Mounting – NEMA Type "G" standard. NEMA Type "SS" (earthquake clips included) and NEMA Type "F" available.

Labels – UL/CUL listed as recessed fluorescent luminaire suitable for dry or damp locations.

ORDERING INFORMATION**SERIES****HE3** Parabolic 3" Louver**CEILING TYPE****G** NEMA Type "G"**F** NEMA Type "F"**SG** NEMA Type "SS" (earthquake clips included)**AIR FUNCTION**

See back for air function details.

D Static—no air capabilities—no heat extract through lamp cavity—no side slots**E** No heat extract through lamp cavity—supply/return air through side slots**F** Side slots for supply or return air and non-adjustable heat extract**G** Non-adjustable heat extract—no side slots in fixture housing**X** Side slots for supply or return air, non-adjustable heat extract, adjustable air pattern control vanes**Z** Side slots for supply or return air with adjustable air pattern control vanes—no heat extract capability**NOMINAL WIDTH****2** 2'**NOMINAL LENGTH****4** 4'**TOTAL LAMPS****2, 3, or 4****LAMP WATTAGE/TYPE****28T5S** 4', 28-watt T5**32** 4', 32-watt T8**54T5H** 4', 54-watt T5HO**LOUVER CELLS (Width x Length)****2- or 4-LAMP OPTIONS****26** 2 x 6, 12-cell**27** 2 x 7, 14-cell**28** 2 x 8, 16-cell**46** 4 x 6, 24-cell**47** 4 x 7, 28-cell**48** 4 x 8, 32-cell**3-LAMP OPTIONS****36** 3 x 6, 18-cell**37** 3 x 7, 21-cell**38** 3 x 8, 24-cell**39** 3 x 9, 27-cell**LOUVER FINISH****S** Semi-specular silver aluminum (standard)**M** Specular silver aluminum**W** White aluminum**OPTIONS**

For generic EM ballast options (must specify voltage), see Information section.

CA' Clear stippled acrylic overlay, .040" thick¹**WA'** White acrylic overlay, .040" thick¹**F338** 6', 3/8" flex, 3-conductor, No. 18 AWG (see Information section for wiring options)**BALLAST TYPE**

See Information section for complete ballast offering.

EB2 2-lamp electronic ballast**EB3** 3-lamp electronic ballast**EB4** 4-lamp electronic ballast**EB2/1** (1) 2-lamp and (1) 1-lamp electronic ballast**EB2/2** (2) 2-lamp electronic ballast**VOLTAGE****EB8P2/1****120** 120V**277** 277V**UNV** 120-277V**347** 347V¹ Static (D) units only.

**Job Name:**

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

HE3G-D24-332-36S-EB8P2/1-UNV

Type:**B1**

Notes: DUAL-LEVEL SWITCHED

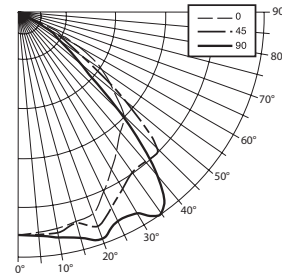
TSC13-21698

HE3**PARABOLIC 3" LOUVER****2x4****PHOTOMETRY INFORMATION**Catalog #: **HE3G-D24-332-36S-EB3****TEST REPORT INFORMATION**

- ▶ Test Report#: 10164.0
- ▶ Date: 01/12/99
- ▶ Lamp Type: F32T8/835/RS
- ▶ Lamp Quantity: 3

CANDLEPOWER DISTRIBUTION

Vertical Angle	Horizontal Angle			Zonal Lumens
	0°	45°	90°	
0°	2793.	2793.	2793.	
5°	2773.	2792.	2806.	266.8
15°	2710.	2730.	2922.	792.8
25°	2482.	2705.	2889.	1246.9
35°	2113.	2448.	3077.	1593.7
45°	1855.	2446.	1846.	1621.6
55°	1299.	1025.	681.	933.0
65°	412.	277.	189.	303.6
75°	49.	44.	42.	48.0
85°	12.	15.	12.	15.8
90°	0.	0.	0.	

**LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixture
0 - 30	2306.	26.1	33.8
0 - 40	3900.	44.1	57.2
0 - 60	6455.	72.9	94.6
0 - 90	6822.	77.1	100.0
Total Luminaire:			
0 - 180	6822.	77.1	100.0
Total Luminaire Optical Efficiency: 77.1%			
IES Spacing Criteria: End = 1.2			
Across = 1.6			

ZONAL CAVITY COEFFICIENTS

	Ceiling	.80			.70			.50		
	Wall	.70	.50	.30	.70	.50	.30	.50	.30	.10
Room Cavity Ratio	0	.92	.92	.92	.90	.90	.90	.86	.86	.86
	1	.86	.83	.81	.84	.82	.80	.79	.77	.75
	2	.81	.76	.72	.79	.74	.71	.72	.69	.66
	3	.75	.69	.64	.73	.67	.63	.65	.61	.58
	4	.69	.62	.56	.68	.61	.56	.59	.55	.51
	5	.64	.56	.50	.63	.55	.49	.53	.48	.45
	6	.59	.50	.44	.58	.50	.44	.48	.43	.39
	7	.55	.45	.39	.53	.45	.39	.43	.38	.35
	8	.50	.40	.34	.49	.40	.34	.39	.34	.30
	9	.46	.36	.30	.45	.36	.30	.35	.30	.26
	10	.43	.33	.27	.42	.32	.27	.32	.26	.23

Effective Floor Cavity Reflectance = .20

QUANTITY ESTIMATOR

Room Size	±40 fc.	±60 fc.	±80 fc.
15' x 15' (225 sq. ft.)	4	5	6
30' x 30' (900 sq. ft.)	9	12	16
50' x 50' (2,500 sq. ft.)	20	30	36

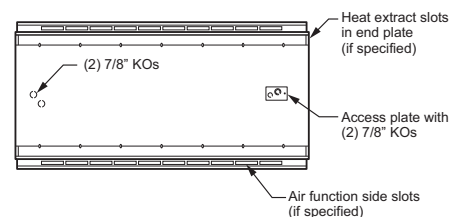
Calculations based on standard reflectance of 80/50/20 and a light loss factor of .85 with a 9'-0" ceiling height.

FIXTURE DETAILS**PARABOLIC AIR FUNCTIONS**

TYPE D		Static, no air capabilities.
TYPE F TYPE X		Side slots for supply or return air and non-adjustable heat extract. Type X available with adjustable air control vanes.
TYPE G		No side slots in fixture housing, non-adjustable heat extract.
TYPE E TYPE Z		Side slots for supply or return air, no heat extract capability. Type Z has adjustable air pattern control vanes.

AIR FUNCTION CODE

- "D" style static fixtures are UL listed as recessed fluorescent fixture suitable for dry or damp locations.
- All air handling styles are UL listed as recessed fluorescent fixture suitable for air handling use, for dry locations only.
- Select air function required from table. If function other than style "D" is required, change letter prefix to required function. (Example: If unit with supply/return air through side slots with adjustable air pattern control vane and non-adjustable heat extract through lamp cavity required, change "D" to "X" = HE3G-X24-432-48S).
- All of the air functions have full floating louver effect with black reveal around the entire perimeter of the louver.

BACK VIEW**INSTALLATION DETAILS**

NEMA Type "F" – Overall trim dimensions: 25-5/16" x 49-5/16". For individual mounting recommended ceiling opening: 24-3/8" x 48-3/8". For continuous row mounting, add 49-5/16" for each additional fixture to obtain ceiling opening. 1-5/16" between end plates. Swing-out bracket vertical adjust: 1-1/4" minimum to 4-3/8" maximum.

NEMA Type "SS"
9/16" wide slot grid – Bottom of louver is 5/16" below bottom of fixture housing and is flush with the ceiling plane.

Job Name:

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

HE3G-D24-432-48S-EB8P2/2-UNV

Notes: DUAL-LEVEL SWITCHED

Type:**B2**

TSC13-21698

PARABOLIC 3" LOUVER**HE3****SUBMITTAL:****2x4****JOB:****TYPE:****VOLTAGE:****EXAMPLE****HE3 G - D 2 4 - 3 32 - 36 S - OPTIONS - EB3 - UNV**

SERIES

CEILING

AIR

NOM.

NOM.

TOTAL

WATTAGE/

LAMPS

TYPE

LOUVER

LOUVER

CELLS

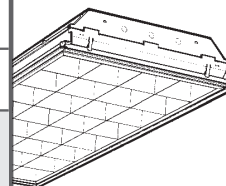
FINISH

OPTIONS

BALLAST

TYPE

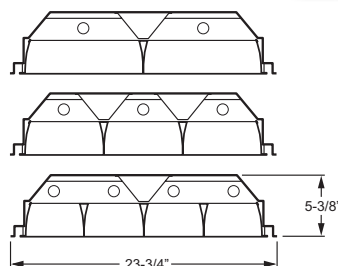
VOLTAGE



LOUVER
Patented
Inverted

**FEATURES**

- ▶ Patented, inverted louver design provides greater efficiency, crisp lines, and eliminates crazing at bottom edge of louver.
- ▶ Semi-specular, low-iridescent, anodized aluminum louver in choice of cell configuration ensures superior, enduring performance. Specular or white louver is also available.
- ▶ Full 3" parabolic louver aids in glare reduction.
- ▶ Ballast secured by two captive bolts and nuts to ensure a tight, reliable fit for maximum heat dissipation.
- ▶ All parts painted after fabrication to facilitate installation, increase efficiency, and inhibit corrosion.
- ▶ This fixture is proudly made in the USA.

**SPECIFICATIONS**

Housing – 22-gauge die-formed C.R.S.

Parabolic Louver –

Semi-specular, low-iridescent anodized aluminum standard with tab-and-slot construction. Patented (No. 5,678,922) inverted parabolic louver design.

Closed top reflects light instead of trapping it within the louver.

Forming the louver at top produces greater efficiency and less glare.

Patent No. 5,678,922.

Thin bottom edge is the thickness of two layers of material—prevents crazing at the bottom edge.

Door Frame – Concealed 22-gauge C.R.S. frame with integral hinges and spring steel latches completely hidden in black reveal.

Finish – 92% minimum average reflective white polyester powder coat bonded to phosphate-free, multi-stage pretreated metal.

Electrical – Electronic ballast standard, instant start T8, program start T5, rated Class P.

Mounting – NEMA Type "G" standard. NEMA Type "SS" (earthquake clips included) and NEMA Type "F" available.

Labels – UL/CUL listed as recessed fluorescent luminaire suitable for dry or damp locations.

ORDERING INFORMATION**SERIES****HE3** Parabolic 3" Louver**CEILING TYPE****G** NEMA Type "G"**F** NEMA Type "F"**SG** NEMA Type "SS" (earthquake clips included)**AIR FUNCTION**

See back for air function details.

D Static—no air capabilities—no heat extract through lamp cavity—no side slots**E** No heat extract through lamp cavity—supply/return air through side slots**F** Side slots for supply or return air and non-adjustable heat extract**G** Non-adjustable heat extract—no side slots in fixture housing**X** Side slots for supply or return air, non-adjustable heat extract, adjustable air pattern control vanes**Z** Side slots for supply or return air with adjustable air pattern control vanes—no heat extract capability**NOMINAL WIDTH****2** 2'**NOMINAL LENGTH****4** 4'**TOTAL LAMPS****2, 3, or 4****LAMP WATTAGE/TYPE****28T5S** 4', 28-watt T5**32** 4', 32-watt T8**54T5H** 4', 54-watt T5HO**LOUVER CELLS (Width x Length)****2- or 4-LAMP OPTIONS****26** 2 x 6, 12-cell**27** 2 x 7, 14-cell**28** 2 x 8, 16-cell**46** 4 x 6, 24-cell**47** 4 x 7, 28-cell**48** 4 x 8, 32-cell**3-LAMP OPTIONS****36** 3 x 6, 18-cell**37** 3 x 7, 21-cell**38** 3 x 8, 24-cell**39** 3 x 9, 27-cell**LOUVER FINISH****S** Semi-specular silver aluminum (standard)**M** Specular silver aluminum**W** White aluminum**OPTIONS**

For generic EM ballast options (must specify voltage), see Information section.

CA' Clear stippled acrylic overlay, .040" thick¹**WA'** White acrylic overlay, .040" thick¹**F338** 6', 3/8" flex, 3-conductor, No. 18 AWG (see Information section for wiring options)**BALLAST TYPE**

See Information section for complete ballast offering.

EB2 2-lamp electronic ballast**EB3** 3-lamp electronic ballast**EB4** 4-lamp electronic ballast**EB2/1** (1) 2-lamp and (1) 1-lamp electronic ballast**EB2/2** (2) 2-lamp electronic ballast**VOLTAGE****EB8P2/2****120** 120V**277** 277V**UNV** 120-277V**347** 347V¹ Static (D) units only.

Job Name:
 USC HORIZON GROUND & FOURTH FLOORS
 UPFIT
 Architect: WATSON TATE SAVORY LIOLLO
 ARCHITECTS - COLUMBIA (COLUMBIA)
Catalog Number:

HE3G-D24-432-48S-EB8P2/2-UNV

Type:**B2**

Notes: DUAL-LEVEL SWITCHED

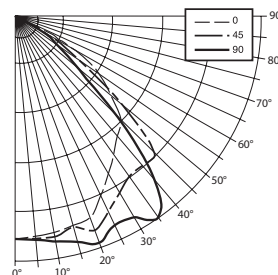
TSC13-21698

HE3**PARABOLIC 3" LOUVER****2x4****PHOTOMETRY INFORMATION**Catalog #: **HE3G-D24-332-36S-EB3****TEST REPORT INFORMATION**

- ▶ Test Report#: 10164.0
- ▶ Date: 01/12/99
- ▶ Lamp Type: F32T8/835/RS
- ▶ Lamp Quantity: 3

CANDLEPOWER DISTRIBUTION

Vertical Angle	Horizontal Angle			Zonal Lumens
	0°	45°	90°	
0°	2793.	2793.	2793.	
5°	2773.	2792.	2806.	266.8
15°	2710.	2730.	2922.	792.8
25°	2482.	2705.	2889.	1246.9
35°	2113.	2448.	3077.	1593.7
45°	1855.	2446.	1846.	1621.6
55°	1299.	1025.	681.	933.0
65°	412.	277.	189.	303.6
75°	49.	44.	42.	48.0
85°	12.	15.	12.	15.8
90°	0.	0.	0.	

**LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixture
0 - 30	2306.	26.1	33.8
0 - 40	3900.	44.1	57.2
0 - 60	6455.	72.9	94.6
0 - 90	6822.	77.1	100.0
Total Luminaire:			
0 - 180	6822.	77.1	100.0
Total Luminaire Optical Efficiency: 77.1%			
IES Spacing Criteria: End = 1.2			
Across = 1.6			

ZONAL CAVITY COEFFICIENTS

	Ceiling	.80			.70			.50		
	Wall	.70	.50	.30	.70	.50	.30	.50	.30	.10
Room Cavity Ratio	0	.92	.92	.92	.90	.90	.90	.86	.86	.86
	1	.86	.83	.81	.84	.82	.80	.79	.77	.75
	2	.81	.76	.72	.79	.74	.71	.72	.69	.66
	3	.75	.69	.64	.73	.67	.63	.65	.61	.58
	4	.69	.62	.56	.68	.61	.56	.59	.55	.51
	5	.64	.56	.50	.63	.55	.49	.53	.48	.45
	6	.59	.50	.44	.58	.50	.44	.48	.43	.39
	7	.55	.45	.39	.53	.45	.39	.43	.38	.35
	8	.50	.40	.34	.49	.40	.34	.39	.34	.30
	9	.46	.36	.30	.45	.36	.30	.35	.30	.26
	10	.43	.33	.27	.42	.32	.27	.32	.26	.23

Effective Floor Cavity Reflectance = .20

QUANTITY ESTIMATOR

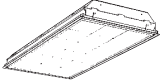
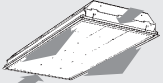
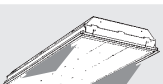
Room Size	±40 fc.	±60 fc.	±80 fc.
15' x 15' (225 sq. ft.)	4	5	6
30' x 30' (900 sq. ft.)	9	12	16
50' x 50' (2,500 sq. ft.)	20	30	36

 Calculations based on standard reflectance of 80/50/20
 and a light loss factor of .85 with a 9'-0" ceiling height.
FIXTURE DETAILS**INSTALLATION DETAILS**

NEMA Type "F" – Overall trim dimensions: 25-5/16" x 49-5/16". For individual mounting recommended ceiling opening: 24-3/8" x 48-3/8". For continuous row mounting, add 49-5/16" for each additional fixture to obtain ceiling opening. 1-5/16" between end plates. Swing-out bracket vertical adjust: 1-1/4" minimum to 4-3/8" maximum.

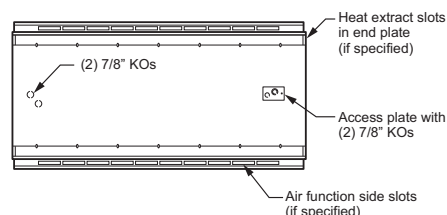
NEMA Type "SS"
9/16" wide slot grid – Bottom of louver is 5/16" below bottom of fixture housing and is flush with the ceiling plane.

PARABOLIC AIR FUNCTIONS

TYPE D		Static, no air capabilities.
TYPE F TYPE X		Side slots for supply or return air and non-adjustable heat extract. Type X available with adjustable air control vanes.
TYPE G		No side slots in fixture housing, non-adjustable heat extract.
TYPE E TYPE Z		Side slots for supply or return air, no heat extract capability. Type Z has adjustable air pattern control vanes.

AIR FUNCTION CODE

- "D" style static fixtures are UL listed as recessed fluorescent fixture suitable for dry or damp locations.
- All air handling styles are UL listed as recessed fluorescent fixture suitable for air handling use, for dry locations only.
- Select air function required from table. If function other than style "D" is required, change letter prefix to required function. (Example: If unit with supply/return air through side slots with adjustable air pattern control vane and non-adjustable heat extract through lamp cavity required, change "D" to "X" = HE3G-X24-432-48S).
- All of the air functions have full floating louver effect with black reveal around the entire perimeter of the louver.

BACK VIEW

**Job Name:**

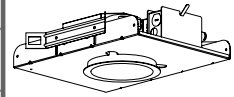
USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

PH60-132T-CS-EB1-UNV

Notes:**Type:****D**

TSC13-21698

6" ROUND HORIZONTAL LAMP DOWNLIGHT**PH60****SUBMITTAL:****JOB:****TYPE:****VOLTAGE:****EXAMPLE****PH60 - 2 26Q - CS - OPTIONS - EB2 - UNV**

SERIES

NUMBER

WATTAGE/

TYPE

REFLECTOR

FINISH

OPTIONS

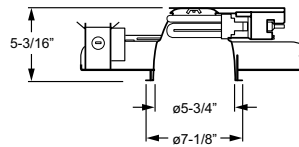
BALLAST

TYPE

VOLTAGE

FEATURES

- ▶ Horizontal lamp placement and reflector design provides wider light distribution with a lower profile for shallow plenums.
- ▶ Self-flanged reflector offers maximum lamp performance.
- ▶ Sturdy one-piece pan construction.
- ▶ Adjustable hanger brackets with bar hangers standard.
- ▶ Easy-access, 14-gauge galvanized steel junction box with two snap-on covers.
- ▶ Self-flanged, low-iridescent aluminum reflector available in assorted colors.
- ▶ This fixture is proudly made in the USA.

**ORDERING INFORMATION****SERIES****PH60** 6" Round Horizontal Lamp Downlight**LAMP OPTIONS**

# OF LAMPS	WATTAGE/TYPE
1	13Q, 18Q, 26Q, 26T, 32T, or 42T
2	13Q, 18Q, or 26Q

REFLECTOR FINISH

CS	Clear semi-specular (standard)
SPC	Clear specular
CG	Champagne gold
GD	Gold
PW	Pewter
SG	Satin-glow
STR	Straw
WT	Wheat

OPTIONS

For EM and EM/ITS ballast options, see Downlighting Information section.¹

F	Fuse (must specify voltage)
MWT	Matte white trim
MB	Micro-baffle
YOKE¹	Yoke mount reflector ¹
CCEA¹	Chicago plenum (CP) ¹
AC/C73	Accent cone with clear prismatic tempered glass lens
AC/CGS²	Accent cone with clear glass lens ²
AC/FF	Accent cone with fresnel glass lens
MB/C73	Micro-baffle with clear prismatic tempered glass lens

OPTIONS (Continued)

MB/CGS²	Micro-baffle with clear glass lens ²
MB/FF	Micro-baffle with fresnel glass lens
WW	Wall wash (not available with AC or MB)
LD	Luminous disk
LDO	Luminous disk open
LR	Luminous ring
PFS/_	Perforated shield (must specify LD, LDO, or LR option)
SCA_°	Sloped Ceiling Adapter (Specify degree of slope in 5° increments, 10°-30°. SCA increases fixture height, see Downlighting Information for details.)
RETRO¹	Retrofit Mounting Pan Assembly (see Downlighting Information for details) ¹

BALLAST TYPE

EB1	1-lamp electronic ballast
EB2	2-lamp electronic ballast
EBD1*_³	1-lamp electronic dimming ballast (120V or 277V only, must specify) ³
EBD2*_³	2-lamp electronic dimming ballast (120V or 277V only, must specify) ³

VOLTAGE (Must specify)

120	120V
277	277V
UNV	120-277V

SPECIFICATIONS

Housing – 20-gauge, die-formed, galvanized steel pan/plaster frame.

Reflector – Low-iridescent aluminum. Clear semi-specular (CS) finish standard.

Electrical – Electronic ballast. Prewired at factory for easy field installation.

Mounting – Recessed. Pan size: 12" x 16-1/4" Ceiling cutout: ø6-1/2" Cutout with SCA: ø9-1/8"

Labels – UL/CUL listed for through-branch circuit wiring and dry or damp locations. UL/CUL listed for wet location under covered ceiling when specified with _/C73, _/CGS, or _/FF option.

LAMP BASE DATA	
Wattage	Base
13Q	G24q-1
18Q	G24q-2
26Q	G24q-3
26T	GX24q-3
32T	GX24q-3
42T	GX24q-4

¹ EM is not available with RETRO option. EM/ITS option is not available with CCEA or YOKE options.

² Acrylic or polycarbonate lens options also available.

³ Must specify manufacturer. See Downlighting Information section for dimming ballast options.



**Job Name:**

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

PH60-132T-CS-EB1-UNV

Type:**D**

Notes:

TSC13-21698

PH60**6" ROUND DOWNLIGHT – HORIZONTAL LAMP****TEST REPORT INFORMATION**

- Test Report #: 13291.0
- Date: 10/20/06
- Lamp Type: CFQ26W/G24q/35
- Lamp Quantity: 2
- Rated Lumens: 1800.

DESCRIPTION

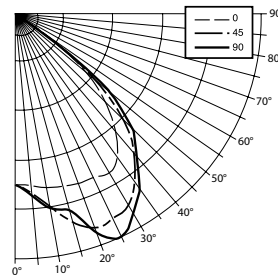
- 2/26W Quad Tube Horizontal Compact Fluorescent Downlight
- 6" Aperature
- Low-Iridescence Semi-Specular Reflector with Open Bottom
- Sylvania Ballast #QTP2x2 6CF/UNVBS

PHOTOMETRY INFORMATION

Catalog #: PH60-226Q-EB-CS

CANDLEPOWER DISTRIBUTION

Vertical Angle	Horizontal Angle			Zonal Lumens
	0°	45°	90°	
0°	610.	610.	610.	
5°	614.	640.	651.	60.8
15°	637.	770.	725.	208.2
25°	642.	804.	878.	366.2
35°	621.	723.	755.	445.5
45°	440.	540.	576.	408.3
55°	103.	119.	150.	113.6
65°	8.	8.	8.	8.2
75°	3.	2.	2.	2.5
85°	1.	1.	0.	1.0
90°	0.	0.	0.	

**LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixture
0 - 30	635.	17.6	39.3
0 - 40	1081.	30.0	66.9
0 - 60	1603.	44.5	99.3
0 - 90	1614.	44.8	100.0
Total Luminaire:			
0 - 180	1614.	44.8	100.0
IES Spacing Criteria: End = 1.5 Diagonal = 1.6 Across = 1.6			

ZONAL CAVITY COEFFICIENTS

	Ceiling	.80			.70			.50		
	Wall	.70	.50	.30	.70	.50	.30	.50	.30	.10
0	.53	.53	.53	.52	.52	.52	.50	.50	.50	
1	.50	.49	.48	.49	.48	.47	.46	.45	.44	
2	.48	.45	.43	.46	.44	.42	.43	.41	.40	
3	.45	.41	.39	.44	.40	.38	.39	.37	.36	
4	.42	.38	.35	.41	.37	.34	.36	.34	.32	
5	.39	.34	.31	.38	.34	.31	.33	.30	.28	
6	.36	.31	.28	.35	.31	.28	.30	.27	.25	
7	.33	.28	.25	.33	.28	.25	.27	.24	.22	
8	.31	.25	.22	.30	.25	.22	.25	.22	.20	
9	.28	.23	.19	.28	.22	.19	.22	.19	.17	
10	.26	.21	.17	.25	.20	.17	.20	.17	.15	

Effective Floor Cavity Reflectance = .20

QUANTITY ESTIMATOR

Room Size	±50 fc.	±75 fc.	±100 fc.
20' x 20' (400 sq. ft.)	14	22	29
30' x 30' (900 sq. ft.)	32	48	65
40' x 40' (1,600 sq. ft.)	57	86	115

Calculations based on standard reflectance of 80/50/20 and a light loss factor of 1.0 with a 10'-0" ceiling height.

COLOR CONVERSION FACTORS

CAT#	Description	Conversion Factor
SPC	Specular	1.02
CG	Champagne gold	.96
GD	Gold	.93
PW	Pewter	.86
STR	Straw	.97
WT	Wheat	.88
MB	Micro-baffle	.60

**Job Name:**

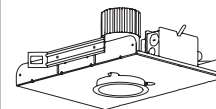
USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

PV45-126T-CS-EB1-UNV

Notes:**Type:****E**

TSC13-21698

4.5" ROUND DOWNLIGHT – VERTICAL LAMP**PV45****SUBMITTAL:****JOB:****TYPE:****VOLTAGE:****EXAMPLE****PV45 - 1 18Q - CS - OPTIONS - EB1 - UNV**

SERIES

NUMBER
OF LAMPSWATTAGE/
TYPEREFLECTOR
FINISH

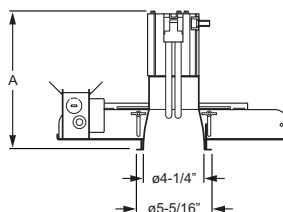
OPTIONS

BALLAST
TYPE

VOLTAGE

FEATURES

- ▶ Self-flanged aluminum reflector prevents light leaks and is available in assorted colors.
- ▶ Finned, extruded aluminum heat sink socket housing dissipates heat for cooler operation.
- ▶ Sturdy one-piece pan construction.
- ▶ Adjustable hanger brackets with bar hangers standard.
- ▶ Easy-access, 14-gauge galvanized steel junction box with two snap-on covers.
- ▶ This fixture is proudly made in the USA.



Wattage/ Type	Dim. A
13Q	8-5/16"
18Q	8-13/16"
26Q	9-13/16"
26T	8-11/16"
32T	8-7/8"

**SPECIFICATIONS**

Housing – 20-gauge, die-formed, galvanized steel pan/plaster frame.

Reflector – Low-iridescent aluminum. Clear semi-specular (CS) finish standard.

Electrical – Electronic ballast. Prewired at factory for easy field installation.

Mounting – Recessed. Pan size: 12" x 16-1/4" Ceiling cutout: ø4-3/4"

Labels – UL/CUL listed for through-branch circuit wiring and dry or damp locations.¹ UL/CUL listed for wet location under covered ceiling when specified with ___/CGS or ___/CPG option.

LAMP BASE DATA	
Wattage	Base
13Q	G24q-1
18Q	G24q-2
26T	GX24q-3
32T	GX24q-3

ORDERING INFORMATION**SERIES****PV45** 4.5" Round Downlight–Vertical Lamp**LAMP OPTIONS**

# OF LAMPS	WATTAGE/TYPE
1	13Q, 18Q, 26T ¹ or 32T ¹

REFLECTOR FINISH

CS	Clear semi-specular (standard)
SPC	Clear specular
CG	Champagne gold
GD	Gold
PW	Pewter
SG	Satin-glow
STR	Straw
WT	Wheat

OPTIONS

For EM and EM/ITS ballast options (120V or 277V only, must specify voltage), see Downlighting Information section.²

F	Fuse (must specify voltage)
MWT	Matte white trim
MB	Micro-baffle
YOKE²	Yoke mount reflector ²
CCEA²	Chicago plenum (CP) ²

OPTIONS (Continued)

AC/CGS³	Accent cone with clear glass lens ³
AC/CPG	Accent cone with clear prismatic tempered glass lens
MB/CGS³	Micro-baffle with clear glass lens ³
MB/CPG	Micro-baffle with clear prismatic tempered glass lens
LD	Luminous disk
LDO	Luminous disk open
LR	Luminous ring

BALLAST TYPE

EB1	1-lamp electronic ballast
EBD1*⁴	1-lamp electronic dimming ballast (120V or 277V only, must specify) ⁴

VOLTAGE (Must specify)

120	120V
277	277V
UNV	120-277V

¹ 32T lamp option is UL listed (not UL/CUL).

² EM/ITS option is not available with CCEA or YOKE options.

³ Acrylic or polycarbonate lens options also available.

⁴ Must specify manufacturer. See Downlighting Information section for dimming ballast options.



**Job Name:**

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

PV45-126T-CS-EB1-UNV

Type:**E**

Notes:

TSC13-21698

PV45**4.5" ROUND DOWNLIGHT – VERTICAL LAMP****TEST REPORT INFORMATION**

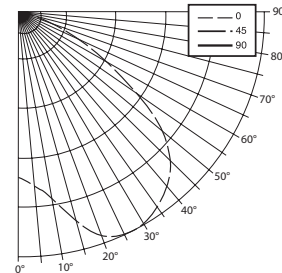
- ▶ Test Report #: 10388.0
- ▶ Date: 08/30/99
- ▶ Lamp Type: CFQ18W/G24q/35
- ▶ Lamp Quantity: 1
- ▶ Rated Lumens: 1250.

DESCRIPTION

- ▶ 1/18W Quad PL Compact Fluorescent
- ▶ 4.5" Diameter Recessed Luminaire
- ▶ Low-Iridescent Semi-Specular Reflector with Open Bottom

PHOTOMETRY INFORMATIONCatalog #: **PV45-118Q-120-EB****CANDLEPOWER DISTRIBUTION**

Vertical Angle	Average Candela	Zonal Lumens
0°	148.	
5°	155.	14.8
15°	194.	55.1
25°	217.	100.3
35°	205.	128.9
45°	178.	137.5
55°	117.	105.0
65°	46.	45.3
75°	4.	4.2
85°	1.	.5
90°	0.	

**LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixture
0 - 30	170.	13.6	28.8
0 - 40	299.	23.9	50.6
0 - 60	542.	43.3	91.5
0 - 90	592.	47.3	100.0
Total Luminaire:			
0 - 180	592.	47.3	100.0
IES Spacing Criteria: Diagonal = 1.8 Across = 1.3			

ZONAL CAVITY COEFFICIENTS

	Ceiling	.80			.70			.50		
	Wall	.70	.50	.30	.70	.50	.30	.50	.30	.10
	Room Cavity Ratio									
0	.56	.56	.56	.55	.55	.55	.53	.53	.53	
1	.53	.51	.49	.51	.50	.48	.48	.47	.46	
2	.49	.46	.43	.48	.45	.43	.43	.41	.40	
3	.45	.41	.38	.44	.40	.37	.39	.37	.34	
4	.42	.37	.33	.41	.36	.33	.35	.32	.30	
5	.38	.33	.29	.37	.32	.28	.31	.28	.26	
6	.35	.29	.25	.34	.29	.25	.28	.25	.22	
7	.32	.26	.22	.31	.26	.22	.25	.22	.19	
8	.29	.23	.19	.29	.23	.19	.22	.19	.16	
9	.27	.21	.17	.26	.20	.17	.20	.16	.14	
10	.25	.18	.15	.24	.18	.15	.18	.14	.12	

Effective Floor Cavity Reflectance = .20

QUANTITY ESTIMATOR

Room Size	±50 fc.	±75 fc.	±100 fc.
20' x 20' (400 sq. ft.)	42	64	90
30' x 30' (900 sq. ft.)	100	144	196
40' x 40' (1,600 sq. ft.)	182	272	361

Calculations based on standard reflectance of 80/50/20 and a light loss factor of 1.0 with a 10'-0" ceiling height.

COLOR CONVERSION FACTORS

CAT#	Description	Conversion Factor
SPC	Specular	1.02
CG	Champagne gold	.96
GD	Gold	.93
PW	Pewter	.86
STR	Straw	.97
WT	Wheat	.88
MB	Micro-baffle	.60

Job Name:

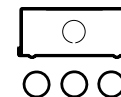
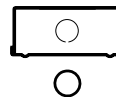
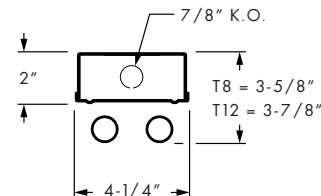
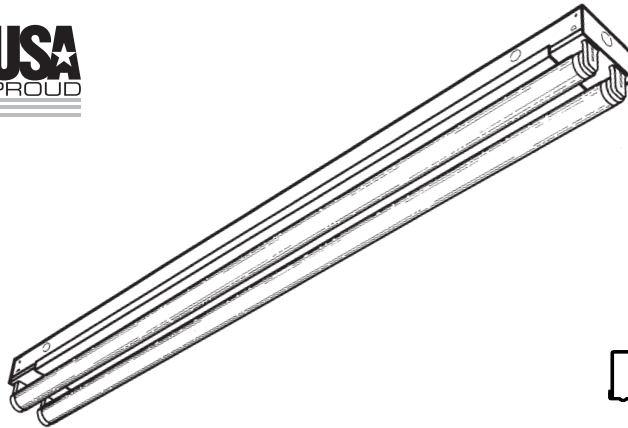
USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

76-4-232-WG-7614-EB2-UNV

Notes:**Type:****G1**

TSC13-21698

1, 2, OR 3 LAMP STANDARD STRIP

SERIES **76**
VOLTAGE TYPE JOB _____

SPECIFICATIONS

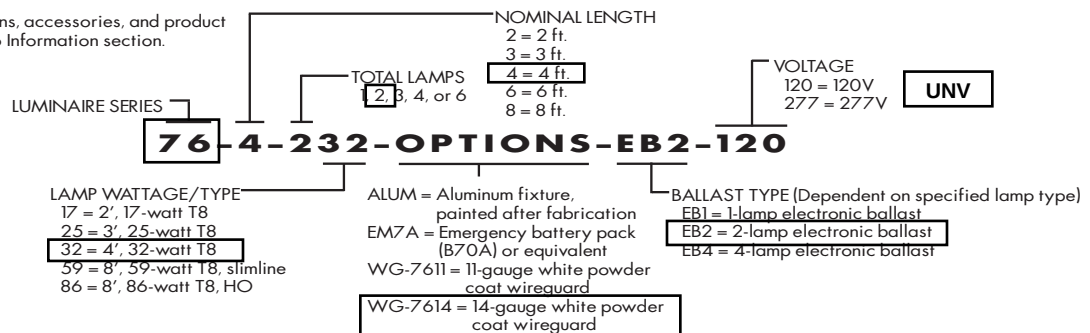
- HOUSING — 22-gauge die-formed C.R.S. or optional .040" thick aluminum.
- FINISH — 92% minimum average reflective white powder coat with multi-stage iron/phosphate prepared metal.
- ELECTRICAL — Electronic ballast standard (where available), rated Class P.
- LABELS — UL/CUL listed as fluorescent luminaire suitable for dry or damp locations.
- MOUNTING — Surface or suspended.

FEATURES

- Factory-mounted, prewired sockets cut installation time.
- Hinging/locking lamp bracket cuts installation time.
- One quarter-turn fastener secures wireway cover to housing.
- Channel connector furnished for continuous row applications.
- Ballast secured by two captive bolts and nuts to ensure a tight, reliable fit for maximum heat dissipation and minimal ballast noise.
- All parts painted after fabrication to facilitate installation, increase efficiency, and inhibit corrosion.
- This fixture is proudly made in the USA.

SUBMITTAL INFORMATION

For more options, accessories, and product details, refer to Information section.



FLUORESCENT LIGHTING

**Job Name:**

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

76-4-232-WG-7614-EB2-UNV

Type:**G1**

Notes:

TSC13-21698

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PHOTOMETRY INFORMATION

Williams Catalog #76-4-232-EB2-120

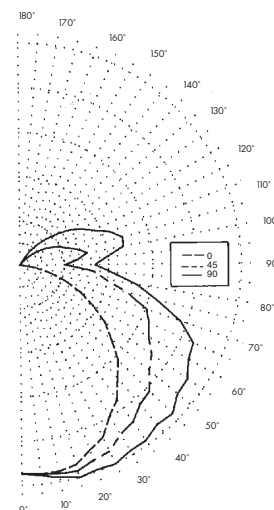
Test Report #8591.0, Dated 12/27/95

Lamp Type: F32T8/SPX35/RS

Lamp Quantity: 2

CANDLEPOWER DISTRIBUTION

VERT. ANG.	HORIZONTAL ANGLE			ZONAL LUMENS
	0	45	90	
0	1128.	1128.	1128.	
5	1135.	1135.	1142.	108.4
15	1120.	1155.	1192.	327.3
25	1033.	1117.	1191.	515.1
35	897.	1044.	1166.	651.8
45	740.	977.	1150.	744.2
55	555.	860.	1093.	759.7
65	361.	763.	1025.	728.6
75	171.	597.	761.	566.8
85	29.	394.	495.	350.2
90	3.	244.	403.	
95	0.	309.	468.	303.0
105	0.	323.	574.	321.9
115	0.	237.	441.	219.0
125	0.	150.	333.	136.7
135	0.	68.	200.	63.9
145	0.	13.	90.	19.2
155	0.	0.	13.	2.3
165	0.	0.	0.	.0
175	0.	0.	0.	.0
180	0.	0.	0.	.0

**LUMEN SUMMARY**

ZONE	LUMENS	% LAMP	% FIXTURE
0 - 30	951.	16.1	16.3
0 - 40	1603.	27.2	27.5
0 - 60	3107.	52.7	53.4
0 - 90	4752.	80.5	81.7
90 - 120	844.	14.3	14.5
90 - 130	981.	16.6	16.9
90 - 150	1064.	18.0	18.3
90 - 180	1066.	18.1	18.3
Total Luminaire			
0-180	5818.	98.6	100.0

TOTAL LUMINAIRE

OPTICAL EFFICIENCY = 98.6 %

SPACING CRITERIA: ACROSS= 1.6 ALONG= 1.3

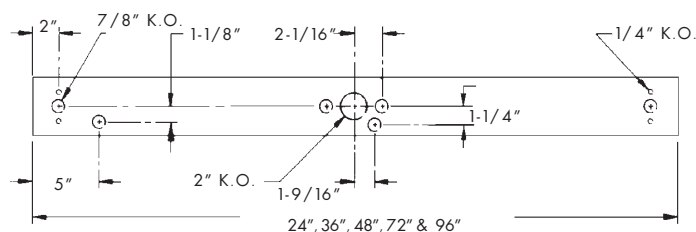
ZONAL CAVITY COEFFICIENTS

EFFECTIVE FLOOR CAVITY REFL. = .20

CEILING	.80			.70			.50		
	WALL	RCR		.70	.50	.30	.50	.30	.10
0	113	113	113	108	108	108	100	100	100
1	101	96	91	97	92	87	84	81	78
2	91	82	75	87	79	72	72	67	62
3	83	72	63	79	69	61	63	57	51
4	75	63	54	72	60	52	56	49	43
5	68	55	46	65	53	44	49	41	36
6	63	49	40	59	47	38	43	36	31
7	58	44	35	55	42	34	39	32	26
8	53	39	30	50	38	29	35	28	23
9	49	35	27	46	34	26	31	24	19
10	45	32	24	43	31	23	28	22	17

BACK VIEW**NOTE:**

2" K.O. and (3) 7/8" K.O.'s
are on 4', 6', & 8' units only



H.E. WILLIAMS, INC.

H.E. Williams, Inc. • Carthage, Missouri • www.hewilliams.com • 417-358-4065 • Fax: 417-358-6015

Information contained herein is subject to change without notice.

HEWJP43033 09/01/11RJ

Job Name:

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

SLC-XX-T8-MWA-WHT-UNV

Notes:**Type:****J**

TSC13-21698

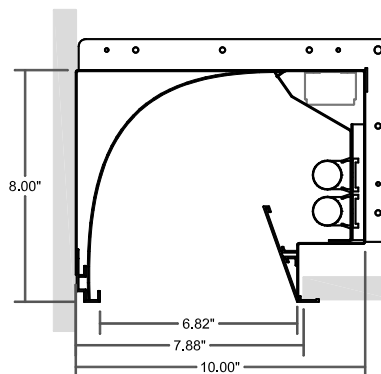
Type
—

Date
--/--/----

PMC LIGHTING

**SERIES
SLC**

PERIMETER

**OPTIONS:****Mounting Options:**

FL - Flanged for plaster or dry wall ceilings
(Mounting yokes supplied)
T - Standard T-grid ceiling (*T clips supplied*)

Lamp Options:

BX - Biax
T5 - 5/8" diameter lamp
T5HO - 5/8" diameter lamp (*High output*)
T8 - 1" diameter lamp

Reflector Options:**MWA** - Continuous Matte White Acrylic**Color Options:**

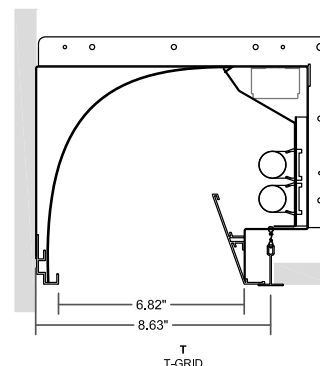
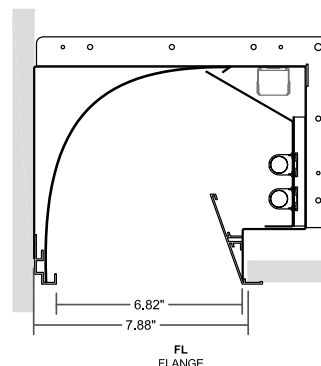
WHT - White trim (*Standard*)
CA - Custom colors for ceiling trim

Voltage Options:

UNV - Universal voltage 120/277
277V - 277 volt operation
347V - 347 volt operation

Electrical Options:

2CIR - 2 circuit wiring
DIM - Dimming ballast (*Consult factory*)
EM - Emergency ballast
GLR - In line fusing

**PRODUCT SPECIFICATION DATA:**

SLC series fixtures have a flexible acrylic matte white reflector that may be cut in lengths equaling the total run of each row, preventing seams and giving a more uniform appearance. Semi-Specular Aluminum reflectors in 4 foot segments are available. White enamel housings, bracketry and trim.

Fixtures are UL listed for damp location, and have **standard electric ballasts**. Each fixture is lamp-tested at the factory before shipment.

ORDERING INFORMATION

Series	Output	Mounting	Lamp / Type	Length	Diffuser	Color	Voltage	Electrical
SLC	D	XX	1/T8	XX	MWA	WHT	UNV	—
SLC Perimeter	D Direct	FL Flange T T-Grid	1 2 BX Biax T5 5/8" Diameter T5HO 5/8" Diameter (High Output) T8 1" Diameter	2' 3' 4' 5' 6' 7' 8'	MWA	WHT White (Standard) CA Custom Color	UNV Universal Voltage 277V 277 Volt Operation 347V 347 Volt Operation	2CIR 2 Circuit Wiring DIM Dimming Ballast EM Emergency Ballast GLR In Line Fusing



Job Name:

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

SLC-XX-T8-MWA-WHT-UNV

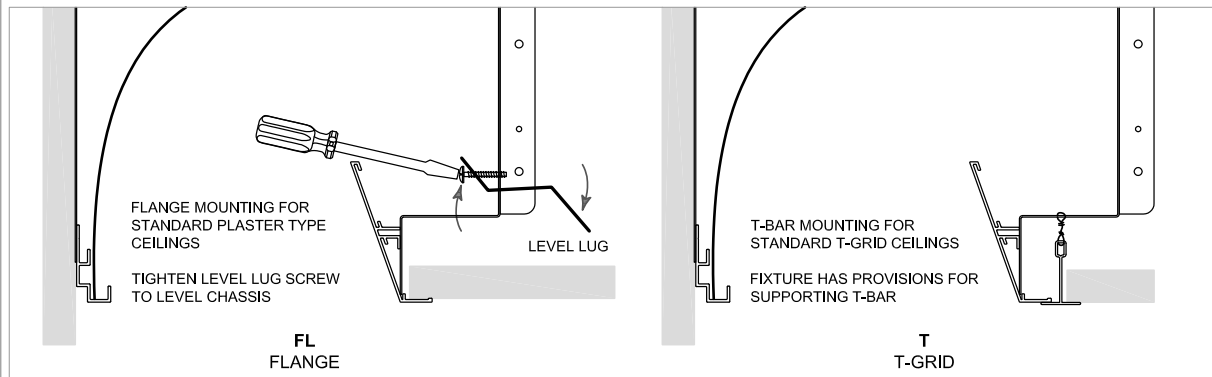
Notes:**Type:****J**

TSC13-21698

PERIMETER

SERIES: SLC

Ceiling type must be specified when ordering fixtures. Modifications to the ceiling interface may be possible to accommodate some contemporary ceiling configurations. Details are required prior to manufacture.



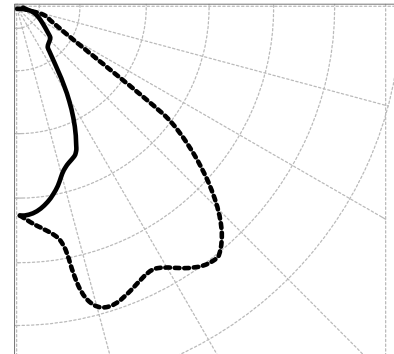
ALL FIXTURES MUST BE SUPPORTED BY STRUCTURAL CEILING.

PHOTOMETRY

Model No. **SLC-D-T-1/T8-4'-120V**
2 Lamp • 2850 Lumens •

- Coefficient Of Utilization -

RCR	80%			70%			50%		
	70	50	30	70	50	30	50	30	10
1	.54	.52	.51	.53	.51	.50	.49	.48	.47
2	.50	.47	.44	.49	.46	.43	.44	.42	.40
3	.46	.42	.38	.45	.41	.38	.40	.37	.35
4	.43	.37	.34	.42	.37	.33	.36	.33	.30
5	.40	.34	.30	.39	.33	.29	.32	.29	.26
6	.37	.31	.27	.36	.30	.26	.29	.26	.23
7	.34	.28	.24	.33	.28	.24	.27	.23	.21
8	.32	.26	.22	.31	.25	.21	.25	.21	.19
9	.30	.23	.20	.29	.23	.20	.23	.19	.17
10	.28	.22	.18	.27	.21	.18	.21	.18	.15

**CANDELLA DISTRIBUTION****SPECIFICATIONS:**

All dimensions are subject to change, consult factory before making structural alterations.

CONSTRUCTION: Fixture chassis die-formed of 20 gauge (or heavier) CRS. Internal bracketry of 20 gauge Steel. Light shield and wall interface of extruded aluminum.

MOUNTING:

(FL) Flanged fixtures for plaster ceilings have leveling lugs in housing.
(T) Fixtures for standard T-bar ceiling have integral clips to hold T-bar.

Note: For ceiling configurations other than standard, PMC may be able to modify the fixture/ceiling interface. Please consult the factory.

FINISH: Standard fixture trim and extruded angled Light Deflector are finished with gloss white (WHT) Reflective internal steel components are finished in high gloss white enamel (Minimum Reflectance Factor 90%).

FINISH: Aside from the standard color, a range of custom colors are available to meet Architect specifications. Please consult the factory.

ELECTRICAL: Universal Voltage (UNV), Dimming Ballast (DIM), Emergency Ballast 1100 LUMENS(EM), In Line Fusing (GLR), 2 Circuit Wiring (2CIR).

Note: unless specified, PMC will select a ballasts to meet the requirements.

All fixtures are UL listed, and are shipped fully wired, individually tested, with electronic ballasts shipped as standard equipment.



**Job Name:**

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLO
ARCHITECTS - COLUMBIA (COLUMBIA)

Catalog Number:

EXIT/CA-XX-R-AF-BLK-EM

Notes:**Type:****EXIT**

TSC13-21698

CAST ALUMINUM LED EXIT SIGN**EXIT/CA****SUBMITTAL:****JOB:****TYPE:****VOLTAGE:**

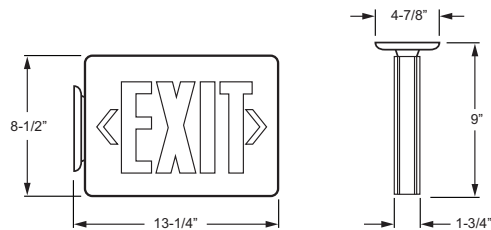
EXAMPLE:

EXIT/CA**SF****R****AF****BLK****AC****OPTIONS**

SERIES

NUMBER
OF FACESLETTER
COLORFACEPLATE
FINISHHOUSING
COLORPOWER
OPTIONSOPTIONS/
ACCESSORIES**SERIES****FEATURES**

- ▶ Available as full-time AC powered unit or emergency unit with battery backup.
- ▶ Ni-Cad battery on emergency (EM) units provides 90 minutes of emergency operation.
- ▶ Environmentally coated, fully automatic solid-state charger on EM units.
- ▶ Automatic, low voltage disconnect (LVD) activates EM unit in event of partial power failure or brownout.
- ▶ Compact, low profile design.
- ▶ Energy consumption of less than 4 watts for red LED and less than 2 watts for green LED.
- ▶ Removable directional indicators.

**EXIT/CA SERIES****HOUSING** — Cast aluminum.**ELECTRICAL** — Universal transformer for 120 or 277 VAC operation.**FINISH** — Various housing colors and faceplate finishes available. Must specify**MOUNTING** — Universal mounting canopy included for top or side installation.**NUMBER OF FACES** (Must specify)**SF** Single Face**DF** Double Face**LETTER COLOR** (Must specify)**R** Red**G** Green**FACEPLATE FINISH** (Must specify)**AF** Brushed Aluminum Faceplate**BF** Black Faceplate**WF** Industry-standard White Faceplate**HOUSING COLOR** (Must specify)**BLK** Black**BA** Brushed Aluminum**WHT** Industry-standard White**POWER OPTIONS** (Must specify)**AC** AC operation**EM** AC operation with Emergency Battery Backup**OPTIONS****DC** Dual Circuit**SDT** Self-Diagnostic Test**LABELS**

Listed to UL 924 standard as an exit light suitable for dry or damp location.

**Job Name:**

USC HORIZON GROUND & FOURTH FLOORS
UPFIT
Architect: WATSON TATE SAVORY LIOLLIO
ARCHITECTS - COLUMBIA (COLUMBIA)

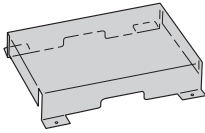
Catalog Number:

EXIT/CA-XX-R-AF-BLK-EM

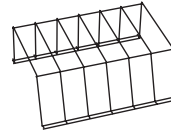
Type:**EXIT**

Notes:

TSC13-21698

EXIT/CA**CAST ALUMINUM LED EXIT SIGN****ACCESSORIES**

PC1
Polycarbonate Shield



WG
Wireguard



Date: Jul 22, 2013

CAL+D
880 S. Pleasantburg Dr
Greenville SC 29607
Phone: (864) 335-5065
Fax: (864) 335-5066

Job Name
HORIZON GROUND AND FOURTH FLOOR UPFIT -
CALD13-24122
COLUMBIA

Bid Date
Jul 1, 2013

Submittal Date
Jul 22, 2013

Architect:
Watson Tate Savory Architects
1316 Washington St
Columbia SC 29201



**Carolina
Architectural
Lighting and
Design**

Transmittal

CAL+D
880 S. Pleasantburg Dr
Greenville SC 29607
Phone: (864) 335-5065
From: Drew Hamrick

Project HORIZON GROUND AND FOURTH FLOOR
UPFIT -

Quote# CALD13-24122

Location COLUMBIA
Contact:

ATTACHED WE ARE SENDING YOU 0 COPIES OF THE FOLLOWING ITEMS:

- | | | |
|-----------------------------------|---|--------|
| ☐ Drawings | ☐ Specifications | Other: |
| ☐ Prints | ☐ Information | |
| ☐ Plans | ☐ Submittals | |

THESE ARE TRANSMITTED FOR:

- | | | |
|--|---|---------------------------------|
| ☒ Prior Approval | ☐ Resubmittal for Approval | ☐ Record |
| ☐ Approval | ☐ Corrections | Bids due on: |
| ☐ Approval as Submitted | ☐ Your Use | Other: |
| ☐ Approval as Noted | ☐ Review and Comment | |

Type	MFG	Part
A1	Metalumen	S8A2T5HOXNSB/OYWE1277N
A2	Metalumen	S8A2T5HOXNSB/OYWD11277N
B1	Columbia	P4D24-332G-LS36-S-EU
B2	Columbia	P4D24-432G-LS46-S-EU
D	Prescolite	LF6CFH132EB/6CFH
E	Prescolite	D432EB/4D5
F	ALight	D74HUOXW
G1	Columbia	CS4-232-EU/CSWG4
H	Inter-Lux	18969.25
J	Linear Lighting	WW4-D-1-ET8-120/277-NS-R-BW-4
X	Dual-Lite	SEDRBN
SEMPRA tm Series Cast aluminum exit sign, AC only, red letters ,doubleface, black housing, brushed aluminum stencil, with canopy kit,120/ 277VAC.		

RE: HORIZON GROUND AND FOURTH FLOOR UPFIT -
COLUMBIA

Type	MFG	Part
A1	Metalumen	S8A2T5HOXNSB/OYWE1277N
A2	Metalumen	S8A2T5HOXNSB/OYWD11277N
B1	Columbia	P4D24-332G-LS36-S-EU
B2	Columbia	P4D24-432G-LS46-S-EU
D	Prescolite	LF6CFH132EB/6CFH
E	Prescolite	D432EB/4D5
F	ALight	D74HUOXW
G1	Columbia	CS4-232-EU/CSWG4
H	Inter-Lux	18969.25
J	Linear Lighting	WW4-D-1-ET8-120/277-NS-R-BW-4
X	Dual-Lite	SEDRBN
	SEMPRA tm Series Cast aluminum exit sign, AC only, red letters ,doubleface, black housing, brushed aluminum stencil, with canopy kit,120/277VAC.	

**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

S8A2T5HOXNSB/OYWE1277N

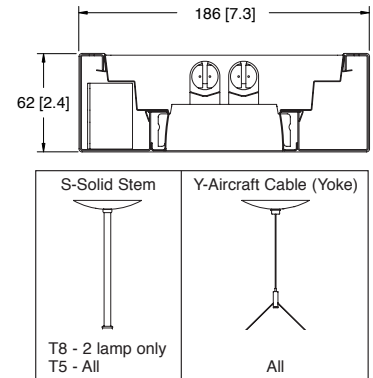
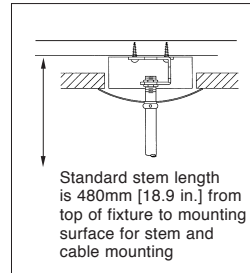
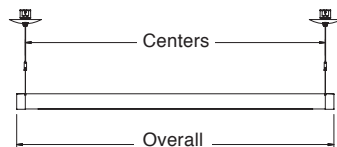
Type:**A1****Notes:**

CALD13-24122

Ordering Guide**Boxer S8A Series**
Pendant**16****Mounting Information**

Nominal Length	Overall mm [in]	Centers mm [in]
4' T5-T8	1289 [50.8]	1219 [48.0]
8' T5-T8	2508 [98.8]	2438 [96.0]

All luminaires in this series are modular. There are no start, intermediate or end units. Luminaires are provided with through wiring, quick connectors and end caps.



Photometrics on reverse

Part number example
S8A **2** **T8** **8** **C** **SSL** **Y** **W** **E** **1** **277** **N**

Model	Number of Lamps	Lamp Type	Length	Control Up	Control Down	Mounting	Finish	Ballast	Circuitry	Voltage	Options
S8A											
Number of Lamps	Length	Control Up	Control Down	Mounting	Ballast	Circuitry	Voltage				
1	4	N None	SB Solid Cross Blade Baffle	S Solid Stem <i>(Not available with 1-T8 lamp)</i>	Standard	1 1 Circuit (Standard)	120				
2	8	C Clear Dust Cover <i>(Not available with T5HO lamps)</i>	PB Perforated Cross Blade Baffle	Y Yoke Aircraft Cable	E Electronic Instant Start T8 Programmed Rapid Start -T5/T5HO	LR Left/Right Switching (2 Lamp)	277				
3	12 (8'+4')		SL Specular Parabolic Louver	Additional mounting options available	Dimming 120v/277v dimming	IO In/Out Switching (3 Lamp)					
	16 (2x8')		SSL Semi Specular Parabolic Louver					D1 Advance Mark 7 (1/2/3 Lamp T8, 1/2 Lamp T5HO)			
	20 (2x8'+4')							D2 Advance Mark 10 (1/2/3 Lamp T8, 1/2 Lamp T5HO)			
	24 (3x8')				D3 Lutron Eco 10 (1/2 Lamp T8, 1/2 Lamp T5/T5HO)						
Lamp Type	28 (3x8'+4')		/O Opal Overlay for use with any of the above controls	Finish	D4 Lutron Hi-lume (1/2 Lamp T8, T5HO)	/EN Emergency/ Night Light	Consult factory				
T8 32W	32 (4x8')		ML Micro Linear Lens FL Frosted Lens	W White	D5 Lutron Eco-System (T5-T5HO-T8)						
T5 28W	36 (4x8'+4')			C Custom Finish <i>For custom Finish specify RAL#</i>	Battery Pack Options (120v/277v) BN1 Bodine B50LP (T8) BN3 Bodine LP500 (T5) BN4 Bodine LP600 (T5/T5HO/T8)			Options N None O Occupancy Sensor D Daylight Sensor DOS Daylight/ Occupancy Sensor			
T5HO 54W	40 (5x8')										
	44 (5x8'+4')										
	48 (6x8')										
Please refer to circuitry and sensor options guide for complete details											

Approvals

WR2-12-09

METALUMEN

570 Southgate Drive, Guelph, Ontario N1G 4P6
 Mailing Address: P. O. Box 1779, Guelph, Ontario N1H 6Z9
 T: 800-621-6785 T: 519-822-4381 F: 519-822-4589
 www.metalumen.com

Signature _____

Date _____



Mixed Sources
 Product group from well-managed
 forests, controlled sources and
 recycled wood or fiber
 www.fsc.org Cert no.
 © 1996 Forest Stewardship Council

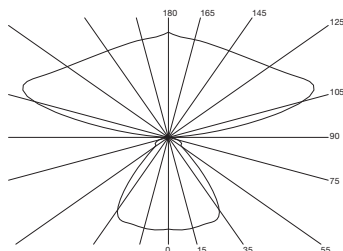


**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

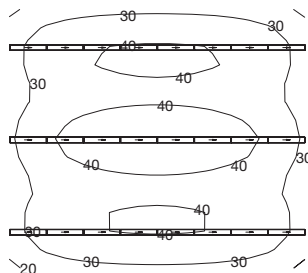
S8A2T5HOXNSB/OYWE1277N

Notes:**Type:****A1**

CALD13-24122

Photometrics**Distribution Curve****Candlepower Summary**

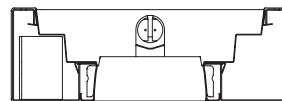
Angle	0.0	45	90	Output Lumens
0	327	327	327	2
5	324	326	331	29
15	285	305	335	87
25	233	276	337	130
35	176	234	316	151
45	119	163	153	116
55	79	82	59	68
65	51	51	52	51
75	27	27	34	30
85	10	11	11	9
90	10	3	1	2
95	82	125	80	84
105	127	369	497	360
115	183	346	510	344
125	243	352	440	311
135	293	347	400	269
145	332	354	377	223
155	359	360	365	167
165	376	366	361	104
175	376	371	363	33
180	375	375	375	2

Room Layout

10.7(L) x 9.1(W) x 3.0(H)m [35 x 30 x 10 ft]
 Reflectances: 80/50/20
 Maintenance factor: 0.85
 Fixture spacing: 3.0m [10'-0"]
 Pendant length: 457mm [18"]

Zonal Lumen Summary

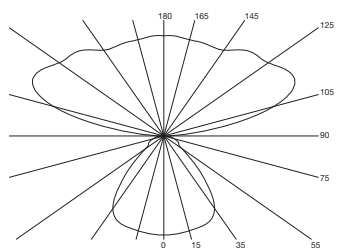
Zone	Lumens	% Lamp	% Luminaire
0- 30	248	9	10
0- 40	399	14	16
0- 60	582	20	23
0- 90	674	23	26
90-120	789	27	31
90-130	1100	38	43
90-150	1591	55	62
90-180	1898	65	74
0-180	2572	89	100

Boxer S8A series 16**Pendant****T5 - 1 Lamp****Photometric Report: File # S8A-1T5-4-N-SB****Efficiency: 88.7%****26% Direct : 74% Indirect****Model Shown: 1-F28 T5 Lamp****Solid cross blade baffle****Coefficients of Utilization****Zonal Cavity Method**

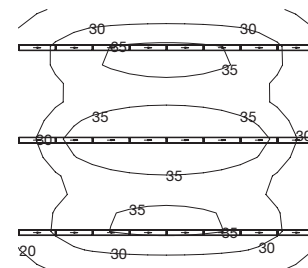
Effective Floor Cavity Reflectance = .20

RC	80				70				50			
RW 70	50	30	10		70	50	30	10		50	30	10
RCR												
0	90	90	90	90	81	81	81	81		62	62	62
1	83	79	76	73	74	71	68	65		55	53	51
2	75	69	64	60	67	62	58	54		48	45	43
3	69	61	55	50	61	55	50	45		43	39	36
4	63	54	48	42	56	49	43	39		38	34	31
5	58	48	41	36	52	43	38	33		34	30	27
6	53	43	36	31	47	39	33	29		31	27	23
7	49	39	32	28	44	35	29	25		28	24	21
8	46	35	29	24	41	32	26	22		25	21	18
9	42	32	26	21	38	29	23	20		23	19	16
10	39	29	23	19	35	27	21	18		21	17	15

Laboratory results may not be representative of field performance.
 Ballast factors have not been applied. Additional IES files with lamping
 and control options available on line at www.metalumen.com/ies

Distribution Curve**Candlepower Summary**

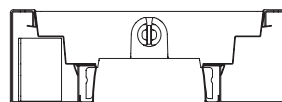
Angle	0.0	45	90	Output Lumens
0	347	347	347	2
5	332	338	347	30
15	298	314	344	90
25	244	282	342	133
35	184	239	309	153
45	125	167	184	124
55	83	92	75	77
65	54	55	57	55
75	29	29	37	33
85	11	11	12	9
90	9	4	1	2
95	80	111	85	79
105	125	323	398	309
115	175	357	500	345
125	231	357	447	312
135	278	342	421	268
145	314	341	367	214
155	342	346	355	161
165	358	351	349	100
175	359	357	353	32
180	351	351	351	2

Room Layout

10.7(L) x 9.1(W) x 3.0(H)m [35 x 30 x 10 ft]
 Reflectances: 80/50/20
 Maintenance factor: 0.75
 Fixture spacing: 3.0m [10'-0"]
 Pendant length: 457mm [18"]

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0- 30	255	9	10
0- 40	408	14	16
0- 60	609	21	24
0- 90	707	24	28
90-120	734	25	29
90-130	1046	36	41
90-150	1528	53	60
90-180	1823	63	72
0-180	2530	87	100

T8 - 1 Lamp**Photometric Report: File # S8A-1T8-4-N-SB****Efficiency: 87.2%****28% Direct : 72% Indirect****Model Shown: 1-F32 T8 Lamp****Solid cross blade baffle****Coefficients of Utilization****Zonal Cavity Method**

Effective Floor Cavity Reflectance = .20

RC	80				70				50			
RW	70	50	30	10	70	50	30	10	50	30	10	
RCR												
0	89	89	89	89	80	80	80	80	62	62	62	
1	82	78	75	72	73	70	67	65	55	53	51	
2	74	68	63	59	66	61	57	53	48	45	43	
3	68	60	54	49	61	54	49	45	43	39	36	
4	62	53	47	42	56	48	43	38	38	34	31	
5	57	48	41	36	51	43	37	33	34	30	27	
6	53	43	36	31	47	38	33	28	31	26	23	
7	49	38	32	27	43	35	29	25	28	24	21	
8	45	35	28	24	40	31	26	22	25	21	18	
9	42	32	25	21	37	29	23	19	23	19	16	
10	39	29	23	19	35	26	21	17	21	17	14	

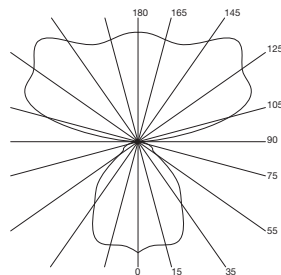
Laboratory results may not be representative of field performance.
 Ballast factors have not been applied. Additional IES files with lamping
 and control options available on line at www.metalumen.com/ies

**Job Name:**
 HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)
Catalog Number:

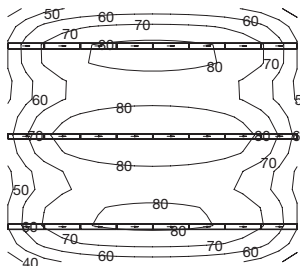
S8A2T5HOXNSB/OYWE1277N

Notes:**Type:****A1**

CALD13-24122

Photometrics**Distribution Curve****Candlepower Summary**

Angle	0.0	45	90	Output Lumens
0	757	757	757	5
5	700	713	723	64
15	620	669	729	190
25	506	598	708	279
35	382	472	518	290
45	256	317	376	245
55	171	183	154	155
65	111	107	110	108
75	57	58	71	65
85	22	22	24	18
90	16	5	2	4
95	152	172	121	126
105	274	547	642	532
115	376	680	851	642
125	478	776	867	650
135	572	776	967	598
145	649	711	839	457
155	710	715	730	332
165	739	732	720	207
175	749	737	744	66
180	746	746	746	4

Room Layout

10.7(L) x 9.1(W) x 3.0(H)m [35 x 30 x 10 ft]

Reflectances: 80/50/20

Maintenance factor: 0.85

Fixture spacing: 3.0m [10'-0"]

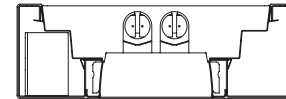
Pendant length: 457mm [18"]

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0- 30	538	9	11
0- 40	827	14	16
0- 60	1227	21	24
0- 90	1420	25	28
90-120	1302	22	26
90-130	1951	34	39
90-150	3007	52	60
90-180	3617	62	72
0-180	5037	87	100

Boxer S8A Series**Pendant****16**

T5 - 2 Lamps



Photometric Report: File # S8A-2T5-4-N-SB

Efficiency: 86.8%

28% Direct : 72% Indirect

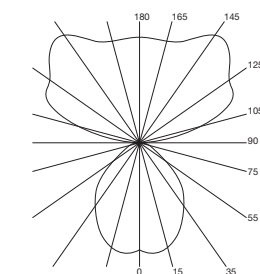
Model Shown: 2- F28 T5 Lamps

Solid cross blade baffle

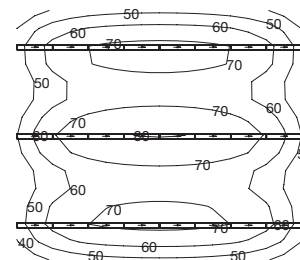
Coefficients of Utilization**Zonal Cavity Method**

Effective Floor Cavity Reflectance = .20

RC	80				70				50			
RW	70	50	30	10	70	50	30	10	50	30	10	10
RCR												
0	89	89	89	89	79	79	79	79	62	62	62	
1	81	78	74	72	72	69	67	64	54	53	51	
2	74	68	63	59	66	61	57	53	48	45	43	
3	68	60	54	49	60	54	49	45	43	39	36	
4	62	53	47	42	55	48	42	38	38	34	31	
5	57	47	41	36	51	43	37	33	34	30	27	
6	52	43	36	31	47	38	33	28	31	26	23	
7	48	38	32	27	43	35	29	25	28	24	21	
8	45	35	28	24	40	31	26	22	25	21	18	
9	42	32	25	21	37	29	23	20	23	19	16	
10	39	29	23	19	35	26	21	17	21	17	15	

 Laboratory results may not be representative of field performance.
Ballast factors have not been applied. Additional IES files with lamping
and control options available on line at www.metalumen.com/ies
Distribution Curve**Candlepower Summary**

Angle	0.0	45	90	Output Lumens
0	761	761	761	5
5	733	754	787	68
15	652	711	770	202
25	542	617	678	284
35	412	480	548	302
45	284	337	416	266
55	189	205	227	185
65	120	116	116	116
75	63	62	74	69
85	24	24	24	20
90	14	7	4	4
95	131	126	100	99
105	265	420	449	411
115	385	614	726	580
125	478	732	778	610
135	566	807	904	597
145	644	776	934	492
155	704	741	802	346
165	738	745	748	211
175	745	754	748	67
180	750	750	750	4

Room Layout

10.7(L) x 9.1(W) x 3.0(H)m [35 x 30 x 10 ft]

Reflectances: 80/50/20

Maintenance factor: 0.75

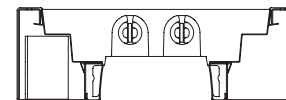
Fixture spacing: 3.0m [10'-0"]

Pendant length: 457mm [18"]

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0- 30	558	10	11
0- 40	859	15	17
0- 60	1311	23	27
0- 90	1518	26	31
90-120	1092	19	22
90-130	1702	29	35
90-150	2791	48	57
90-180	3419	59	69
0-180	4937	85	100

T8 - 2 Lamps



Photometric Report: File # S8A-2T8-4-N-SB

Efficiency: 85.1%

31% Direct : 69% Indirect

Model Shown: 2- F32 T8 Lamps

Solid cross blade baffle

Coefficients of Utilization**Zonal Cavity Method**

Effective Floor Cavity Reflectance = .20

RC	80				70				50			
RW	70	50	30	10	70	50	30	10	50	30	10	10
RCR												
0	87	87	87	87	78	78	78	78	62	62	62	
1	80	76	73	70	72	69	66	64	54	53	51	
2	73	67	62	58	65	60	56	53	48	45	43	
3	67	59	53	49	60	53	48	44	42	39	36	
4	61	52	46	41	55	47	42	38	38	34	31	
5	56	47	40	35	50	42	37	32	34	30	27	
6	52	42	35	31	46	38	32	28	31	26	23	
7	48	38	31	27	43	34	29	25	28	24	21	
8	44	34	28	24	40	31	26	22	25	21	18	
9	41	31	25	21	37	28	23	19	23	19	16	
10	38	29	23	19	34	26	21	17	21	17	15	

 Laboratory results may not be representative of field performance.
Ballast factors have not been applied. Additional IES files with lamping
and control options available on line at www.metalumen.com/ies

**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

S8A2T5HOXNSB/OYWD11277N

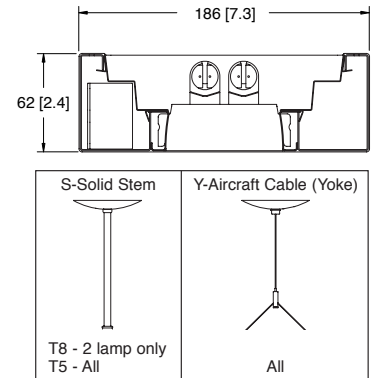
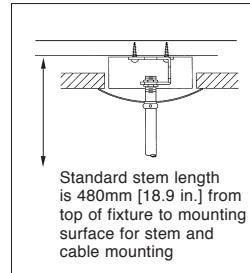
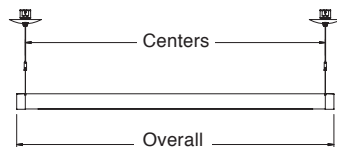
Type:**A2****Notes:**

CALD13-24122

Ordering Guide**Boxer S8A Series**
Pendant**16****Mounting Information**

Nominal Length	Overall mm [in]	Centers mm [in]
4' T5-T8	1289 [50.8]	1219 [48.0]
8' T5-T8	2508 [98.8]	2438 [96.0]

All luminaires in this series are modular. There are no start, intermediate or end units. Luminaires are provided with through wiring, quick connectors and end caps.



Photometrics on reverse

Part number example

S8A 2 T8 8 C SSL Y W E 1 277 N

Model	Number of Lamps	Lamp Type	Length	Control Up	Control Down	Mounting	Finish	Ballast	Circuitry	Voltage	Options
S8A											
Number of Lamps	Length	Control Up	Control Down	Mounting	Ballast				Circuitry	Voltage	
1	4	N None	SB Solid Cross Blade Baffle	S Solid Stem <i>(Not available with 1-T8 lamp)</i>	Standard				1 1 Circuit (Standard)	120	
2	8	C Clear Dust Cover <i>(Not available with T5HO lamps)</i>	PB Perforated Cross Blade Baffle	Y Yoke Aircraft Cable	E Electronic Instant Start T8 Programmed Rapid Start -T5/T5HO				LR Left/Right Switching (2 Lamp)	277	
3	12 (8'+4')		SL Specular Parabolic Louver	Additional mounting options available	Dimming 120v/277v dimming				IO In/Out Switching (3 Lamp)	347	
	16 (2x8')		SSL Semi Specular Parabolic Louver		D1 Advance Mark 7 (1/2/3 Lamp T8, 1/2 Lamp T5HO)						
	20 (2x8'+4')				D2 Advance Mark 10 (1/2/3 Lamp T8, 1/2 Lamp T5HO)						
	24 (3x8')				D3 Lutron Eco 10 (1/2 Lamp T8, 1/2 Lamp T5/T5HO)						
Lamp Type	28 (3x8'+4')		/O Opal Overlay for use with any of the above controls	Finish					/EN Emergency/ Night Light	Options	
T8 32W	32 (4x8')		ML Micro Linear Lens	W White					Consult factory	N None	
T5 28W	36 (4x8'+4')			C Custom Finish <i>For custom Finish specify RAL#</i>						O Occupancy Sensor	
T5HO 54W	40 (5x8')									D Daylight Sensor	
	44 (5x8'+4')		FL Frosted Lens		Battery Pack Options (120v/277v)					DOS Daylight/ Occupancy Sensor	
	48 (6x8')				BN1 Bodine B50LP (T8) BN3 Bodine LP500 (T5) BN4 Bodine LP600 (T5/T5HO/T8)						
Please refer to circuitry and sensor options guide for complete details											

Approvals

WR2-12-09

METALUMEN

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 Mailing Address: P. O. Box 1779, Guelph, Ontario N1H 6Z9
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Signature _____

Date _____



Mixed Sources
 Product group from well-managed
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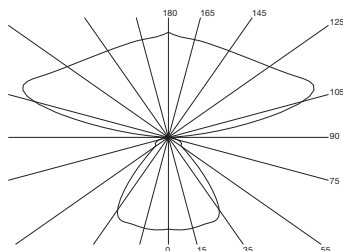


**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

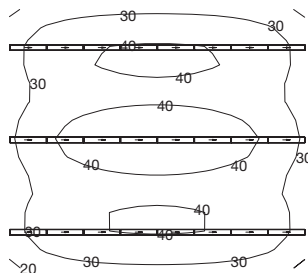
S8A2T5HOXNSB/OYWD11277N

Type:**A2****Notes:**

CALD13-24122

Photometrics**Distribution Curve****Candlepower Summary**

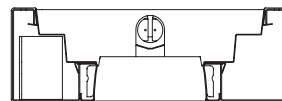
Angle	0.0	45	90	Output Lumens
0	327	327	327	2
5	324	326	331	29
15	285	305	335	87
25	233	276	337	130
35	176	234	316	151
45	119	163	153	116
55	79	82	59	68
65	51	51	52	51
75	27	27	34	30
85	10	11	11	9
90	10	3	1	2
95	82	125	80	84
105	127	369	497	360
115	183	346	510	344
125	243	352	440	311
135	293	347	400	269
145	332	354	377	223
155	359	360	365	167
165	376	366	361	104
175	376	371	363	33
180	375	375	375	2

Room Layout

10.7(L) x 9.1(W) x 3.0(H)m [35 x 30 x 10 ft]
 Reflectances: 80/50/20
 Maintenance factor: 0.85
 Fixture spacing: 3.0m [10'-0"]
 Pendant length: 457mm [18"]

Zonal Lumen Summary

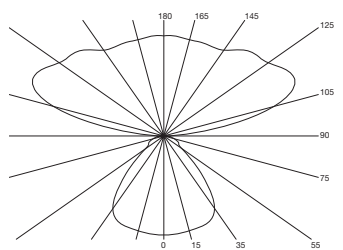
Zone	Lumens	% Lamp	% Luminaire
0- 30	248	9	10
0- 40	399	14	16
0- 60	582	20	23
0- 90	674	23	26
90-120	789	27	31
90-130	1100	38	43
90-150	1591	55	62
90-180	1898	65	74
0-180	2572	89	100

Boxer S8A series**Pendant****16****T5 - 1 Lamp****Photometric Report: File # S8A-1T5-4-N-SB****Efficiency: 88.7%****26% Direct : 74% Indirect****Model Shown: 1-F28 T5 Lamp****Solid cross blade baffle****Coefficients of Utilization****Zonal Cavity Method**

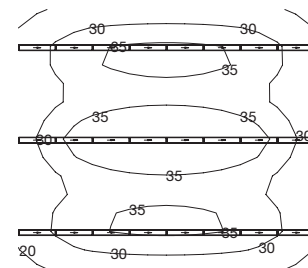
Effective Floor Cavity Reflectance = .20

RC	80				70				50			
RW 70	50	30	10		70	50	30	10		50	30	10
RCR												
0	90	90	90	90	81	81	81	81		62	62	62
1	83	79	76	73	74	71	68	65		55	53	51
2	75	69	64	60	67	62	58	54		48	45	43
3	69	61	55	50	61	55	50	45		43	39	36
4	63	54	48	42	56	49	43	39		38	34	31
5	58	48	41	36	52	43	38	33		34	30	27
6	53	43	36	31	47	39	33	29		31	27	23
7	49	39	32	28	44	35	29	25		28	24	21
8	46	35	29	24	41	32	26	22		25	21	18
9	42	32	26	21	38	29	23	20		23	19	16
10	39	29	23	19	35	27	21	18		21	17	15

Laboratory results may not be representative of field performance.
 Ballast factors have not been applied. Additional IES files with lamping
 and control options available on line at www.metalumen.com/ies

Distribution Curve**Candlepower Summary**

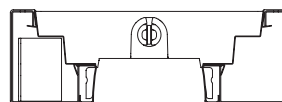
Angle	0.0	45	90	Output Lumens
0	347	347	347	2
5	332	338	347	30
15	298	314	344	90
25	244	282	342	133
35	184	239	309	153
45	125	167	184	124
55	83	92	75	77
65	54	55	57	55
75	29	29	37	33
85	11	11	12	9
90	9	4	1	2
95	80	111	85	79
105	125	323	398	309
115	175	357	500	345
125	231	357	447	312
135	278	342	421	268
145	314	341	367	214
155	342	346	355	161
165	358	351	349	100
175	359	357	353	32
180	351	351	351	2

Room Layout

10.7(L) x 9.1(W) x 3.0(H)m [35 x 30 x 10 ft]
 Reflectances: 80/50/20
 Maintenance factor: 0.75
 Fixture spacing: 3.0m [10'-0"]
 Pendant length: 457mm [18"]

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0- 30	255	9	10
0- 40	408	14	16
0- 60	609	21	24
0- 90	707	24	28
90-120	734	25	29
90-130	1046	36	41
90-150	1528	53	60
90-180	1823	63	72
0-180	2530	87	100

T8 - 1 Lamp**Photometric Report: File # S8A-1T8-4-N-SB****Efficiency: 87.2%****28% Direct : 72% Indirect****Model Shown: 1-F32 T8 Lamp****Solid cross blade baffle****Coefficients of Utilization****Zonal Cavity Method**

Effective Floor Cavity Reflectance = .20

RC	80				70				50			
RW	70	50	30	10	70	50	30	10	50	30	10	
RCR												
0	89	89	89	89	80	80	80	80	62	62	62	
1	82	78	75	72	73	70	67	65	55	53	51	
2	74	68	63	59	66	61	57	53	48	45	43	
3	68	60	54	49	61	54	49	45	43	39	36	
4	62	53	47	42	56	48	43	38	38	34	31	
5	57	48	41	36	51	43	37	33	34	30	27	
6	53	43	36	31	47	38	33	28	31	26	23	
7	49	38	32	27	43	35	29	25	28	24	21	
8	45	35	28	24	40	31	26	22	25	21	18	
9	42	32	25	21	37	29	23	19	23	19	16	
10	39	29	23	19	35	26	21	17	21	17	14	

Laboratory results may not be representative of field performance.
 Ballast factors have not been applied. Additional IES files with lamping
 and control options available on line at www.metalumen.com/ies

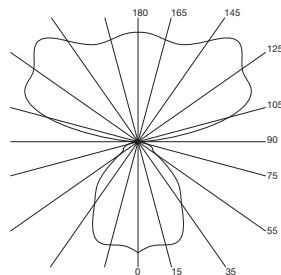
R0-01-08

**Job Name:**
 HORIZON GROUND AND FOURTH FLOOR UPFIT -
 Architect: Watson Tate Savory Architects (Columbia)
Catalog Number:

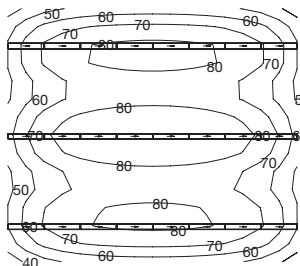
S8A2T5HOXNSB/OYWD11277N

Notes:**Type:****A2**

CALD13-24122

Photometrics**Distribution Curve****Candlepower Summary**

Angle	0.0	45	90	Output Lumens
0	757	757	757	5
5	700	713	723	64
15	620	669	729	190
25	506	598	708	279
35	382	472	518	290
45	256	317	376	245
55	171	183	154	155
65	111	107	110	108
75	57	58	71	65
85	22	22	24	18
90	16	5	2	4
95	152	172	121	126
105	274	547	642	532
115	376	680	851	642
125	478	776	867	650
135	572	776	967	598
145	649	711	839	457
155	710	715	730	332
165	739	732	720	207
175	749	737	744	66
180	746	746	746	4

Room Layout

10.7(L) x 9.1(W) x 3.0(H)m [35 x 30 x 10 ft]

Reflectances: 80/50/20

Maintenance factor: 0.85

Fixture spacing: 3.0m [10'-0"]

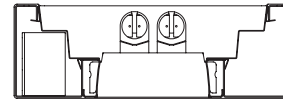
Pendant length: 457mm [18"]

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0- 30	538	9	11
0- 40	827	14	16
0- 60	1227	21	24
0- 90	1420	25	28
90-120	1302	22	26
90-130	1951	34	39
90-150	3007	52	60
90-180	3617	62	72
0-180	5037	87	100

Boxer S8A Series**Pendant****16**

T5 - 2 Lamps



Photometric Report: File # S8A-2T5-4-N-SB

Efficiency: 86.8%

28% Direct : 72% Indirect

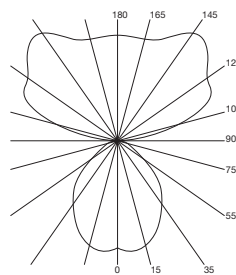
Model Shown: 2- F28 T5 Lamps

Solid cross blade baffle

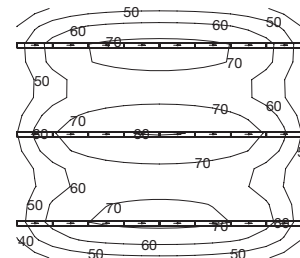
Coefficients of Utilization**Zonal Cavity Method**

Effective Floor Cavity Reflectance = .20

RC	80				70				50			
RW	70	50	30	10	70	50	30	10	50	30	10	10
RCR												
0	89	89	89	89	79	79	79	79	62	62	62	62
1	81	78	74	72	72	69	67	64	54	53	51	51
2	74	68	63	59	66	61	57	53	48	45	43	43
3	68	60	54	49	60	54	49	45	43	39	36	36
4	62	53	47	42	55	48	42	38	38	34	31	31
5	57	47	41	36	51	43	37	33	34	30	27	27
6	52	43	36	31	47	38	33	28	31	26	23	23
7	48	38	32	27	43	35	29	25	28	24	21	21
8	45	35	28	24	40	31	26	22	25	21	18	18
9	42	32	25	21	37	29	23	20	23	19	16	16
10	39	29	23	19	35	26	21	17	21	17	15	15

 Laboratory results may not be representative of field performance.
 Ballast factors have not been applied. Additional IES files with lamping
 and control options available on line at www.metalumen.com/ies
Distribution Curve**Candlepower Summary**

Angle	0.0	45	90	Output Lumens
0	761	761	761	5
5	733	754	787	68
15	652	711	770	202
25	542	617	678	284
35	412	480	548	302
45	284	337	416	266
55	189	205	227	185
65	120	116	116	116
75	63	62	74	69
85	24	24	24	20
90	14	7	4	4
95	131	126	100	99
105	265	420	449	411
115	385	614	726	580
125	478	732	778	610
135	566	807	904	597
145	644	776	934	492
155	704	741	802	346
165	738	745	748	211
175	745	754	748	67
180	750	750	750	4

Room Layout

10.7(L) x 9.1(W) x 3.0(H)m [35 x 30 x 10 ft]

Reflectances: 80/50/20

Maintenance factor: 0.75

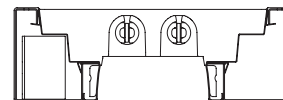
Fixture spacing: 3.0m [10'-0"]

Pendant length: 457mm [18"]

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0- 30	558	10	11
0- 40	859	15	17
0- 60	1311	23	27
0- 90	1518	26	31
90-120	1092	19	22
90-130	1702	29	35
90-150	2791	48	57
90-180	3419	59	69
0-180	4937	85	100

T8 - 2 Lamps



Photometric Report: File # S8A-2T8-4-N-SB

Efficiency: 85.1%

31% Direct : 69% Indirect

Model Shown: 2- F32 T8 Lamps

Solid cross blade baffle

Coefficients of Utilization**Zonal Cavity Method**

Effective Floor Cavity Reflectance = .20

RC	80				70				50			
RW	70	50	30	10	70	50	30	10	50	30	10	10
RCR												
0	87	87	87	87	78	78	78	78	62	62	62	62
1	80	76	73	70	72	69	66	64	54	53	51	51
2	73	67	62	58	65	60	56	53	48	45	43	43
3	67	59	53	49	60	53	48	44	42	39	36	36
4	61	52	46	41	55	47	42	38	38	34	31	31
5	56	47	40	35	50	42	37	32	34	30	27	27
6	52	42	35	31	46	38	32	28	31	26	23	23
7	48	38	31	27	43	34	29	25	28	24	21	21
8	44	34	28	24	40	31	26	22	25	21	18	18
9	41	31	25	21	37	28	23	19	23	19	16	16
10	38	29	23	19	34	26	21	17	21	17	15	15

 Laboratory results may not be representative of field performance.
 Ballast factors have not been applied. Additional IES files with lamping
 and control options available on line at www.metalumen.com/ies

**Job Name:**

HORIZON GROUND AND FOURTH FLOOR UPFIT - Architect: Watson Tate Savory Architects (Columbia)

Catalog Number:

P4D24-332G-LS36-S-EU

Type:**B1****Notes:**

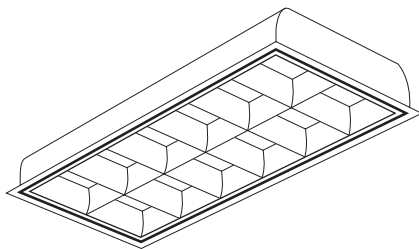
CALD13-24122

Columbia

LIGHTING

P4D24

2' x 4' DuraLouver® Parabolic / 2, 3, or 4-Lamp T5, T5HO, T8



Also available with 12, 16, 24, or 32 cells

FEATURES

- Nominal 3" deep louver
- Black reveal with full air handling capabilities
- Matte anodized low iridescent, semi-specular (MA) louver finish virtually eliminates visibility of fingerprints and construction dust
- Shallow housing height
- Lightweight

PROJECT INFORMATION

Project Name _____

Type _____

Catalog No. _____

Date _____

CONSTRUCTION

Luminaire housing and end caps are die formed code gauge cold rolled steel. Louver is formed from DuraLouver® anodized aluminum and secured in open or closed position by die formed steel hinges. Louver hinges from either side. Mechanical light trap prevents light leaks. Latches are finger-tip actuated, positive feed type, fabricated of spring steel, and completely concealed in the black reveal.

FINISH

Parts are treated with a five stage phosphate bonding process and finished with a high temperature baked white enamel. For post painted housing, suffix catalog number with PAF. Regressed slots are flat black. Anodized aluminum DuraLouver standard finish is matte anodized low iridescent (MA). Also available in low-iridescent semi-specular natural anodized aluminum (LD) or low-iridescent specular aluminum (LS).

AIR HANDLING

All supply/return and air extract functions are available as a specified option. Directional control vanes and/or extract damper features available. Air extract slots are located out of sight in end caps. See air removal data on reverse.

INSTALLATION

An access plate is furnished with each luminaire for fast wiring access from the plenum. No need to open fixture.

Product ships standard with mylar dust cover to eliminate job site contamination.

BALLASTS

Energy efficient, thermally protected, automatic resetting, Class P, high power factor, sound rated A, magnetic or electronic ballasts. CEE NEMA Premium compliant.

ELECTRICAL

Standard class "P", thermally protected, autoresetting HPF ballast, sound rated A. CEE NEMA Premium compliant. All ballast leads extend a minimum of 6" through access location. NEC/CEC-compliant ballast disconnect is standard.

CEILING COMPATIBILITY

Luminaire is available to fit exposed grid ceilings. For hard ceilings order accessory flange kit. Some options may increase fixture depth. For information on compatibility with specific ceilings, or where plenum depth is a problem, contact your Columbia representative. Four integral T-bar clips are standard. Two or four non-integral T-bar clips are available as an option.

CERTIFICATION

All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION**EXAMPLE P4D24-232G-MA26-S-EU**

P4D		24		G		-		-		-		-	
MODEL		NO. OF LAMPS		CEILING TYPE		NO. CELLS CROSSWISE		NO. CELLS LENGTHWISE		BALLAST		OPTIONS	
P4D DuraLouver Parabolic		2 Two 3 Three 4 Four		G Inverted T-bar For hard ceilings use flange kit; see accessories.		2 Two 3 Three 4 Four		6 Six 8 Eight		E Electronic T8, Instant Start 3E 3-Lamp Electronic T8, Instant Start EP Electronic T5 or T8, Programmed Start 3EP 3-Lamp Electronic T5 or T8, Programmed Start For a specific ballast vendor show as option.		GLR Fast Blow Fuse GMF Slow Blow Fuse EL Emergency Battery Pack F0735 35K 75 CRI T8 Lamps Installed F0835 35K 80 CRI T8 Lamps Installed F5835 35K 80 CRI T5 Lamps Installed C388 3-Wire Flex C488 4-Wire Flex TB Two Bulk T-bar Clips TB4 Four Bulk T-bar Clips MS9 Master/Satellite w/9' Harness PAF Paint After Fabrication NYC NYC Compliant NYCU NYC Compliant, Union Label	
SIZE		LAMP TYPE		LOUVER FINISH		AIR FUNCTIONS		VOLTAGE					
24 2' × 4'		28 4', T5: 28 Watt 32 4', T8: 32, 30, 28 or 25 Watt 54 4', T5HO: 54 or 51 Watt		MA Matte Anodized Low Iridescent Semi-Specular Aluminum (std.) LS Low Iridescent Specular Aluminum		S Static ¹ A Air Handling ¹ AV Air Handling w/Supply Vanes ¹ C Combination Supply/Extract ² CV Combination Supply Vanes/Extract ² CD Combination Supply Extract Dampers ² CVD Combination Supply Vanes Extract Dampers ² H Heat Extract ² HD Heat Extract w/Dampers ²		U 120V-277V 347 347V					

¹ Fixtures supplied with integral T-bar clips.

² Fixtures supplied with two non-integral, screw-type T-bar clips.

¹ Fixtures supplied with integral T-bar clips.

² Fixtures supplied with two non-integral, screw-type T-bar clips.

Protected by US Patent 6,582,098.
Specifications subject to change without notice.

Page 1/2 Rev. 01/26/11

**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

P4D24-332G-LS36-S-EU

Type:**B1****Notes:**

CALD13-24122

Columbia

LIGHTING

2' x 4' DuraLouver® Parabolic / 2, 3, or 4-Lamp T5, T5HO, T8

PHOTOMETRIC DATA

Test 12454 Test Date 3/14/00

LUMINAIRE DATA

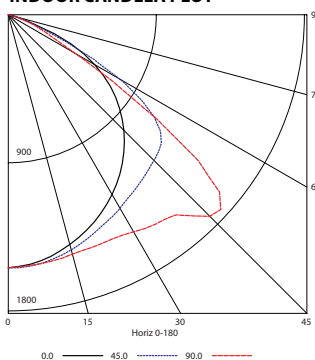
Luminaire	P4D24-232-MA26 P4D, Parabolic 2' X 4' 2 LAMP WITH 2X6 CELL MATTE ALUMINUM LOUVER
Ballast	B232I120RH
Ballast Factor	0.88
Lamp	F32T8
Lumens per Lamp	2900
Watts	56
Shielding Angle	0° = 20 90° = 29
Spacing Criterion	0° = 1.22 90° = 1.56

ZONAL LUMEN SUMMARY

Zone	Lumens	Lamp	Fixt.
0-30	1214	20.9	27.7
0-40	2057	35.5	46.9
0-60	3934	67.8	89.8
0-90	4381	75.5	100.0
0-180	4381	75.5	100.0

ENERGY DATA

Total Luminaire Efficiency	75.5%
Luminaire Efficacy Rating (LER)	69
IESNA RP-1-1993 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$3.48 based on 3000 hrs. and \$0.08 per KWH

INDOOR CANDELA PLOT**AVG. LUMINANCE (Candela/Sq. M.)**

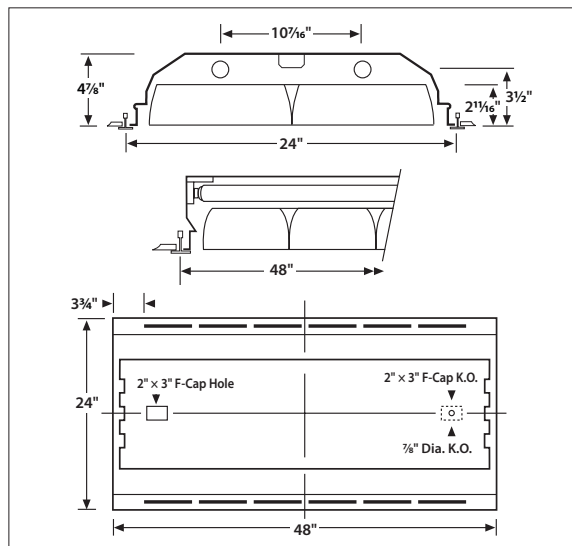
Average Luminance Angle	0.0	22.5	45.0	67.5	90.0
0	2535	2535	2535	2535	2535
30	2402	2446	2587	2785	2901
40	2352	2448	2765	3170	3418
45	2317	2466	2919	3567	4038
50	2264	2479	3116	3886	4299
55	2174	2473	3109	3328	3152
60	1999	2336	2590	1871	1541
65	1647	1866	1518	976	952
70	839	965	695	613	617
75	363	351	325	312	280
80	219	209	171	162	152
85	151	132	114	114	95

COEFFICIENTS OF UTILIZATION (%)

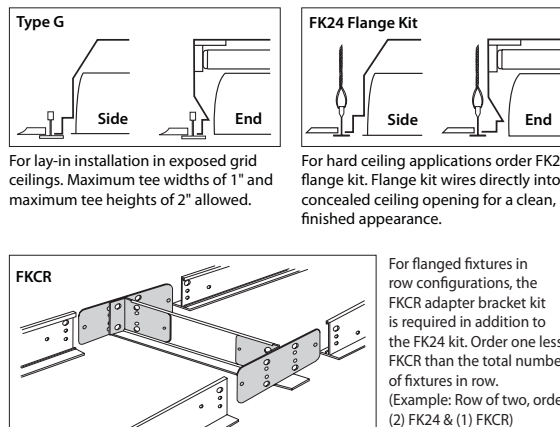
RCR	RC 80					RC 70					RC 50					RC 0				
	RW	70	50	30	10	RW	70	50	30	10	RW	70	50	30	10	RW	70	50	30	10
1	83	80	78	75	81	79	76	74	76	73	72	66								
2	77	71	66	63	75	70	65	62	67	63	60	56								
3	70	63	57	53	68	62	56	52	59	55	51	48								
4	64	56	49	45	62	55	49	44	53	48	44	41								
5	59	50	43	38	57	49	43	38	47	42	38	35								
6	54	45	38	33	53	44	38	33	43	37	33	31								
7	50	40	34	29	49	40	34	29	39	33	29	27								
8	47	37	30	26	46	36	30	26	35	30	26	24								
9	44	34	27	23	42	33	27	23	32	27	23	21								
10	41	31	25	21	40	30	25	21	30	24	21	19								

RCR = Room Cavity Ratio

RC = Effective Ceiling Cavity Reflectance RW = Wall Reflectance

DIMENSIONAL DATA

NOTE: All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

CEILING COMPATIBILITY

For lay-in installation in exposed grid ceilings. Maximum tee widths of 1" and maximum tee heights of 2" allowed.

For hard ceiling applications order FK24 flange kit. Flange kit wires directly into concealed ceiling opening for a clean, finished appearance.

Row cut out dimensions using FK24s & FKCR adapters:

Width 24 3/8", Length [48" x (# in row)] + 3/8". Example: (48" x 2) + 3/8" = 96 3/8"

Flange kit rough in dimensions for single unit only: 24 3/8" x 48"

**Job Name:**
 HORIZON GROUND AND FOURTH FLOOR UPFIT -
 Architect: Watson Tate Savory Architects (Columbia)
Catalog Number:

P4D24-432G-LS46-S-EU

Notes:**Type:****B2**

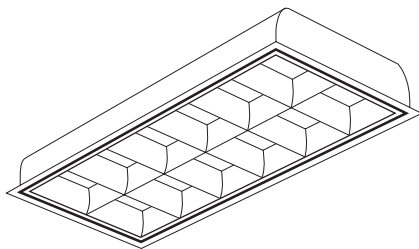
CALD13-24122

Columbia

LIGHTING

P4D24

2' x 4' DuraLouver® Parabolic / 2, 3, or 4-Lamp T5, T5HO, T8



Also available with 12, 16, 24, or 32 cells

FEATURES

- Nominal 3" deep louver
- Black reveal with full air handling capabilities
- Matte anodized low iridescent, semi-specular (MA) louver finish virtually eliminates visibility of fingerprints and construction dust
- Shallow housing height
- Lightweight

PROJECT INFORMATION

Project Name _____

Type _____

Catalog No. _____

Date _____

CONSTRUCTION

Luminaire housing and end caps are die formed code gauge cold rolled steel. Louver is formed from DuraLouver® anodized aluminum and secured in open or closed position by die formed steel hinges. Louver hinges from either side. Mechanical light trap prevents light leaks. Latches are finger-tip actuated, positive feed type, fabricated of spring steel, and completely concealed in the black reveal.

FINISH

Parts are treated with a five stage phosphate bonding process and finished with a high temperature baked white enamel. For post painted housing, suffix catalog number with PAF. Regressed slots are flat black. Anodized aluminum DuraLouver standard finish is matte anodized low iridescent (MA). Also available in low-iridescent semi-specular natural anodized aluminum (LD) or low-iridescent specular aluminum (LS).

AIR HANDLING

All supply/return and air extract functions are available as a specified option. Directional control vanes and/or extract damper features available. Air extract slots are located out of sight in end caps. See air removal data on reverse.

INSTALLATION

An access plate is furnished with each luminaire for fast wiring access from the plenum. No need to open fixture.

Product ships standard with mylar dust cover to eliminate job site contamination.

BALLASTS

Energy efficient, thermally protected, automatic resetting, Class P, high power factor, sound rated A, magnetic or electronic ballasts. CEE NEMA Premium compliant.

ELECTRICAL

Standard class "P", thermally protected, autoresetting HPF ballast, sound rated A. CEE NEMA Premium compliant. All ballast leads extend a minimum of 6" through access location. NEC/CEC-compliant ballast disconnect is standard.

CEILING COMPATIBILITY

Luminaire is available to fit exposed grid ceilings. For hard ceilings order accessory flange kit. Some options may increase fixture depth. For information on compatibility with specific ceilings, or where plenum depth is a problem, contact your Columbia representative. Four integral T-bar clips are standard. Two or four non-integral T-bar clips are available as an option.

CERTIFICATION

All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION**EXAMPLE P4D24-232G-MA26-S-EU**

P4D	24	-	G	-	-	-	-
MODEL	NO. OF LAMPS	CEILING TYPE	NO. CELLS CROSSWISE	NO. CELLS LENGTHWISE	BALLAST	OPTIONS	
P4D DuraLouver Parabolic	2 Two 3 Three 4 Four	G Inverted T-bar For hard ceilings use flange kit; see accessories.	2 Two 3 Three 4 Four	6 Six 8 Eight	E Electronic T8, Instant Start 3E 3-Lamp Electronic T8, Instant Start EP Electronic T5 or T8, Programmed Start 3EP 3-Lamp Electronic T5 or T8, Programmed Start For a specific ballast vendor show as option.	GLR Fast Blow Fuse GMF Slow Blow Fuse EL Emergency Battery Pack F0735 35K 75 CRI T8 Lamps Installed F0835 35K 80 CRI T8 Lamps Installed F5835 35K 80 CRI T5 Lamps Installed C388 3-Wire Flex C488 4-Wire Flex TB Two Bulk T-bar Clips TB4 Four Bulk T-bar Clips MS9 Master/Satellite w/9' Harness	
SIZE	LAMP TYPE	LOUVER FINISH	AIR FUNCTIONS	VOLTAGE			
24 2' x 4'	28 4', T5: 28 Watt 32 4', T8: 32, 30, 28 or 25 Watt 54 4', T5HO: 54 or 51 Watt	MA Matte Anodized Low Iridescent Semi-Specular Aluminum (std.) LS Low Iridescent Specular Aluminum	S Static¹ A Air Handling¹ AV Air Handling w/Supply Vanes¹ C Combination Supply/Extract² CV Combination Supply Vanes/	U 120V-277V 347 347V			

¹ Fixtures supplied with integral T-bar clips.

² Fixtures supplied with two non-integral, screw-type T-bar clips.

Protected by US Patent 6,582,098.
 Specifications subject to change without notice.

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ACCESSORIES
FK24 2' x 4' Single Flange Kit

FKCR Flange Kit Row Adapter Brackets

PARABOLICS / P4D24

**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

P4D24-432G-LS46-S-EU

Type:**B2****Notes:**

CALD13-24122

Columbia

LIGHTING

2' x 4' DuraLouver® Parabolic / 2, 3, or 4-Lamp T5, T5HO, T8

PHOTOMETRIC DATA

Test 12454 Test Date 3/14/00

LUMINAIRE DATA

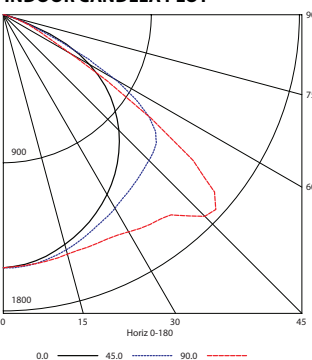
Luminaire	P4D24-232-MA26 P4D, Parabolic 2' X 4' 2 LAMP WITH 2X6 CELL MATTE ALUMINUM LOUVER
Ballast	B232I120RH
Ballast Factor	0.88
Lamp	F32T8
Lumens per Lamp	2900
Watts	56
Shielding Angle	0° = 20 90° = 29
Spacing Criterion	0° = 1.22 90° = 1.56

ZONAL LUMEN SUMMARY

Zone	Lumens	Lamp	Fixt.
0-30	1214	20.9	27.7
0-40	2057	35.5	46.9
0-60	3934	67.8	89.8
0-90	4381	75.5	100.0
0-180	4381	75.5	100.0

ENERGY DATA

Total Luminaire Efficiency	75.5%
Luminaire Efficacy Rating (LER)	69
IESNA RP-1-1993 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$3.48 based on 3000 hrs. and \$0.08 per KWH

INDOOR CANDELA PLOT**AVG. LUMINANCE (Candela/Sq. M.)**

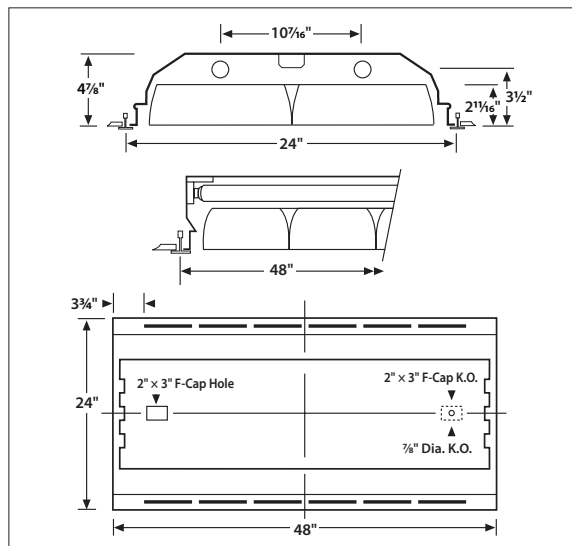
Average Luminance Angle	0.0	22.5	45.0	67.5	90.0
0	2535	2535	2535	2535	2535
30	2402	2446	2587	2785	2901
40	2352	2448	2765	3170	3418
45	2317	2466	2919	3567	4038
50	2264	2479	3116	3886	4299
55	2174	2473	3109	3328	3152
60	1999	2336	2590	1871	1541
65	1647	1866	1518	976	952
70	839	965	695	613	617
75	363	351	325	312	280
80	219	209	171	162	152
85	151	132	114	114	95

COEFFICIENTS OF UTILIZATION (%)

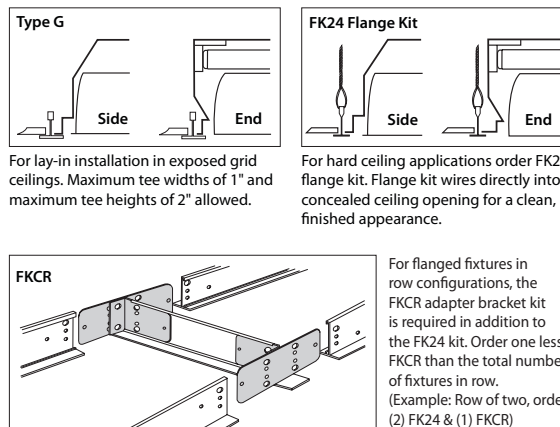
	RC												
	80				70				50				0
	RW	70	50	30	10	70	50	30	10	50	30	10	0
RCR	1	83	80	78	75	81	79	76	74	76	73	72	66
	2	77	71	66	63	75	70	65	62	67	63	60	56
	3	70	63	57	53	68	62	56	52	59	55	51	48
	4	64	56	49	45	62	55	49	44	53	48	44	41
	5	59	50	43	38	57	49	43	38	47	42	38	35
	6	54	45	38	33	53	44	38	33	43	37	33	31
	7	50	40	34	29	49	40	34	29	39	33	29	27
	8	47	37	30	26	46	36	30	26	35	30	26	24
	9	44	34	27	23	42	33	27	23	32	27	23	21
	10	41	31	25	21	40	30	25	21	30	24	21	19

RCR = Room Cavity Ratio

RC = Effective Ceiling Cavity Reflectance RW = Wall Reflectance

DIMENSIONAL DATA

NOTE: All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

CEILING COMPATIBILITY

For lay-in installation in exposed grid ceilings. Maximum tee widths of 1" and maximum tee heights of 2" allowed.

For hard ceiling applications order FK24 flange kit. Flange kit wires directly into concealed ceiling opening for a clean, finished appearance.

Row cut out dimensions using FK24s & FKCR adapters:

Width 24 3/8", Length [48" x (# in row)] + 3/8". Example: (48" x 2) + 3/8" = 96 3/8"

Flange kit rough in dimensions for single unit only: 24 3/8" x 48"

**Job Name:**

HORIZON GROUND AND FOURTH FLOOR UPFIT - Architect: Watson Tate Savory Architects (Columbia)

Catalog Number:

LF6CFH132EB/6CFH

Notes:**Type:****D**

CALD13-24122



6" Horizontal Compact Fluorescent Open Downlight

LF6CFH132EB

One 26W, 32W or 42W Triple Tube

4-pin Lamp

120V- 277V

APPLICATIONS:

The LF6CFH triple tube series offers a horizontally lamped compact fluorescent open downlight fixture. The multi-watt, multi-volt ballast provides the ability to change wattages by simply changing the lamp. This luminaire is ideal for a wide variety of medium to high ceiling applications including commercial, retail, hospitality, and design-build.

HOUSING:

One-piece 22-gauge galvanneal steel platform. Prewired J-box with snap-on cover for easy access. Vented at lamp tip and socket for maximum light output. Same housing accommodates downlight, wall wash downlight, and lensed downlight reflectors.

REFLECTOR:

High purity aluminum, Alzak, iridescence suppressed, semi-diffuse reflector. Self-trim standard. Painted white self-trim (WT) available as option. Baffled units standard with painted white self-trim.

BALLAST:

One (1) compact fluorescent Class 'P' electronic multi-volt (120V through 277V) HPF ballast suitable for operating all 26W, 32W, and 42W triple tube lamps. All ballast options are equipped with EOL protection. Accessible from below ceiling. Contact technical support for 347V.

Order housing, reflector and accessories separately.

SOCKET:

One (1) injection molded socket suitable for 26W, 32W and 42W triple tube lamps (vented).

LAMP:

Use one (1) 26W (GX24q-3 base), 32W (GX24q-3 base), or 42W (GX24q-4 base) 4-pin triple tube compact fluorescent lamp. Lamp furnished by others or as option below. Use only GE or OSRAM Sylvania lamps.

INSTALLATION:

Universal adjustable mounting brackets accept 1/2" EMT conduit or 1 1/2" or 3/4" lathing channel (by others) or Prescolite 2 bar hangers (B24 or B6). Light commercial bar hangers included.

LABELS:

UL listed or UL/CSA listed with CDN option for damp locations. Approved for through wiring (4 in, 4 out). Non-IC type.

LAMP INCLUDED OPTION:

Specify lamp type T (Triple 4-pin) and temperature as shown below.

DATE: _____ TYPE: _____

FIRM NAME: _____

PROJECT: _____

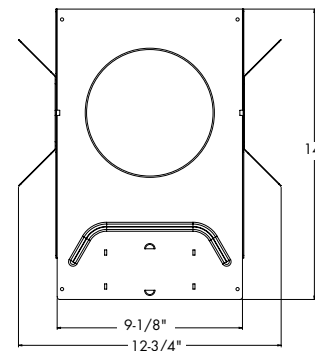
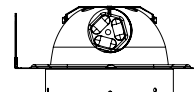
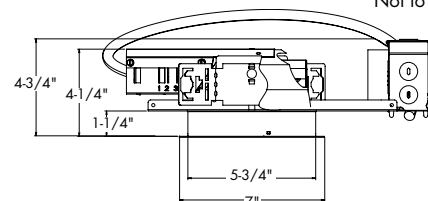
LiteFrame® **WIFT²**


Ceiling Cutout: 6-1/4"

Maximum Ceiling Thickness: 1-1/4"

For conversion to millimeters, multiply inches by 25.4

Not to Scale

**CATALOG NUMBER:**

EXAMPLE: LF6CFH132EB 6CFH1 LP32T30K

HOUSING	WATTAGE	BALLAST TYPE	VOLTAGE	HOUSING OPTIONS	REFLECTOR	REFLECTOR COLOR	TRIM OPTIONS	ACCESSORIES
☐ LF6CFH1	☐ 32 26/32/42W Triple Tube	☐ EB Electronic	☐ Blank 120V/277V	☐ CP ² Chicago Plenum	☐ 6CFH1 6" Alzak Semi-Diffuse	☐ BLANK Clear Alzak	☐ TRG Trim ring gasket (factory installed)	☐ B24 Set of (2) 24" bar hangers for T-bar ceilings
		☐ CDN	☐ CDN 347V ⁴	☐ FSDFA Fuse kit installed at factory		☐ CG Champagne Gold Alzak	☐ WT White flange (Alzak only)	☐ B6 Set of (2) bar hangers for ceiling joists up to 24" centers
				☐ RIF1 ^{1,2} Radio interference filter (single circuit)		☐ PW Pewter Alzak		☐ FSDFI Fuse kit for field installation
				☐ EMR ^{1,2} Emergency battery pack with remote test switch and indicator light		☐ WE Wheat Alzak		☐ SCA6D Sloped ceiling adapter (see note on back page)
				☐ DM Electronic Analog Dimming Ballast to 3%, 4-wire, 0-10V (120V-277V)		☐ LW Light Wheat Alzak		LAMP ACCESSORIES
				☐ MW26 Max Wattage label, 26W		☐ BB Black baffle (with clear Alzak upper reflector)		☐ LP -wattage=26, 32, 42
				☐ MW32 Max Wattage label, 32W		☐ WB White baffle (with clear Alzak upper reflector)		-type= T (Triple 4-pin)
				☐ EM ^{1,2} Emergency Battery Pack with Integral test switch and indicator light.				-temp= 27K, 30K, 35K, 41K (Kelvin)
				☐ SYL ³ Osram Sylvania Ballast (available only for standard EB option)				*Example: LP32T30K
				☐ ECDM ⁵ Lutron EcoSystem or 3-wire line voltage dimming ballast (120V-277V). Dims to 5%.				
				☐ 7DM Advance Mark 7™ Dimming Ballast to 5%, 4-wire, 0-10V, analog (120V thru 277V)(specify wattage)				
				☐ XDM Advance Mark 10™ Dimming Ballast to 5%, 2-wire line voltage (specify supply voltage/wattage)				
				☐ HDM ⁶ Lutron Hi-Lume® Dimming Ballast to 1%, 3-wire line voltage (specify voltage)				
				☐ SMT Philips Advance SmartMate® ballast				
				☐ WIH wiHUBB® Enabled (see page 3)				

¹RIF1, EMR, and EM options not offered in combination²CP not offered in combination with RIF1, EMR, or EM³Available for Osram Sylvania Quick 60+® Limited Warranty when used with Osram lamp(s). See www.prescolite.com for details.⁴Dimming option not available for 347V⁵For 42W specify LF6CFH142EBECDM⁶Not available for 42W

A Division of Hubbell Lighting, Inc.

In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product.

Web: www.prescolite.com • Tech Support: (888) 777-4832**LFR-CFL-025**

**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

LF6CFH132EB/6CFH

Type:**D****Notes:**

CALD13-24122

PHOTOMETRIC DATA

LiteFrame® - 6" Horizontal Triple Tube Open Downlight - LF6CFH132 Series

BALLAST DATA
wiHUBB®

	26W Triple			32W Triple			42W Triple		
	120V	277V	347V	120V	277V	347V	120V	277V	347V
Fixture comes with a pre-installed In-Fixture Module (1 relay, 0-10V) compatible with the HBA wiHUBB system. Actual dimming requires the selection of 0-10V dimming ballast as well. Consult factory for compatibility with EM fixtures.									
Input Current (Amps)	0.24	0.11	0.14	0.30	0.13	0.17	0.38	0.17	0.22
Input Frequency in Hz	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Power Factor	<.98	<.98	<.95	<.98	<.98	<.95	<.98	<.98	<.95
Ballast Factor	<1.1	<1.1	<1.02	<.98	<.98	<.98	<.98	<.98	<1.0
Total Harmonic Distortion	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%

LAMP DATA

	26W Triple	32W Triple	42W Triple
Rated Watts	1710	2400	3200
Rated Lumens	1710	2400	3200
Efficacy (LPW)	66	75	76
Rated Life	12,000	12,000	12,000
CRI	82	82	82
Min. Starting Temp.	32°F	32°F	32°F

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	Average 0°	Average 90°	Average 180°
45°	45652	40674	45315
55°	33290	23615	31105
65°	6495	3812	7342
75°	692	692	692
85°	685	0	0

Test No. 2307

AVERAGE INITIAL FOOTCANDLES ON WORKPLANE

Assumptions:

1. Ceiling 80% Wall 50% Floor 20%
2. 4 Luminaires evenly spaced in the center of the room.
3. The room is square and has a width and length equal to twice the lamp spacing (LS).
4. RCR is Room Cavity Ratio.
5. Dirt and Lumen Depreciation Factors are 1.0.
6. Ballast Factor is 1.0 for ballasted fixtures.

LS (Feet)	(Footcandles)		
	RCR1	RCR3	RCR7
7.0	37	29	20
8.0	28	23	15
9.0	22	18	12
10.0	18	14	10
11.0	15	12	8
12.0	13	10	7
13.0	11	9	6
14.0	9	7	5
15.0	8	6	4

Test No. 2307

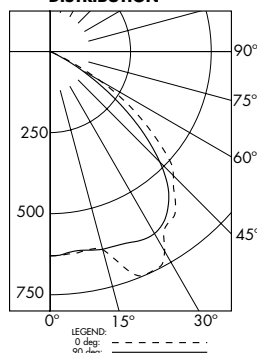
LF6CFH132EB/6CFH1 Clear Alzak Reflector

Lamp: 1-CF32DT/E/IN/SYLVANIA

Spacing Criteria:

- 0°=1.5
90°=1.5

Efficiency: 69.3%

**CANDLEPOWER
DISTRIBUTION**

LEGEND:
0 deg. ———
90 deg. - - - - -
Test No. 2307

**CANDLEPOWER
SUMMARY**

Angle	0°	45°	90°
0	630	630	630
5	627	625	623
10	623	621	622
15	633	623	631
20	722	650	634
25	748	678	645
30	711	665	648
35	642	630	625
40	605	582	573
45	541	523	482
50	447	446	360
55	320	298	227
60	179	142	109
65	46	39	27
70	8	8	8
75	3	3	3
80	2	1	1
85	1	1	0
90	0	0	0

Note: Use of horizontally-lamped open downlights with amalgam-based CFL lamps in air-handling plenums is not recommended because cool air flow over the lamps will result in reduced light output. Prescolite recommends vertical lamp downlights or use of the regressed lensed trim option for horizontal downlights in these applications to reduce this effect. Refer to Prescolite White Paper WP0003 at www.prescolite.com for more information.

COEFFICIENTS OF UTILIZATION Zonal Cavity Method

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance														
	80%			70%			50%			30%			10%		
	20% Effective Floor Cavity Reflectance														
	% Wall Reflectance														
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	
1	.77	.75	.73	.71	.76	.73	.71	.69	.70	.69	.67	.68	.66	.65	
2	.72	.67	.63	.60	.70	.66	.62	.59	.63	.61	.58	.61	.59	.57	
3	.66	.60	.55	.52	.65	.59	.55	.51	.57	.53	.50	.55	.52	.50	
4	.61	.54	.49	.45	.60	.53	.48	.44	.51	.47	.44	.50	.46	.43	
5	.57	.49	.43	.39	.55	.48	.43	.39	.47	.42	.39	.45	.41	.38	
6	.52	.44	.38	.34	.51	.43	.38	.34	.42	.38	.34	.41	.37	.34	
7	.49	.40	.34	.31	.47	.39	.34	.30	.38	.34	.30	.37	.33	.30	
8	.45	.37	.31	.27	.44	.36	.31	.27	.35	.30	.27	.34	.30	.27	
9	.42	.33	.28	.25	.41	.33	.28	.24	.32	.28	.24	.32	.27	.24	
10	.40	.31	.26	.22	.39	.30	.26	.22	.30	.25	.22	.29	.25	.22	

LF6CFH132EB/6CFH1

Test No. 2307

NOTESRefer to www.prescolite.com for additional photometric tests (IES Files).

When ordering a sloped ceiling adapter, specify the degree of slope in 5° increments, max. of 35°. For a more precise degree or wet ceiling applications, please contact factory. Sloped ceiling adapter and housing must be installed at the same time prior to finish ceiling installation.



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**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

D432EB/4D5

Notes:**Type:****E**

CALD13-24122



4" Vertical CFL Open & Wall Wash Downlight

D413EB, D418EB or D432EB

One 13W, 18W, 26W or 32W Triple.
One 13W or 18W Quad 4-Pin
120V - 277V, 347V

Featuring VirtualSource vs Reflectors

APPLICATIONS:

The Architektür D4 offers a vertical, nominal 4" specification-grade compact fluorescent downlight and wall wash fixture that provides superior brightness control. This luminaire is ideal for a wide variety of low to medium ceiling height applications including commercial, retail, and hospitality.

HOUSING:

One-piece, 18-gauge post-pointed CRS platform. Large plaster frame provides superior housing stability in the ceiling. Same housing accommodates downlight and wall wash reflectors. Prewired J-box with snap-on cover for easy access. J-box is elevated and angled 15° to provide 95% visibility from below the ceiling after installation for easy maintenance.

REFLECTOR:

High purity aluminum reflector with iridescence suppressed Alzak finish. Open trims retained with 5-finger grip clip. Wall wash trims retained with integral leaf spring clips and can be rotated 360°. Virtual Source Lighting® optical design provides optimum efficiency and superior brightness control for visual comfort. Wall wash reflectors feature patent-pending VirtuWall Source™ optics for superior wall washing.

BALLAST:

One (1) compact fluorescent Class 'P' electronic HPF, universal voltage (120V through 277V) ballast. End of life protection standard. Accessible from above or below ceiling. Numerous dimming options available.

LAMP:

One (1) 13W (GX24q-1 base), one (1) 18W (GX24q-2 base), one (1) 26W (GX24q-3 base), or one (1) 32W (GX24q-3 base) 4-pin compact fluorescent lamp. Above or below ceiling relamping capability. Lamp furnished by others or as option below. Use only GE or Osram Sylvania lamps in triple tube lamp applications except wall wash. Use only Osram Sylvania with wall wash applications.

SOCKET:

Injection molded vented lamp socket adjusts to two positions, accommodating various lamp sizes and ensuring precise lamp position. Die cast aluminum heat sink socket cup with tool-less, positive-positioning, Patented reflector-locking spring (U.S. Patent No. 7,740,384).

INSTALLATION:

Universal adjustable mounting brackets accommodate 1/2" EMT conduit; 1 1/2" or 3/4" lathing channel (by others); or Prescolite 24" bar hangers (B24 or B6).

LABELS:

UL, CSA listed for damp locations. Approved for through wiring. Thermally protected. Non-IC rated.

LABELS:

UL Listed or UL/CSA listed with CDN option for damp locations. Approved for through wiring. Thermally protected. Non-IC rated.

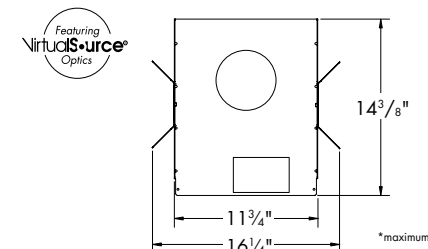
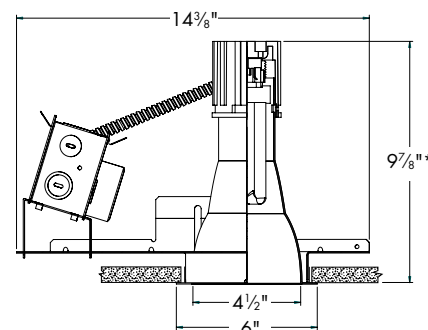
LABELS:

Specify lamp type T (Triple 4-pin) or Q4 (Quad 4-pin) and temperature as shown below.

DATE: _____ TYPE: _____

FIRM NAME: _____

PROJECT: _____

**CATALOG NUMBER:**

EXAMPLE: D432EBDM 4D5MFC LP32T30K B24

HOUSING	HOUSING OPTIONS	HOUSING OPTIONS	REFLECTOR	REFLECTOR COLOR	ACCESSORIES
☐ D413EB 4", (1) 13W Quad or triple tube, multi-volt electronic ballast ☐ D418EB 4", (1) 18W Quad or triple tube, multi-volt electronic ballast ☒ D432EB 4", (1) 26W or 32W triple tube, multi-volt electronic ballast	☐ CDN Canadian electrical code compliant ballast disconnect ☐ CDN 347V³ Canadian electrical code compliant ballast disconnect ☐ EMR^{3, 4, 7} Emergency battery pack with remote test switch and indicator light ☐ FSDFA Fuse kit installed at factory ☐ RIF1^{4, 10} Radio interference filter (single circuit) ☐ MW26⁶ Max Wattage label, 26W ☐ CP⁴ Chicago Plenum ☐ DM Electronic analog dimming ballast to 5%, 4-wire 0-10V, analog (120V-277V)	☐ ECDM¹ Lutron EcoSystem or 3-wire line voltage dimming ballast (120-277V). Dims to 5%. ☐ HDM^{1, 2, 5} Lutron Hi-Lume® Dimming Ballast to 1%, 3-wire line voltage (specify supply voltage/wattage) ☐ 2DM^{1, 5} Lutron Tu-Wire® Dimming Ballast to 5%, 2-wire line voltage (120V only) ☐ 7DM Advance Mark 7™ Dimming Ballast to 3%, 4-wire 0-10V, analog (120V-277V) ☐ SYL⁸ Osram Sylvania Ballast (available only for standard EB option) ☐ XDM¹ Advance Mark 10™ Dimming Ballast to 5%, 2-wire line voltage (specify supply voltage/wattage) ☐ SMT¹⁰ Philips Advance SmartMate® ballast ☐ WH wiHUBB® Enabled (see page 3)	☐ 4D4 vs Open Alzak reflector (13W or 18W triple) ☒ 4D5 vs Open Alzak reflector (13W or 18W quad, or 26W or 32W triple) REFLECTOR FINISH ☐ BLANK Specular Alzak ☐ SS Semi-specular Alzak ☐ MFC American Matte™ Alzak REFLECTOR OPTIONS ☐ TRG Trim ring gasket (factory installed) ☐ WT Painted white self-flange ☐ WW VirtuWall Source™ Wall wash	☐ BLANK Clear Alzak ☐ CG Champagne Gold Alzak ☐ WE Wheat Alzak ☐ LW Light Wheat Alzak ☐ PW Pewter Alzak ☐ BL Black Alzak LAMP ACCESSORIES ☐ LP -wattage= 13, 18, 26, 32 -type= T (Triple 4-pin) or Q4 (Quad 4-pin [18W only]) -temp= 27K, 30K, 35K, 41K (Kelvin) *Example: LP32T30K	☐ B24 Set of two (2) 24" bar hangers for T-bar ceilings ☐ B6 Set of two (2) bar hangers for ceiling joists up to 24" centers ☐ FSDFI Fuse kit for field installation ☐ SCA5⁹ Sloped ceiling adapter for 4" housing (specify degree of slope and type of ceiling.)

¹Not available with 13W CFL lamp²Not available with 18W CFL lamp³347V not available with EM or dimming options.⁴RIF1 and CP not offered in combination with EMR option⁵For 26W CFL lamp specify D426EB

and add desired Lutron dimming option suffix

⁶D432EB only⁷Remote Mount⁸Available for Osram Sylvania Quick 60+™ Limited Warranty when used with Osram lamp(s). See

www.prescolite.com for details.

⁹SCA must be installed at initial installation (wherever SCA is used)¹⁰Not available for 347V

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In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product.
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ARCH-CFL-066

**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

D432EB/4D5

Notes:**Type:****E**

CALD13-24122

PHOTOMETRIC DATA

Architektür D4 - 4" Vertical Open & Wall Wash Downlight

BALLAST DATA

	18W Triple			26W Triple			32W Triple		
	120V	277V	347V	120V	277V	347V	120V	277V	347V
Total System Watts	20W	20W	21W	29W	29W	31W	36W	36W	36W
Input Current (Amps)	0.17	0.08	0.06	0.24	0.11	0.09	0.31	0.13	0.11
Input Frequency in Hz	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Power Factor	>97%	>97%	>98%	>98%	>98%	>98%	>98%	>98%	>98%
Ballast Factor	>105%	>105%	>100%	>110%	>110%	>102%	>98%	>98%	>98%
Total Harmonic Distortion	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%
Minimum Starting Temp	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)

D432EB-4D5 with Clear Alzak® Reflector

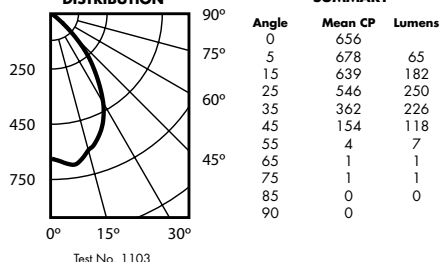
Lamp: One 32W Triple

Spacing Criteria: 1.1

Efficiency: 38.6%

LAMP DATA

	18W triple	26W triple	32W triple
Rated Watts	1200	1800	2400
Rated Lumens	67	69	75
Efficacy (LPW)	10,000 hours	10,000 hours	10,000 hours
Rated Life	82	82	82
CRI	0° F	0° F	0° F
Minimum Starting Temp.			

CANDLEPOWER DISTRIBUTION**LUMINANCE DATA IN CANDELA/SQ. METER**

Angle in Vertical	Average 0°
45°	21218
55°	679
65°	231
75°	376
85°	0

AVERAGE INITIAL FOOTCANDLESMultiple Units (Square Array)
Ceiling 80% Wall 50% Floor 20%

SPACING	RCR1	RCR3	RCR7
7.0	15	13	9
8.0	12	10	7
9.0	9	8	6
10.0	7	6	5
11.0	6	5	4
12.0	5	4	3
13.0	4	4	3
14.0	4	3	2
15.0	3	3	2

COEFFICIENTS OF UTILIZATION Zonal Cavity Method

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance																								
	80%					70%					50%					30%					10%				
	20% Effective Floor Cavity Reflectance																								
	% Wall Reflectance																								
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10								
1	44	43	42	41	43	42	41	40	40	39	39	39	38	38	37	37	36								
2	41	39	38	36	40	39	37	36	37	36	35	36	35	34	35	34	33								
3	39	36	34	33	38	36	34	32	35	33	32	34	32	31	33	32	31								
4	37	34	31	30	36	33	31	29	32	30	29	31	30	29	31	29	28								
5	35	31	29	27	34	31	28	27	30	28	27	29	28	26	29	27	26								
6	33	29	26	25	32	29	26	25	28	26	24	27	26	24	27	25	24								
7	31	27	24	23	30	27	24	23	26	24	22	25	24	22	25	23	22								
8	29	25	23	21	29	25	22	21	24	22	21	24	22	21	24	22	21								
9	28	23	21	19	27	23	21	19	23	21	19	23	21	19	22	19	18								
10	26	22	20	18	26	22	20	18	22	19	18	21	19	18	21	19	18								

D432EB-4D5

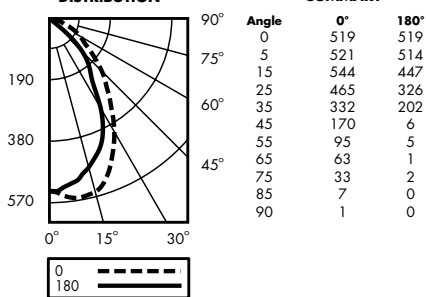
Test No. 1103

NOTESRefer to www.prescolite.com for additional photometric tests (IES Files).**D432EB-4D5WW with Clear Alzak® Reflector**

Lamp: One 32W Triple

Spacing Criteria: 1.0

Efficiency: 27.7%

CANDLEPOWER DISTRIBUTION**LUMINANCE DATA IN CANDELA/SQ. METER**

Angle in Vertical	Average 0°	Average 90°	Average 180°
45°	31998	11670	1129
55°	22044	2088	1160
65°	19841	945	315
75°	16970	514	1028
85°	10690	0	0

MULTIPLE UNITS									
1'	2'	3'	4'	5'	6'	7'	8'	9'	10'

3' DISTANCE FIXTURE MOUNTED OUT FROM WALLS									
FOOTCANDLE DISTRIBUTION ON WALL SURFACE									
1	45	35	17	07	03	62	58	62	52
2	57	46	25	12	06	84	81	84	69
3	69	55	30	15	06	104	95	104	83
4	73	63	40	19	09	116	117	116	92
5	61	56	41	26	12	119	116	119	87
6	46	44	35	24	16	103	105	103	80
7	34	33	27	21	15	89	91	89	68
8	26	25	22	17	14	76	78	76	58
9	20	20	18	15	12	65	67	65	49

D432EB-4D5WW

Test No. 1501

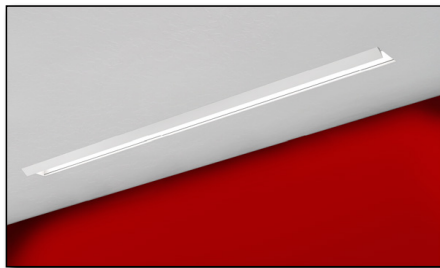


D7 | accolade⁷

Semi-Recessed



accolade⁷



semi-recessed kicker

SHIELDING

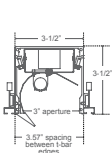


semi-recessed kicker trim flange

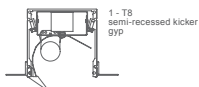


semi-recessed kicker t-bar

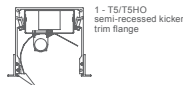
LAMPING (cross section)



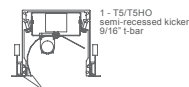
1 - T5/T5HO
semi-recessed kicker
9/16\"/>



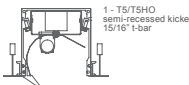
1 - T8
semi-recessed kicker
gyp



1 - T5/T5HO
semi-recessed kicker
trim flange



1 - T5/T5HO
semi-recessed kicker
9/16\"/>



1 - T5/T5HO
semi-recessed kicker
15/16\"/>

Multiple configurations available.

Do not use this document as a substitute for mounting instructions.

MOUNTING



Individual Fixtures: nominal lengths

2 = 2ft individual	
3 = 3ft individual	
4 = 4ft individual	
6 = 6ft individual	
8 = 8ft individual	
9 = 9ft individual	
12 = 12ft individual	

Standard Rows: nominal lengths

R16 = 16ft row	
R20 = 20ft row	
R24 = 24ft row	
R28 = 28ft row	
R32 = 32ft row	
R36 = 36ft row	
R40 = 40ft row	

Nominal (definition): In design engineering terminology, nominal lengths are used for purposes of general identification - the actual size of a fixture may be shorter or longer as a result of lamp lengths. Example: 4' nom. suspended T5 may be 48.25\"/>

NOTE: Fixture lengths vary by mounting type. Lengths shown to left show standard nominal configurations. 4' lamps are applied where possible, however, row configurations are engineered for optimal lamp spacing and/or staggered overlap which often requires mixing lamps of various lengths. Therefore 2', 3' and 4' lamp lengths may be used in the same row, a light assumes mixing lamp lengths is acceptable unless specified in writing.

See Technical section at end of catalog for further explanation. See www.alights.com for exact lengths available or contact factory. Custom configurations and row lengths available - consult factory.

D7 | accolade⁷

Semi-Recessed

Mounting: Gypsum/Hard Ceiling: No visible flange. Flange is mudded over and painted for flangeless appearance. Choose finish for kicker. T5 or T8 lamping available for all lengths.

Trim Flange: Visible powdercoated flange extending 1/2\"/>

T-Bar: 9/16\"/>

Lengths: Luminaires available as individual fixtures in 2' to 12' nominal lengths. Individual fixtures cannot be field-joined or altered. Continuous lengths longer than 12' may be specified as one of the following...

Row: R__ (add nominal length in feet) Specify length in nominal feet. Standard configurations apply. Nominal rows are shorter (T5) or longer (T8) in actual length as a result of lamp lengths.

Example: A nominal 36' row begins as: **D7R36**

Modified Row: M__ (add exact length in inches) If fixture must be exact, specify modified length in inches, to the nearest hundredth of an inch. Lamping configuration is modified to fit specified size. Submittals required.

Example: A recessed row that must be exactly 36' of illuminated length (not including endcaps) begins as: **D7M432.00**

If there are space constraints (ie. wall-to-wall installation), submit drawings with dimensions. Coordination with factory is required.

Integral Ballast: T5/T5HO: 120-227V universal, low-profile electronic, high power factor, program start, sound rating A, inherent thermal protection, UL listed Class P, <10% THD. Dimming: specify manufacturer, model/series and voltage.

T8: 120-227V universal, low-profile electronic, choose low, standard or high power factor, instant start, sound rating A, inherent thermal protection, UL listed Class P, <10% THD. Specify if program start or custom ballast factor is required.

LED: See LED Addendum at www.alights.com for current specs. Add color temperature of 30, 35 or 40k to low, standard or high output nomenclature. As LED technology rapidly evolves, the LED Addendum will show our most up-to-date specs for low, standard and high output options.

Finish: Electrostatically applied powder coat finish. Finish applies to semi-recessed kicker. The same finish will also apply to XP trim flange. All other mounting options are unpainted as flange not visible.

Listing: UL/CUL. Damp Location.

Further Documentation: Photometric files, installation guides and exact lengths/configurations may be found at www.alights.com or contact factory.

Downlight Shielding:



...form following light

a light reserves the right to make improvements by changing future design or options without notice.

www.alights.com

interior

Project	Type	Quantity
Lengths: (nominal)		
2	2'	For lengths other than nominal, consult factory. Lengths vary by mounting type and lamping configurations. For specific lengths, see www.alights.com or contact factory for list of engineered lengths. T8 + any T-Bar mounting (T, X or N) only available 48ft.
3	3'	
4	4'	
6	6'	
8	8'	
9	9'	
12	12'	
R	Row > 12': Specify nominal row length in feet.	
M	Modified row > 12'. When exact length is required. Specify <i>illuminated</i> length in inches to nearest hundredth.	
Down Lamping: (in cross section)		
S	(1) Standard T5 lamp	
H	(1) T5HO lamp	
T8L	(1) T8 lamp - low output BF <0.8	
T8S	(1) T8 lamp - std output BF 0.8-1.0	
T8H	(1) T8 lamp - high output BF >1.1	
LL	LED low output - add color temp: 30, 35 or 40k (see addendum for specs)	
LS	LED std output - add color temp: 30, 35 or 40k (see addendum for specs)	
LH	LED high output - add color temp: 30, 35 or 40k (see addendum for specs)	
Voltage:		
U	Universal 120V - 277V	
1	120V - specify when dimming	
2	277V - specify when dimming	
3	347V	
4	480V	
Down Light Shielding:		
O	Open aperture with semi-recessed extruded kicker	
C	Custom distribution (consult factory)	
Mounting:		
G	Gyp - for flangeless appearance (T5 or T8 any lengths)	Fixtures made to ceiling/wall type. Coordinate with ceiling/wall contractor. Mounting flanges are not field interchangeable.
XP	Trim flange (T5 or T8 any lengths)	
T	9/16\"/>	
X	15/16\"/>	
N	9/16\"/>	
C	Custom mounting (submittals required, consult factory)	
*T8 + any T-Bar type (T, X or N) is not available in 2', 3', 4', or 6' lengths. Choose 6' or longer.		
Housing Finish:		
T	a-lightatium™	Color chosen will apply to the recessed kicker for all mounting options. Color will also apply to the trim flange option.
W	Satin white	
B	Satin black	
E	Textured eggshell white	
O	Other RAL powdercoat color - specify RAL# (may increase lead time)	
C	Custom manufactured color (consult factory - will significantly increase lead time)	
Options:		
D	Dimming - specify manufacturer, model/series and voltage	
E	Emergency - specify model/series or lumens (avg n/a on lengths 3' or less)	
F	External fusing	
M	Multi-circuit - configuration details required	
N	New York City code	
C	Chicago plenum code	
O	Occupancy sensor	
P	Photocell/daylight sensor	

Submitted by CAL+D
Carolina Architectural Lighting and Design

Job Name:
HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)

Catalog Number:
D74HUOXW

Type:
F

CALD13-24122

**Job Name:**

HORIZON GROUND AND FOURTH FLOOR UPFIT - Architect: Watson Tate Savory Architects (Columbia)

Catalog Number:

CS4-232-EU/CSWG4

Notes:**Type:****G1**

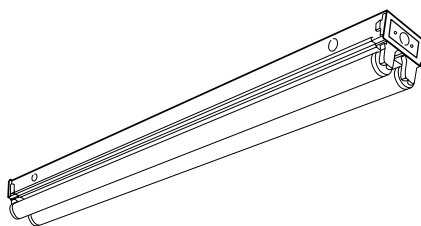
CALD13-24122

Columbia

LIGHTING

CS BI-PIN 2L

2', 3', 4', 6', 8' Straight-Sided Utility Channel / 1 or 2-Lamp T8 or T5

**FEATURES**

- Available 2', 3', 4' or 8'
- Heavy die formed steel channel
- Rotary lock lampholders for positive lamp contact
- Channel ends double as joiners
- Individual or row mounting. Surface or suspended
- Ballast covers on 4' and 8' units are secured with ¼-turn fasteners

PROJECT INFORMATION

Project Name _____

Type _____

Catalog No. _____

Date _____

CONSTRUCTION

Steel housing die formed with heat sink embossments for cooler running ballasts. Socket saddles are factory installed.

FINISH

White painted parts are treated with a five stage phosphate bonding process and finished with a high reflectance baked enamel.

BALLASTS

Energy efficient, thermally protected, automatic resetting, Class P, high power factor, sound rated A, unless otherwise specified. CEE NEMA Premium compliant.

ELECTRICAL

Standard class "P," thermally protected, auto-resetting HPF ballast, sound rated A. CEE NEMA Premium compliant. All ballast leads extend a minimum of 6" through access location. NEC/CEC-compliant ballast disconnect is standard.

CERTIFICATION

All luminaires are built to UL 1598 standards and bear appropriate UL and CUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION**EXAMPLE CS4-232-EU-GLR**

CS						
MODEL	SIZE	NO. OF LAMPS IN CROSS SECTION	LAMP TYPE	BALLAST	VOLTAGE	OPTIONS
CS Straight-Sided Utility Channel	2 2'	1 One	14 2', T5: 14 Watt	E Electronic T8, Instant Start	U 120V-277V	GLR Fast Blow Fuse
	3 3'	2 Two	17 2', T8: 17 Watt		347 347V	GMF Slow Blow Fuse
	4 4'		24 2', T5: 24 Watt	4E 4-Lamp Electronic T8, Instant Start		EL Emergency Battery Pack (Not in 2')
	6 6' (Tandem length)		25 3', T8: 25 Watt	EP Electronic T5, Programmed Start (std. T5/TSHO, optional T8)		BC Branch Circuit Plug-on Wiring System. See options section for details.
	8 8' (Tandem length)		28 4', T5: 28 Watt			PAF Paint After Fabrication
			32 4', T8: 32, 30, 28 or 25 Watt			NYC NYC Compliant
			54 4', T5: 54 Watt	For a specific ballast vendor, show as option.		NYCU NYC Compliant, Union Label

**ACCESSORIES
(ORDER SEPARATELY)**

- ITB4** Hanger for Close Mounting on a T-Bar Ceiling
- CSZT** Zip Tee Hanger - 1½" Spacer on T-Bar Ceiling
- CSZH** Slide Tong Hanger with ⅞" Hole
- CSWG4** 4' Wire Guard, 2 Required for 8' Fixture
- CSWG3** 3' Wire Guard, 2 Required for 6' Fixture
- CSRA4** 4' Asymmetric Reflector
- CSR4** 4' Symmetric Reflector

For complete list of options and accessories, see options and accessories section.

**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

CS4-232-EU/CSWG4

Type:**G1****Notes:**

CALD13-24122

Columbia

LIGHTING

2', 3', 4', 6', 8' Straight-Sided Utility Channel / 1 or 2-Lamp T8 or T5

PHOTOMETRIC DATA

Test LSI11147 Test Date 1/6/06

LUMINAIRE DATA

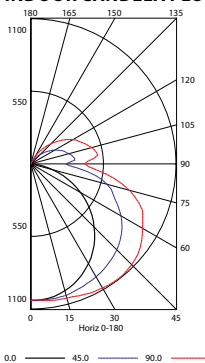
Luminaire	CS4-232-EB8-PAF CS Striplight 4' Striplight with white painted reflector
Ballast	B232I120RH
Ballast Factor	0.88
Lamp	F32T8
Lumens per Lamp	2900
Watts	62
Mounting	Surface
Shielding Angle	0° = 0 90° = 0
Spacing Criterion	0° = 1.25 90° = 1.61
Luminous Opening in Feet	Length: 3.92 Width: 0.35 Height: 0.08

ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
0-30	853	14.7	15.3
0-40	1456	25.1	26.2
0-60	2878	49.6	51.7
0-90	4493	77.5	80.8
0-180	5561	95.9	100.0

ENERGY DATA

Total Luminaire Efficiency	95.9%
Luminaire Efficacy Rating (LER)	79
IESNA RP-1-1993 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$3.04 based on 3000 hrs. and \$0.08 per KWH

INDOOR CANDELA PLOT**AVG. LUMINANCE (Candela/Sq. Ft.)**

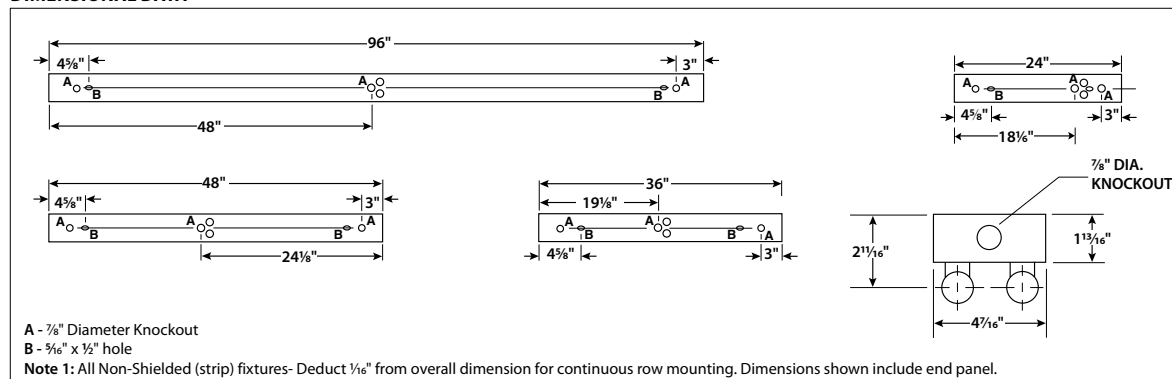
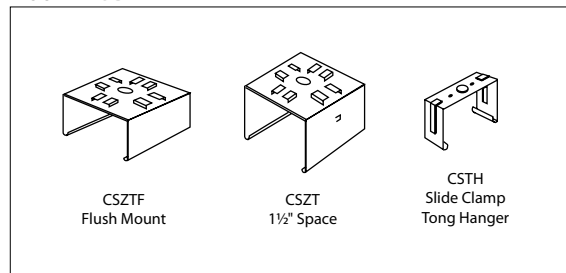
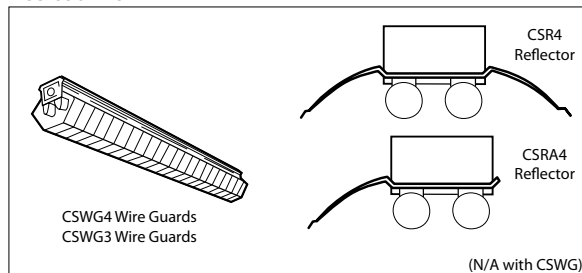
	0.0	22.5	45.0	67.5	90.0
0	8104	8104	8104	8104	8104
30	7817	7827	8125	8485	8691
40	7562	7701	8450	9084	9393
45	7361	7692	8689	9430	9762
50	7197	7691	8938	9795	10168
55	6938	7731	9214	10180	10549
60	6593	7871	9487	10534	10993
65	6189	8042	9743	11103	11660
70	5647	8113	10219	11816	12301
75	4732	8073	10939	12193	12645
80	3725	8568	11168	12212	12651
85	1752	8614	10549	11795	12309

COEFFICIENTS OF UTILIZATION (%)

		RC														RC													
		80					70					50					0												
		RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0												
RCR	1	97	92	86	82	93	88	83	79	80	76	73	59																
	2	87	78	70	64	83	74	68	62	68	62	58	46																
	3	79	67	59	52	74	64	56	50	59	52	47	37																
	4	71	59	50	43	68	56	48	41	51	44	39	31																
	5	65	52	43	36	62	50	41	35	46	38	33	26																
	6	60	46	37	31	57	45	36	30	41	34	28	22																
	7	55	42	33	27	53	40	32	26	37	30	25	20																
	8	51	38	29	24	49	36	28	23	34	27	22	17																
	9	48	35	26	21	45	33	26	20	31	24	19	15																
	10	45	32	24	19	43	31	23	18	28	22	17	14																

RCR = Room Cavity Ratio

RC = Effective Ceiling Cavity Reflectance RW = Wall Reflectance

DIMENSIONAL DATA**MOUNTING DATA****ACCESSORIES****NOTE:** All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

Submitted by CAL+D



**Carolina
Architectural
Lighting and
Design**

www.calighting.com

Job Name:

HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)

Catalog Number:

18969.25

Notes:

Type:

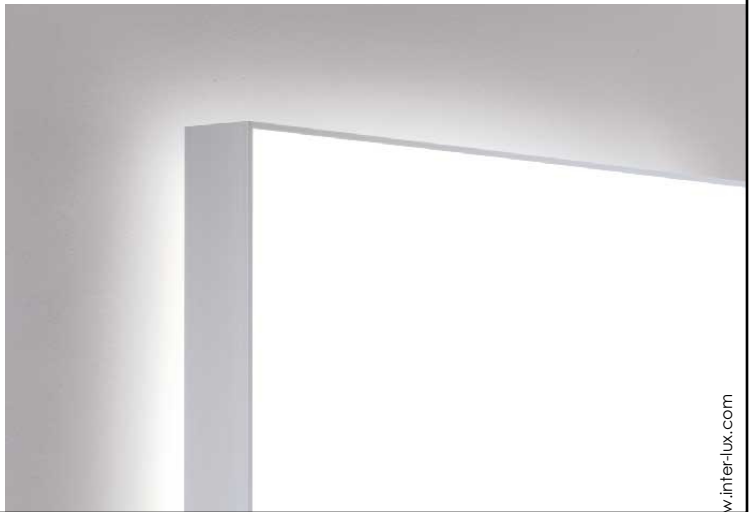
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CALD13-24122



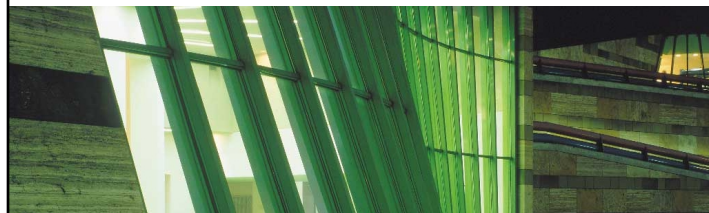
CLEAR

ALL/CEILING LIGHTS



www.inter-lux.com

Submitted by CAL+D  Carolina Architectural Lighting and Design www.carlighting.com	Job Name: HORIZON GROUND AND FOURTH FLOOR UPFIT - Architect: Watson Tate Savory Architects (Columbia)	Catalog Number: 18969.25 Notes:	Type: H CALD13-24122
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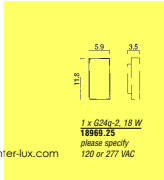
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WALL/CEILING LIGHTS

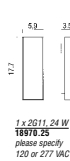
CLEAR
satín aluminum anodized
glass white
direct/indirect light
with electronic ballast
120 / 277 VAC

contact factory for
dimming options

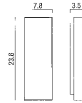
ADA



1 x 2042-2, 18 W
18969.25
please specify
120 or 277 VAC



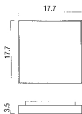
1 x 2011, 24 W
18970.25
please specify
120 or 277 VAC



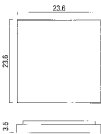
1 x 2011, 36 W
18971.25



1 x 2010, 18 ~ 24 W
15885.25
please specify
120 or 277 VAC



1 x 20X13, 40 W
15886.25
2 x 2011, 24 W
25887.25



1 x 20X13, 22 W
and
1 x 20X13, 40 W
15886.25
2 x 2011, 36 W
25889.25
3 x 2011, 36 W
35889.25



www.inter-lux.com

Submitted by CAL+D



**Carolina
Architectural
Lighting and
Design**

www.calighting.com

Job Name:

HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)

Catalog Number:

WW4-D-1-ET8-120/277-NS-R-BW-4

Notes:

Type:

J

CALD13-24122

Wall Wash WW4

one or two T5 or T5HO lamps

or one or two T8 lamps



Linear Lighting

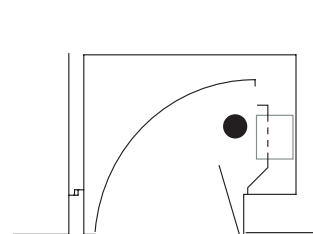
**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

WW4-D-1-ET8-120/277-NS-R-BW-4

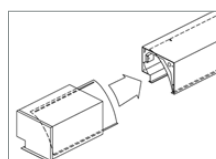
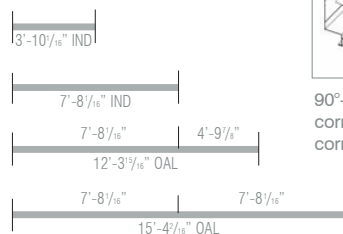
Type:**J****Notes:**

CALD13-24122

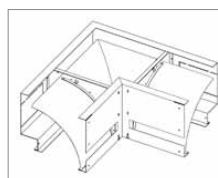
Wall Wash WW4

T5 options**T8 options**

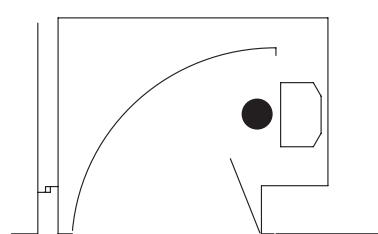
T5 Wall Wash
6" H. x 8" W.
5 1/2" aperture



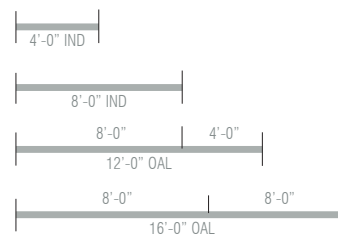
Telescoping sleeves
and corners allow 1"–6"
adjustment per sleeve.



90°–135° inside and outside
corners standard. Custom
corners consult factory.



T8 Wall Wash
8" H. x 10" W.
7 1/8" aperture



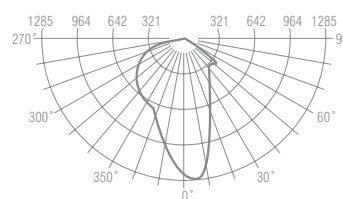
For design use only. Not for construction. See www.lineartg.com for engineering drawings specific to job.

- Pre-painted white steel housing
- 1 or 2 T5 or T5HO lamps
- 1 or 2 T8 lamps
- Up to 8' one-piece reflector factory installed
- 90° to 135° corners
- Telescoping sleeves available for wall-to-wall installation
- Factory pre-wired
- UL/CUL labels
- Weight per foot: 7 lbs. approx.

WW4-D-2-T5-NS

Efficiency: 55.6%

Max. candlepower at 15°: 1284



90° Plane

See www.lineartg.com for complete photometrics.

Catalog No.	Dir.	Lamps	Ballast	Voltage	Shielding	Mounting	Color	Add'l options	Row length
WW4 Fixture	D	1 or 2	2SG 2 lamps, staggered†	120 or 277 347	NS No Shielding	R Recessed	BW Baked White <i>See color chart for add'l colors</i>	NO No Option AR Air Return CB Checkerboard Circuit "A" or "B" EC Emergency Circuit ED Electronic Dimming* EM Emergency Ballast** FU Fusing ISB10 Inst Start Blst <10%†† LS LutronEcoSys Sensor Feed NL Night Light PBIS Premium Blst Inst Start PBPS Premium Blst Prog Start PSB10 Prog Start Blst <10%†† RFI Radio Freq Int Suprsr SC Separate Circuits SG Staggered Lamps† SF Special Feature <i>please define</i>	2', 3', 4', 5', 6', 8'
	Lamps & Electrical Options				Mechanical & Aesthetic Options				Feet
	Direction	Lamps		Ballast	Shielding	Mounting	Color	Add'l	Feet

* Dimming ballasts may not be available for all T5/T5HO lamp lengths. Consult factory. †† ISB10 and PSB10 available with T8 only. † Available with 2-lamp configuration only.
** EM packs may not be available for all T5/T5HO lamp lengths. Consult factory.

**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

SEDRBN

Notes:

Type:**X**

CALD13-24122



SE Series

Cast Aluminum LED Exit Sign

FEATURES**Application**

The SE Series offers bright and even LED illumination in an attractive die-cast aluminum housing. Features include UL listing for 2 hour runtime, AC or Emergency operation with optional Spectron® self-test/self-diagnostic circuitry. Special Wording (SW) option also allows for customization of the stencil field to convey important information. Housing designed for quick and easy installation with low energy consumption. Damp location listed. Includes a Vandal/Tamper Resistant (VTR) option. The VTR option includes a polycarbonate faceshield and tamper resistant screws.

Construction

Housing, exit face and matching canopy constructed of high-strength die-cast aluminum. Sign finish is textured white, white with brushed aluminum face, black, or black with brushed aluminum face. Diffuser finish is color-matched silk-screened coating which provides optimized LED light output. Exit face design in single or double face with red or green letters and break-out chevrons. Break-out chevrons are also included with the special worded option. Exit stencil with 6" letters and 3/4" stroke.

Installation

Universal mounting (wall, ceiling, end) to standard 3 1/2" or 4" octagon or square electrical box by use of easily removed, template configured knockouts. Cast aluminum canopy and universal mounting plate included. All mounting hardware is fully concealed.

Illumination

Exit face illumination is provided by energy savings, long life red or green LEDs. Exceeds UL 924 requirements for brightness and uniformity. 10 year LED life.

Compliances

UL 924 Listed (Meets 1998 brightness and uniformity requirements)

UL Damp Location Listed

NFPA 70

NFPA 101

U.S. Patents No. 6,050,013 and 6,082,031.

Warranty

Unit and electronics: 5 years full.

Catalog Number	
Comments	Type

DIE-CAST LED Exit
**ORDERING GUIDE**

SE	S	R	W	E	I	-	FM	-	SW48
Model		Letter Color		Operation			Options		
SE		R Red G Green		Blank AC Only E Emergency			2C 2-Circuit Operation 2, 5 FAP Fire Alarm Panel Interface 1, 3, 5, 6 FM Flasher Module 1, 6 AF Audible/Flasher Module 1, 6 DC Remote DC Operation 2, 4, 5 24K 220-240 VAC, 60Hz Operation VTR Vandal/tamper resistant option 7		
	Faces	Housing Finish		Self-Diagnostic					Special Wording Options
	S Single D Double	W White B Black WN White with brushed face BN Black with brushed face		Blank None I Spectron® Self-Testing / Self-Diagnostic Electronics					See Page 3 for Special Wording Options

ACCESSORIES

FCM-R	Kit converts AC red letter models to emergency operation
FCM-G	Kit converts AC green letter models to emergency operation
PMCW	12 1/2" Pendant mounting kit (white)
PMCB	12 1/2" Pendant mounting kit (black)
WGLX	Wire guard (Wall mount)
WGLXC	Wire guard (Ceiling mount)
WGLXE	Wire guard (End mount)
VRS3	Vandal resistant shield

NOTES

- For use with Spectron® self-diagnostic models only.
- For use with AC models only.
- Operates with 24-volt AC or DC fire alarm panels.
- For emergency illumination of sign from remote 6-24 VDC power sources.
- DC option may not be specified with -2C or -FAP options.
- AF, -FM and -FAP options may not be specified together.
- Provides polycarbonate face shield and tamper-proof screws.



Hubbell Lighting, Inc.

**Job Name:**HORIZON GROUND AND FOURTH FLOOR UPFIT -
Architect: Watson Tate Savory Architects (Columbia)**Catalog Number:**

SEDRBN

Notes:**Type:****X**

CALD13-24122



SE Series

Cast Aluminum LED Exit Sign

SPECIFICATIONS**Electronics**

Available with AC, emergency and Spectron® self-test/ self-diagnostic electronics option. Emergency and self-diagnostic models equipped with isolation transformer and fully automatic constant current solid state charger with sealed maintenance-free nickel-cadmium battery. All emergency models with 2-hour minimum run-time. All components mounted inside housing. Includes test switch and AC-on indicator. Transient/ surge protection, low voltage disconnect and AC lock-out features included. Battery re-charge within UL time standards. Includes pre-stripped AC input pigtail leads.

Power Consumption

	120VAC	277VAC
Red AC Only Models:	2.6 Watts	2.6 Watts
Green AC Only Models:	2.1 Watts	2.1 Watts
Red Emergency Models:	3.8 Watts	3.8 Watts
Green Emergency Models:	3.5 Watts	3.5 Watts

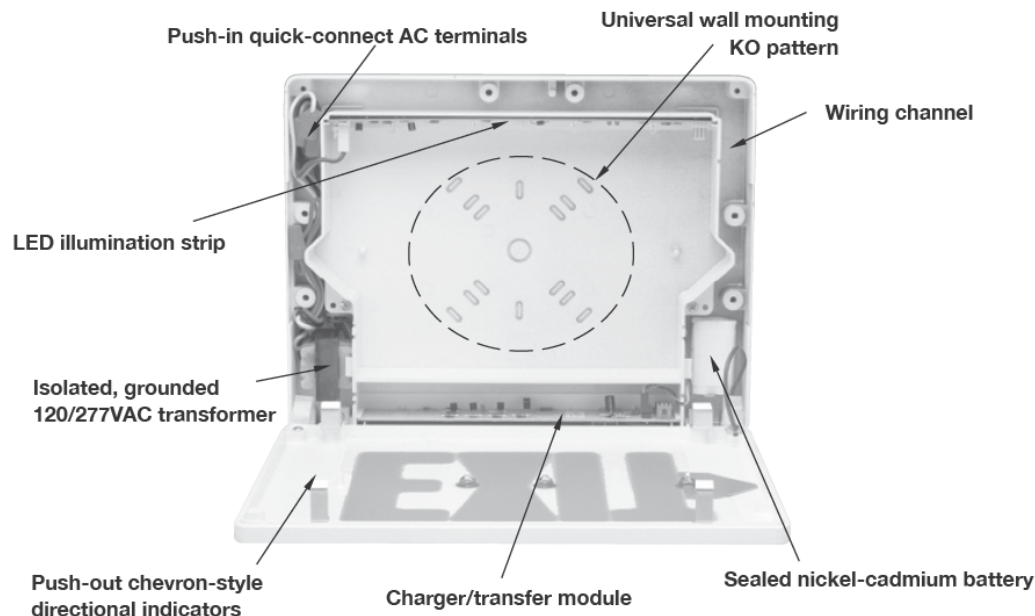
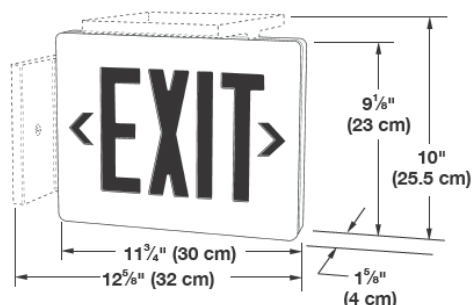
* Wattage figures include LED lamps, transformer and electronics power requirements. LED lamp assemblies (red or green) consume less than 1 watt.

Power Factor, Average: .8 (lagging)

Battery Type: Maintenance-free sealed nickel cadmium battery

AC Input: 120/277VAC, 60 Hz. (all models)

Operating Temperature Range: 0°C to 40°C (32°F to 104°F)

DIMENSIONS

Hubbell Lighting, Inc.