ADDENDUM 1

DATE: June 01, 2020

PROJECT: UCT Emergency Light Code Compliance & LEF Retrofit

ITB NO: 744-R2014

OWNER: The University of Texas Health Science Center at Houston

TO: Prospective Proposers

This Addendum forms part of and modifies Proposal Documents dated, May 08, 2020, with amendments and additions noted below.

1. Clarifications. Questions and Answers:

- 1. Question: Please confirm your intent and direction for the use of Johnson Controls as the building UT System proprietary fire alarm controls vendor for the University Center Tower.

 Answer: Existing controls is a JCI system. They must be used for tie in and programming.
- 2. Question: The Demolition and Renovation RCPs in the Base, Alt 1, Alt 2, Alt 3 and Alt 4 drawings call to remove and replace the existing ceiling with a new 2'x2' drop ceiling system. During the pre-construction site visit it was noted that the existing HVAC grilles are 1'x1'. There is no Mechanical scope shown in the project documents. Please advise if new HVAC grilles are to be provided to fit the new ceiling layouts. If so, please advise on new grille selections and neck sizes of existing ductwork.

Answer: Refer to A12-22 General Note 6. Assume neck size to be 8 inches. Supply grille spec provided as addendum.

3. The Demolition and Renovation RCPs in the Base, Alt 1, Alt 2, Alt 3 and Alt 4 drawings call to remove and replace the existing ceiling with a new 2'x2' drop ceiling system. The project drawings do not reflect any fire alarm scope associated with ceiling mounted FA devices. Please advise if existing ceiling mounted FA devices are to be removed and reinstalled for construction or replaced with new. Please provide information for quantity and layout of existing ceiling mounted FA devices.

Answer: Fire alarm devices to be removed and reset in same locations. Contractor to confirm counts

4. The Demolition and Renovation RCPs in the Base, Alt 1, Alt 2, Alt 3 and Alt 4 drawings call to remove and replace the existing ceiling with a new 2'x2' drop ceiling system. The project drawings do not reflect any fire sprinkler scope. Please advise if the existing sprinkler heads are to remain in place or are to be relocated as necessary to fall in the center of tiles the new drop ceiling layout. If necessary, please provide information for current locations of existing sprinkler heads.

Answer: If needed sprinkler heads to be moved for ceiling layouts. Contractor to verify counts

5. The Demolition and Renovation RCPs in the Base, Alt 1, Alt 2, Alt 3 and Alt 4 drawings call to remove and replace the existing ceiling with a new 2'x2' drop ceiling system. The project

drawings do not provide any direction for removing and reinstalling the existing ceiling mounted exit signs. Please advise if existing ceiling mounted exit signs are to be removed from the demoed ceiling and installed in new. If so, please provide information for locations and quantities of existing ceiling mounted exit signs.

Answer: If needed exit signs should be re-installed in same locations. Contractor to verify counts.

6. The Demolition and Renovation RCPs in the Base, Alt 1, Alt 2, Alt 3 and Alt 4 drawings call to remove and replace the existing ceiling with a new 2'x2' drop ceiling system. During the preconstruction site visit, it was noted that there are miscellaneous ceiling mounted devices(speakers, IT devices, etc...) mounted to the existing ceiling. Please advise if these devices are to be removed and reinstalled in the new ceiling. If so, please advise on types and quantities of these miscellaneous devices.

Answer: If needed, all ceiling mount devices are to be removed and reset in same locations. Contractor to verify counts and devices

- 7. Keynote DM2 on the Architectural pages of the Base Scope and all Alternate drawings call to install a new 2'x2' ceiling grid system with 2'x2' Cortega tile. There is no model information given for the type of ceiling grid or Cortega tile (i.e., Armstrong Prelude XL 15/16" grid, Armstrong Cortega Angled Tegular/Square Lay-in tile). Please advise.

 Answer: Refer to specifications
- 8. Please advise on working hours for the project. Will work be able to be performed during regular hours (7a-4p) or will it need to be performed fully or partially after hours and weekends?

 Answer: Work hours: Mon-Fri 5pm-7am, Saturday-Sunday all day.
- 9. Due to COVID-19, the building is currently unoccupied. Please advise if there is an estimated duration of the building remaining unoccupied and if work will be able to be performed during this time. This will affect pricing based on potential phasing due to occupants returning to the building.

Answer: Provide deductive alternate pricing to perform work during normal hours. Mon-Fri 7am-5pm

- 10. Are the existing exit light fixtures going to be replaced or reinstalled in the new ceiling tile? Answer: Existing exit signs to be re-installed
- 11. Are we installing emergency power to the exit lights or keeping them on the existing circuit? Answer: Exit signs are on emergency circuit already
- 12. Is the new panel installation (21EHB on drawing E0-21) part of the base bid, or is it an alternate because it is also on alternate 1, 2, 3, and 4?

 Answer: New panel cost to be applied to base bid
- 13. Are offerors to include Section 6, Pricing and Delivery Schedule, in a separate sealed envelope or should it be included in the copy marked "original"? Answer: No, it should be included in a copy marked "original". A revised Section 6 will be included with Addendum 1.
- 14. Please confirm that Section 6, Pricing and Delivery Schedule, should be included as part of the complete electronic copy submitted on the flash drive.

 Answer: Confirmed.

- 15. The requested *UTHeath Vendor and Contractor Representation Form to Comply with COVID-19 Procedures* as posted on the provided website includes a due date of March 18, 2020. Should offerors use this version of the form or is there an updated version that should be used? Answer: Answer: Yes.
- 16. Is the *UTHeath Vendor and Contractor Representation Form to Comply with COVID-19 Procedures* to be included within our proposal submission or is it only to be submitted separately to Procurement Services via email? If contractors already have a completed form on file, should a new form be submitted?

Answer: UTHeath Vendor and Contractor Representation Form to Comply with COVID-19 Procedures form can be submitted separately via email. No, if contractors have already filed form a new one is not needed.

- 17. In light of requirements in place due to COVID-19, and to allow for appropriate social distancing within the contractor's organization, would UTHealth please consider accepting an all-online submission instead of hard copies (e.g., via email)?
 - Answer: No, at this time hard copies will be required. All contractors on-site will be required to practice social distances and wear a mask.
- 18. If online submission is acceptable, please confirm electronic signatures are accepted rather than manual signatures under pen and scanned.

 Answer: Online submission not accepted.
- 19. Base drawing A12-22 note 06 states diffusers are to be relocated and new flex it to be provided. Please provide Mechanical drawings, as this is very difficult to quantify and/or price. Answer: Addendum drawings showing mechanical supplies to be demolished, and new supply & returns to be installed. Coordinate with all other trades for final locations. Test and balance to be performed by UTH 3rd party.
- 20. Please advise if stair landing light fixtures are required per base drawing A12-22 note 07? Answer: Stairwell light fixtures to be removed from base and alternate pricing.
- 21. Are the existing exit light fixtures going to be replaced or reinstalled in the new ceiling tile? Answer: Exit light fixtures to be re-installed in same locations
- 22. Are the exit lights staying on the existing circuit or is emergency power needed?

 Answer: Exit lights are already on emergency circuit and shall remain on emergency circuit
- 23. Are we to assume that the new panel installation (21EHB on drawing E0-21) is part of the base bid, or is it an alternate because it is shown on alternate No.1, 2,3 and 4?

 Answer: 21EHB panel cost should be included in the base bid only
- 24. For electricians, do they need to dispose of the old fixtures properly? Will a return receipt be required by UTHSC?
 - Answer: Refer to Appendix C Special Conditions section 1.17 Fluorescent or mercury containing lamps and ballasts for proper disposal procedures.
- 25. Is there a certain phasing plan that needs to be followed? How many rooms and/or areas will be provided at a time? Please be specific!
 - Answer: It is the contractor's responsibility to provide a schedule/phasing schedule to the owner

b a A	hat is the likelihood that multiple floors can be worked on at the same time? Please provide a seline for the amount of area allowed to be worked on per floor. Should any alternates be cepted. Is wer: For this bid, the base bid and alternate schedules should be created separately. In the ent alternates are accepted negotiations on the schedule and cost savings for time can be made

CORTEGA®/CORTEGA® Second Look®

Square Lay-in & Tegular medium texture

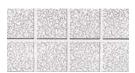


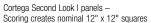
 $\label{lem:contents} \mbox{Cortega} \mbox{$^{\circledcirc}$ offers a medium-textured, economical solution with standard acoustical absorption.}$

KEY SELECTION ATTRIBUTES

- Economical
- Non-directional visual reduces scrap and installation time (excludes Second Look items)
- · Geometric Scored Visuals (Second Look items)

FACE VIEW







Cortega Second Look II panels – Scoring creates nominal 24" x 24" squares

oning creates nominal 12 x 12 squares Scotting creates nominal 24 x 24 square

COLORS Colored ceilings are dye-lotted and should be segregated by dye lot. Do not mix.





DETAILS (Other Suspension Systems compatible. Refer to listing on page 174.)











1. Cortega Square Lay-in

TYPICAL APPLICATIONS

· Storage and supply rooms

· Discount stores

· Utility Rooms

- 2. Cortega Beveled Tegular
- 3. Cortega Second Look
- 4. Cortega Lay-in with Prelude 15/16" suspension system
- 5. Cortega Beveled Tegular with Suprafine 9/16" suspension system



CORTEGA®/CORTEGA® Second Look®

Square Lay-in & Tegular medium texture

VISUAL SELECTION

LOCATION DEPENDENT

PERFORMANCE SELECTION Dots represent high level of performance

\$\$\$\$

Edge	Susp. Dwg. Pgs. 295-299	Item	Dimensions		UL Cla Acou		ii Total Acoustics ¹	Fire Rating	ಕ	Mold	+:	Certified Low VOC Emissions	bility	cled	Recycled Program	anty
Profile	armstrongceilings. com/catdwgs		(Inches)		NRC -	F ÇAC =	Total Acous	め	Light Reflect	Anti-Mold & Mildew	Sag Resist	Certi VOC I	Durability	Recycled Content	4	Warranty
CORTEGA® Square L	ay-in															
15/16" Square Lay-in	1	770 770M	24 x 24 x 5/8" 600 x 600 x 15mm		0.55	33	-	Class A	0.82	-	Std	•	Std	Std	•	1-Yr
	1	824	24 x 24 x 5/8"		0.55	35 •	_	Fire Guard™	0.82	_	Std	•	Std	Std	•	1-Yr
	1	769 ** 769M	24 x 48 x 5/8" 600 x 1200 x 15mr	n	0.55	35 •	-	Class A	0.82	-	Std	•	Std	Std	•	1-Yr
	1	823	24 x 48 x 5/8"		0.55	35 •	-	Fire Guard	0.82	-	Std	•	Std	Std	•	1-Yr
	1	747	24 x 48 x 5/8"		0.55	40	_	Class A	0.82	_	Std	•	Std	Std	•	1-Yr
	1	773 773M	20 x 60 x 5/8" 500 x 1500 x 15mr	n	0.55	35 •	_	Class A	0.82	_	Std	•	Std	Std	•	1-Yr
	1	772 772M	24 x 60 x 5/8" 600 x 1500 x 15mr	n	0.55	35 •	-	Class A	0.82	-	Std	•	Std	Std	•	1-Yr
CORTEGA Tegular	1	Other Size Panels	W: 12" - 30" / L: 1 5/8" Thick	8" – 72"	N/A	N/A	_	Class A	0.82	-	Std	•	Std	Std	•	1-Yr
15/16" Angled Tegular	12	704 704M	24 x 24 x 5/8" 600 x 600 x 15mm		0.55	33	_	Class A	0.82	-	Std	•	Std	Std	•	1-Yr
	12	816	24 x 24 x 5/8"		0.55	35 •	-	Fire Guard	0.82	-	Std	•	Std	Std	•	1-Yr
	12	703	24 x 48 x 5/8"		0.55	35	-	Class A	0.82	-	Std	•	Std	Std	•	1-Yr
9/16" Beveled Tegular	29, 44, 48, 52, 56, 60	2195	24 x 24 x 5/8"		0.55	35*	_	Class A	0.82	_	Std	•	Std	Std	•	1-Yr
CORTEGA® Second L	29, 44, 48, 52, 56, 60	Other Size Panels	W: 12" - 30" / L: 1 5/8" Thick	8" – 72"	N/A	N/A	-	Class A	0.82	-	Std	•	Std	Std	•	1-Yr
15/16" Angled Tegular	11	2765	24 x 48 x 3/4"		0.55	35	_	Class A	0.82	-	Std	•	Std	Std	•	1-Yr
CORTEGA Second Lo													01.1			
15/16" Angled Tegular	11	2758	24 x 48 x 3/4"		0.55	40		Fire Guard	0.82	_	Std	•	Std	•	•	1-Yr
	11	2767	24 x 48 x 3/4"		0.55	35 •	_	Class A	0.82	_	Std	•	Std	•	•	1-Yr
9/16" Angled Tegular	27	2776	24 x 48 x 3/4"		0.55	30	-	Class A	0.82	-	Std	•	Std	•	•	1-Yr
¹ Total Acoustics™ ceiling pa	anels have an ide	al combination	of noise reduction and s	ound-blocking	performance	in one prod	uct. 🕶 Ad	ld 2-letter	color su	fix to iter	n numbe	r when sp	ecifying	g or order	ing (e.g.,	769 <u>B</u> J
SUSPENSION SYS	TEMS * Item	2195 – CAC 31	on 9/16" Silhouette or	Trimlok.								-				
15/16"		\Box	9/16"		_ <u></u>					#_	<u> </u>			· [
	e®, Prelude XL® re Guard™		Silhouett 1/4"	e®	Silhouette® 1/8"		Suprafine	8	Interlud	e® XL HF	RC	Sonata	ı® XL		Trimlok	(®
NOTE: 9/16" Cortega Second	Look items are in	nstalled using S	uprafine suspension syst	ems only.												

PHYSICAL DATA

Material

Wet-formed mineral fiber

Surface Finish

Factory-applied latex paint

Fire Performance
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled.) Fire Guard: A fire-resistive ceiling when used in applicable UL assemblies

ASTM E1264 Classification Type III, Form 2, Pattern C D

Humidity/Sag Resistance Standard performance ceiling panels, adequate where the building is enclosed and the HVAC is continuously functioning.

> TechLineSM / 1 877 276 7876 armstrongceilings.com/commceilings (search: cortega) BPCS-3017/3022-8 15

VOC Emissions

Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol. (Excludes 769BL)

Primary (Embodied) Energy See all LCA information on our EPD's.

High Recycled Content
Contains greater than 50% total recycled content.
Total recycled content based on product composition
of post-consumer and pre-consumer (post-industrial)
recycled content per FTC guidelines.

Insulation Value 2195, 704, 816, 703 – R Factor – 1.6 (BTU units); R Factor – 0.28 (Watts units) 770, 772, 769, 773, 823, 824 – R Factor – 1.5 (BTU units); R Factor – 0.26 (Watts units)

LEED® is a registered trademark of the U.S. Green Building Council All other trademarks used herein are the property of AWI Licensing Company and/or its affiliates © 2015 AWI Licensing Company Printed in the United States of America

Weight; Square Feet/Carton
769 – 0.61 lbs/SF; 96 SF/ctn
704, 2195 – 0.63 lbs/SF; 64 SF/ctn
772, 773 – 0.63 lbs/SF; 64 SF/ctn
7703 – 0.65 lbs/SF; 80 SF/ctn
770 – 0.69 lbs/SF; 64 SF/ctn
816 – 1.08 lbs/SF; 48 SF/ctn
823 – 1.09 lbs/SF; 48 SF/ctn
824 – 1.09 lbs/SF; 64 SF/ctn
850 – 1.11 lbs/SF; 64 SF/ctn
850 – 1.11 lbs/SF; 64 SF/ctn
2765, 2767 – 0.73 lbs/SF; 80 SF/ctn
2765, 2767 – 0.73 lbs/SF; 80 SF/ctn
2776 – 0.70 lbs/SF; 80 SF/ctn

Minimum Order Quantity

1 carton, excludes other size panels.

Metric Items Available 770M, 824M, 769M, 773M, 772M, 2195M, 704M, 703M, 823M — Metric items are subject to extended lead times and minimum quantities. Contact your representative for more details.



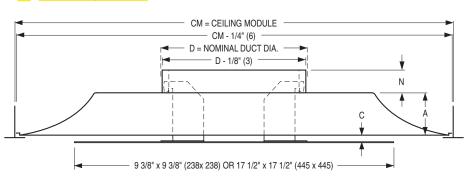


ARCHITECTURAL CEILING DIFFUSERS

SQUARE PLAQUE • CONCEALED NECK BRACKETRY ALUMINUM • ROUND NECK

MODEL: AUNI

TYPE L Lay-in T-Bar



Dimensional Data

Ceiling M	odule CM	In	nperial		Metric Units (mm)								
Imperial Modules	Metric Modules	Duct Size D	N	Α	В	С	F	Duct Size D	N A		В	С	F
		4*	3 1/4					102*	83		5 279		
12 x 12	300 x 300	5, 6, 7, 8	1 1/4	1	11	5/8	13	127, 152, 178, 203	32	25		16	330
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	N/A	152, 203, 254, 305, 356, 381	32	59	559	10	N/A

* Supplied with a reducer.

DESCRIPTION:

- 1. Material: Aluminum with corrosion-resistant steel neck bracketry.
- 2. The AUNI Diffuser has been designed to provide both the unobtrusive appearance for architectural excellence and engineered performance. Unique, concealed neck bracketry design is virtually invisible from a normal viewing position, giving the appearance that the plaque face floats below the backpan. There are no visible corner posts as on competitor's models to detract from the aesthetically clean design.
- The diffuser delivers a tight 360° radial horizontal pattern allowing high turn down ratios with no dumping. Excellent for VAV systems.
- 4. The diffuser features a stamped one-piece outer-cone which eliminates mitered corners and a double skinned inner face panel with a hemmed edge for strength and a clean appearance.
- A spring clip arrangement permits quick, easy installation and removal of the inner core assembly.
- 6. Standard finish is AW Appliance White.

OPTIONS:

- EX External Foil-Back Insulation, installed R-4.2
- EXB External Foil-Back Insulation, ships loose R-4.2
- MIB Molded Insulation Blanket R-6.0 (24 x 24 only)
- EQT Earthquake Tabs

Finish:

COLLEDIN E TYPE.

QB Quadrant Blanks:

- QB3 3-Way Blow
- QC2 2-Way Corner Blow
- QB2 2-Way Opposite Blow

CDDo

■ QB1 1-Way Blow

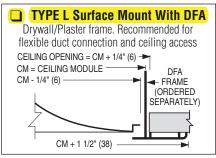
Fineline® is a registered trademark of USG Interiors Inc.

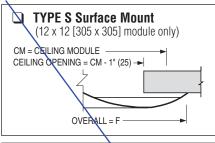
SCHEDULE TYPE:	GRDS	Di
PROJECT:	UCT AHU REPLACEMENT	
ENGINEER:	SHAH SMITH	DATE
CONTRACTOR	BRANDT	1 2/ 17

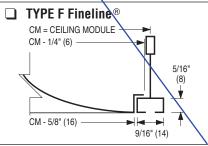
TYPE L Surface Mount
Hard duct connection recommended.

CM = CEILING MODULE
CEILING OPENING = B

CM - 1/4" (6)







Dimensions are in inches (mm).

SUPERSEDES DRAWING NO.

UNI-6

7 - 25 - 16

B SERIES

UNI

PERFORMANCE DATA:

Models UNI and AUNI • 12 x 12 (300 x 300) Face Size • 4-way Blow (360° Pattern)

Nominal	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
Neck Size	VP	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
	TP	.023	.036	.051	.070	.091	.115	.142	.205	.279	.364
4"	Airflow, CFM	35	45	50	60	70	80	85	105	120	140
Dia.	T	1-2-3	1-2-4	2-2-5	2-3-6	2-3-6	2-4-7	3-4-7	3-5-7	4-6-7	5-7-8
	NC	_	_	_	13	17	21	24	30	35	40
	TP	.027	.043	.061	.083	.109	.138	.170	.245	.334	.436
5"	Airflow, CFM	55	70	80	95	110	125	135	165	190	220
Dia.	T	2-2-4	2-3-5	2-3-6	3-4-7	3-5-8	4-6-9	4-7-9	4-8-10	5-8-10	6-9-11
	NC	_	_	_	14	18	22	25	31	36	41
	TP	.033	.052	.074	.101	.131	.166	.205	.295	.402	.525
6"	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
Dia.	T	2-3-5	3-4-6	3-5-7	4-5-8	5-6-9	5-7-10	5-8-10	6-9-11	7-10-12	7-10-13
	NC	_	_	10	15	19	23	26	32	37	42
	TP	.056	.089	.127	.172	.225	.285	.352	.506	.689	.900
7"	Airflow, CFM	105	135	160	190	215	240	265	320	375	430
Dia.	T	3-4-6	3-5-7	4-6-9	4-7-10	5-8-10	6-8-11	6-9-12	7-10-13	8-11-14	9-12-15
	NC	_	_	11	16	20	24	27	33	38	43
	TP	.067	.105	.160	.205	.268	.340	.418	.600	.821	1.070
8"	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
Dia.	T	3-5-7	4-6-9	5-7-10	6-8-11	6-9-12	7-9-13	7-10-14	8-11-15	9-12-16	9-12-17
	NC	_	_	12	17	21	25	28	34	39	44

Models UNI and AUNI · 20 x 20 (500 x 500) Face Size · 4-way Blow (360° Pattern)

Nominal	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
Neck Size	VP	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
	TP	.014	.021	.031	.042	.055	.070	.086	.124	.168	.220
6"	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
Dia.	T	1-3-5	2-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	NC	_	_	_	—	14	18	22	28	34	39
	TP	.019	.029	.042	.057	.074	.094	.116	.167	.227	.296
8"	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
Dia.	T	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	NC	_	_	_	13	18	22	26	32	38	43
	TP	. 031	.049	.071	.096	.126	.159	.196	.283	.385	.503
10"	Airflow, CFM	220	270	330	380	435	490	545	655	765	875
Dia.	T	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	6-8-12	7-9-14	8-11-15	10-12-17	11-13-18
	NC		_	10	16	21	25	29	35	41	46

For performance notes, see D109.

D

PERFORMANCE DATA:

Models UNI and AUNI · 24 x 24 (600 x 600) Face Size · 4-way Blow (360° Pattern)

Nominal	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
Neck Size	VP	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
	TP	.010	.020	.030	.041	.053	.068	.084	.120	.164	.214
6"	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
Dia.	T	1-3-4	1-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	NC	_	_	_	_	14	18	22	28	34	39
	TP	.018	.028	.037	.056	.072	.092	.112	.162	.220	.288
8"	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
Dia.	T	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	NC	_	_	_	13	18	22	26	32	38	43
	TP	.031	.048	.069	.093	.122	.155	.191	.275	.375	.489
10"	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
Dia.	T	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	5-8-12	7-9-14	8-11-15	10-12-17	11-13-18
	NC	_	_	10	16	21	25	29	35	41	46
	TP	.040	.063	.090	.123	.161	.203	.251	.361	.492	.643
12"	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
Dia.	T	4-5-10	4-7-13	5-8-14	7-9-16	8-11-17	8-12-17	10-14-19	11-15-20	14-17-23	16-18-25
	NC	_	_	13	19	24	28	32	38	44	49
	TP	.054	.083	.120	.163	.214	.270	.334	.481	.655	.855
14"	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
Dia.	T	5-7-14	6-9-16	7-11-18	10-13-20	11-15-23	11-17-23	14-19-26	16-21-28	19-22-31	20-24-33
	NC		_	15	21	26	30	34	40	46	51
	TP	.065	.102	.147	.200	.260	.330	.408	.588	.799	1.044
15"	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
Dia.	T	6-9-17	7-11-19	9-13-21	11-16-24	14-19-26	14-20-27	16-21-30	19-24-33	23-26-35	23-27-38
	NC	-	_	16	22	27	31	35	41	47	52

CFM - cubic feet per minute

FPM - feet per minute velocity

- total pressure - inches w.g.

- velocity pressure - inches w.g.

- throw in feet

- Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

- 1. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- 2. Return Applications:

Use the following correction factors with the supply data.

NC = +3NC

Neg. static pressure = TP x .45

3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	0.105
8	12 x 12	0.129
6	24 x 24	0.206
8	24 x 24	0.248
10	24 x 24	0.315
12	24 x 24	0.384
14	24 x 24	0.437
15	24 x 24	0.485

D

PERFORMANCE DATA:

Models UNI and AUNI · 12 x 12 (300 x 300) Face Size · 3-way Blow

Nominal	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
Neck Size	VP	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
	TP	.035	.061	.096	.138	.188	.245	.311	.383	.529	.725
6"	Airflow, CFM	60	80	100	120	140	160	180	200	235	275
Dia.	Т	2-4-6	3-6-9	5-7-9	5-8-10	6-9-12	7-9-13	7-10-14	8-11-15	8-12-16	9-13-17
	NC	_	_	12	18	23	27	31	34	40	45
	TP	.076	.135	.211	.304	.414	.540	.684	.844	1.215	1.654
8"	Airflow, CFM	105	140	175	210	245	280	315	350	420	490
Dia.	Т	3-5-7	5-7-10	5-8-11	6-9-12	7-10-13	7-10-14	8-11-15	9-12-16	9-12-17	10-13-18
	NC	_	_	14	20	25	29	33	36	42	47

Models UNI and AUNI · 24 x 24 (600 x 600) Face Size · 3-Way Blow

Nominal	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
Neck Size	VP	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
	TP	.010	.018	.028	.041	.055	.072	.091	.113	.155	.213
6"	Airflow, CFM	60	80	100	120	140	160	180	200	235	275
Dia.	Т	1-3-4	1-3-4	2-4-5	2-5-6	3-4-7	4-5-8	4-6-9	4-6-10	5-6-10	6-7-11
	NC	_	_	_	11	17	22	26	30	36	42
	TP	.016	.028	.043	.062	.085	.111	.140	.173	.249	.339
8"	Airflow, CFM	105	140	175	210	245	280	315	350	420	490
Dia.	Т	2-2-4	2-3-6	3-4-8	3-5-8	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13	9-11-14
	NC	_	_	_	15	21	26	30	34	40	46
	TP	.032	.057	.085	.127	.169	.221	.281	.347	.501	.684
10"	Airflow, CFM	165	220	270	330	380	435	490	545	655	765
Dia.	Т	3-4-7	3-5-9	4-6-10	5-7-11	5-8-12	7-10-13	8-11-15	9-12-16	11-13-18	12-14-19
	NC	_	_	_	18	24	29	33	37	43	49
	TP	.043	.077	.118	.171	.235	.308	.386	.478	.686	.939
12"	Airflow, CFM	235	315	390	470	550	630	705	785	940	1100
Dia.	Т	4-5-10	5-7-13	6-9-15	8-11-17	9-13-18	10-14-19	11-15-20	13-16-22	16-18-25	18-21-28
	NC	_	_	12	21	27	32	36	40	46	52
	TP	.060	.106	.165	.237	.326	.425	.536	.661	.949	1.306
14"	Airflow, CFM	320	425	530	635	745	850	955	1060	1270	1490
Dia.	Т	5-7-14	6-9-16	9-12-19	11-15-23	12-18-24	14-19-26	16-21-28	19-21-30	20-24-33	21-26-35
	NC	_	_	14	23	29	34	38	42	48	54
	TP	.074	.130	.205	.293	.401	.526	.668	.820	1.172	1.604
15"	Airflow, CFM	370	490	615	735	860	985	1110	1230	1470	1720
Dia.	Т	6-9-17	8-12-20	11-16-24	14-19-26	14-20-27	17-22-31	19-24-33	22-25-35	23-27-38	24-29-40
	NC	_	_	15	24	30	35	39	43	49	55

CFM - cubic feet per minute

FPM - feet per minute velocity

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

- 1. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- 2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	0.079
8	12 x 12	0.098
6	24 x 24	0.155
8	24 x 24	0.186
10	24 x 24	0.236
12	24 x 24	0.288
14	24 x 24	0.328
15	24 x 24	0.364

D

PERFORMANCE DATA:

Models UNI and AUNI · 12 x 12 (300 x 300) Face Size · 2-way Blow

Nominal	Neck Velocity, FPM	200	300	400	500	600	700	800	900	1000	1200
Neck Size	VP	.003	.006	.010	.016	.023	.031	.040	.051	.063	.090
	TP	.032	.071	.126	.198	.284	.387	.506	.640	.790	1.091
6"	Airflow, CFM	40	60	80	100	120	140	160	180	200	235
Dia.	Т	2-4-6	4-6-9	5-8-10	6-9-12	7-9-13	8-11-15	8-12-16	9-12-17	9-13-18	10-13-19
	NC	_	_	16	22	25	30	34	38	41	47
	TP	.074	.166	.294	.460	.662	.902	1.178	1.491	1.840	2.650
8"	Airflow, CFM	70	105	140	175	210	245	280	315	350	420
Dia.	Т	3-5-7	5-7-10	6-9-12	7-10-14	8-11-15	9-12-16	9-12-17	10-12-18	10-13-19	11-14-20
	NC	-	11	18	24	27	32	36	40	43	49

Models UNI and AUNI • 24 x 24 (600 x 600) Face Size • 2-Way Blow

Neck Size VP .003 .006 .010 .016 .023 .031 .040 .051 .063 .090 6" Airflow, CFM 40 60 80 100 120 140 160 180 200 235 Dia. T 1.3-4 2.4-5 2.5-6 3-4-7 4-6-9 4-6-10 5-6-10 6-7-11 6-8-12 7-9-13 NC — — 12 18 .153 .200 .253 .313 .450 8" Airflow, CFM 70 105 140 175 210 245 280 315 350 420 Dia. T 2-2-4 2-3-7 3-5-9 5-7-9 6-8-11 7-9-12 8-10-13 9-11-14 10-12-15 11-13-17 NC — — — — 16 22 28 33 37 41 47 10" Airflow, CFM 110 165 220 270 <th>Nominal</th> <th>Neck Velocity, FPM</th> <th>200</th> <th>300</th> <th>400</th> <th>500</th> <th>600</th> <th>700</th> <th>800</th> <th>900</th> <th>1000</th> <th>1200</th>	Nominal	Neck Velocity, FPM	200	300	400	500	600	700	800	900	1000	1200
6" Airflow, CFM 40 60 80 100 120 140 180 200 235 Dia. T 1-3-4 2-4-5 2-5-6 3-4-7 4-6-9 4-6-10 5-6-10 6-7-11 6-8-12 7-9-13 NC — — — — 12 18 24 29 33 37 43 8" Airflow, CFM 70 105 140 175 210 245 280 315 350 420 Dia. T 2-2-4 2-3-7 3-5-9 5-7-9 6-8-11 7-9-12 8-10-13 9-11-14 10-12-15 11-13-17 NC — — — — 16 22 28 33 37 41 47 10" RF .029 .065 .115 .174 .259 .344 .451 .572 .707 1.022 10" Airflow, CFM 110 165 220 270<	Neck Size	VP	.003	.006	.010	.016	.023	.031	.040	.051	.063	.090
Dia. T 1-3-4 2-4-5 2-5-6 3-4-7 4-6-9 4-6-10 5-6-10 6-7-11 6-8-12 7-9-13 NC — — — — 12 18 24 29 33 37 43 B" TP .013 .028 .050 .078 .113 .153 .200 .253 .313 .450 B" Airflow, CFM 70 105 140 175 210 245 280 315 350 420 Dia. T 2-2-4 2-3-7 3-5-9 5-7-9 6-8-11 7-9-12 8-10-13 9-11-14 10-12-15 11-13-17 NC — — — 16 22 28 33 37 41 47 10" Airflow, CFM 110 165 220 270 330 380 435 490 545 655 Dia. T .3-4-7 3-5-10 5-7-13 </th <th></th> <th>TP</th> <th>.007</th> <th>.016</th> <th>.028</th> <th>.043</th> <th>.063</th> <th>.085</th> <th>.111</th> <th>.141</th> <th>.174</th> <th>.240</th>		TP	.007	.016	.028	.043	.063	.085	.111	.141	.174	.240
NC — — — 12 18 24 29 33 37 43 8" TP .013 .028 .050 .078 .113 .153 .200 .253 .313 .450 B" Airflow, CFM 70 105 140 175 210 245 280 315 350 420 Dia. T 2-2-4 2-3-7 3-5-9 5-7-9 6-8-11 7-9-12 8-10-13 9-11-14 10-12-15 11-13-17 NC — — — 16 22 28 33 37 41 47 10" Airflow, CFM 110 165 220 270 330 380 435 490 545 655 Dia. T 3-47 3-5-10 5-7-13 7-9-14 8-11-15 10-12-17 11-13-18 11-14-18 12-15-19 13-17-22 NC — — 12 19 25 </th <th>6"</th> <th>Airflow, CFM</th> <th>40</th> <th>60</th> <th>80</th> <th>100</th> <th>120</th> <th>140</th> <th>160</th> <th>180</th> <th>200</th> <th>235</th>	6"	Airflow, CFM	40	60	80	100	120	140	160	180	200	235
8" Airflow, CFM 70 105 140 175 210 245 280 315 350 420 Dia. T 2-2-4 2-3-7 3-5-9 5-7-9 6-8-11 7-9-12 8-10-13 9-11-14 10-12-15 11-13-17 NC — — — — 16 22 28 33 37 41 47 10" Airflow, CFM 110 165 220 270 330 380 435 490 545 655 Dia. T 3-4-7 3-5-10 5-7-13 7-9-14 8-11-15 10-12-17 11-13-18 11-14-18 12-15-19 13-17-22 Dia. T 3-4-7 3-5-10 5-7-13 7-9-14 8-11-15 10-12-17 11-13-18 11-14-18 12-15-19 13-17-22 NC — — 12 19 25 31 36 41 44 50 TP .042 .090	Dia.	T	1-3-4	2-4-5	2-5-6	3-4-7	4-6-9	4-6-10	5-6-10	6-7-11	6-8-12	7-9-13
8" Dia. Airflow, CFM Dia. 70 105 140 175 210 245 280 315 350 420 Dia. T 2-2-4 2-3-7 3-5-9 5-7-9 6-8-11 7-9-12 8-10-13 9-11-14 10-12-15 11-13-17 NC — — — 16 22 28 33 37 41 47 TP .029 .065 .115 .174 .259 .344 .451 .572 .707 1.022 10" Airflow, CFM 110 165 220 270 330 380 435 490 545 655 Dia. T .3-4-7 .3-5-10 .5-7-13 .7-9-14 8-11-15 10-12-17 11-13-18 11-14-18 12-15-19 13-17-22 NC — — 12 19 .25 31 36 41 44 450 12"" Airflow, CFM 160 235 315		NC	_	_	_	12	18	24	29	33	37	43
Dia. T 2-2-4 2-3-7 3-5-9 5-7-9 6-8-11 7-9-12 8-10-13 9-11-14 10-12-15 11-13-17 NC — — — 16 22 28 33 37 41 47 10" Airflow, CFM 110 165 220 270 330 380 435 490 545 655 Dia. T 3-4-7 3-5-10 5-7-13 7-9-14 8-11-15 10-12-17 11-13-18 11-14-18 12-15-19 13-17-22 NC — — 12 19 25 31 36 41 44 50 12" Airflow, CFM 160 235 315 390 470 550 630 705 785 940 Dia. T 4-5-10 5-8-14 8-11-17 10-14-19 11-15-20 14-17-23 16-18-25 16-19-25 18-21-27 19-22-29 NC — — 15 </th <th></th> <th>TP</th> <th>.013</th> <th>.028</th> <th>.050</th> <th>.078</th> <th>.113</th> <th>.153</th> <th>.200</th> <th>.253</th> <th>.313</th> <th>.450</th>		TP	.013	.028	.050	.078	.113	.153	.200	.253	.313	.450
NC — — — 16 22 28 33 37 41 47 10" Airflow, CFM 110 165 220 270 330 380 435 490 545 655 Dia. T 3-4-7 3-5-10 5-7-13 7-9-14 8-11-15 10-12-17 11-13-18 11-14-18 12-15-19 13-17-22 NC — — 12 19 25 31 36 41 44 50 12" Airflow, CFM 160 235 315 390 470 550 630 705 785 940 Dia. T 4-5-10 5-8-14 8-11-17 10-14-19 11-15-20 14-17-23 16-18-25 16-19-25 18-21-27 19-22-29 NC — — 15 22 28 34 39 43 47 53 14" Airflow, CFM 210 320 425 530 635	8"	Airflow, CFM	70	105	140	175	210	245	280	315	350	420
10" Airflow, CFM 110 165 220 270 330 380 435 490 545 655 Dia. T 3-4-7 3-5-10 5-7-13 7-9-14 8-11-15 10-12-17 11-13-18 11-14-18 12-15-19 13-17-22 NC — 12 19 25 31 36 41 44 50 12" Airflow, CFM 160 235 315 390 470 550 630 705 785 940 Dia. T 4-5-10 5-8-14 8-11-17 10-14-19 11-15-20 14-17-23 16-18-25 16-19-25 18-21-27 19-22-29 NC — — 15 22 28 34 39 43 47 53 14" Airflow, CFM 210 320 425 530 635 745 850 955 1060 1270 Dia. T 5-7-14 7-11-18 11-15-23 <th>Dia.</th> <th>T</th> <th>2-2-4</th> <th>2-3-7</th> <th>3-5-9</th> <th>5-7-9</th> <th>6-8-11</th> <th>7-9-12</th> <th>8-10-13</th> <th>9-11-14</th> <th>10-12-15</th> <th>11-13-17</th>	Dia.	T	2-2-4	2-3-7	3-5-9	5-7-9	6-8-11	7-9-12	8-10-13	9-11-14	10-12-15	11-13-17
10" Airflow, CFM 110 165 220 270 330 380 435 490 545 655 Dia. T 3-4-7 3-5-10 5-7-13 7-9-14 8-11-15 10-12-17 11-13-18 11-14-18 12-15-19 13-17-22 NC — — 12 19 25 31 36 41 44 50 12" Airflow, CFM 160 235 315 390 470 550 630 705 785 940 Dia. T 4-5-10 5-8-14 8-11-17 10-14-19 11-15-20 14-17-23 16-18-25 16-19-25 18-21-27 19-22-29 NC — — 15 22 28 34 39 43 47 53 14" Airflow, CFM 210 320 425 530 635 745 850 955 1060 1270 Dia. T 5-7-14 7-11-18		NC	_	_	_	16	22	28	33	37	41	47
Dia. T 3-4-7 3-5-10 5-7-13 7-9-14 8-11-15 10-12-17 11-13-18 11-14-18 12-15-19 13-17-22 NC — 12 19 25 31 36 41 44 50 12" Airflow, CFM 160 235 315 390 470 550 630 705 785 940 Dia. T 4-5-10 5-8-14 8-11-17 10-14-19 11-15-20 14-17-23 16-18-25 16-19-25 18-21-27 19-22-29 NC — — 15 22 28 34 39 43 47 53 14" Airflow, CFM 210 320 425 530 635 745 850 955 1060 1270 Dia. T 5-7-14 7-11-18 11-15-23 14-19-26 16-21-28 19-22-31 20-24-33 20-26-33 23-28-36 25-30-38 NC — — 17 <th></th> <th>TP</th> <th>.029</th> <th>.065</th> <th>.115</th> <th>.174</th> <th>.259</th> <th>.344</th> <th>.451</th> <th>.572</th> <th>.707</th> <th>1.022</th>		TP	.029	.065	.115	.174	.259	.344	.451	.572	.707	1.022
NC — — 12 19 25 31 36 41 44 50 12" TP .042 .090 .162 .248 .360 .493 .647 .811 1.005 1.441 12" Airflow, CFM 160 235 315 390 470 550 630 705 785 940 Dia. T 4-5-10 5-8-14 8-11-17 10-14-19 11-15-20 14-17-23 16-18-25 16-19-25 18-21-27 19-22-29 NC — — 15 22 28 34 39 43 47 53 14" Airflow, CFM 210 320 425 530 635 745 850 955 1060 1270 Dia. T 5-7-14 7-11-18 11-15-23 14-19-26 16-21-28 19-22-31 20-24-33 20-26-33 23-28-36 25-30-38 NC — — 17	10"	Airflow, CFM	110	165	220	270	330	380	435	490	545	655
TP .042 .090 .162 .248 .360 .493 .647 .811 1.005 1.441 12" Airflow, CFM 160 235 315 390 470 550 630 705 785 940 Dia. T 4-5-10 5-8-14 8-11-17 10-14-19 11-15-20 14-17-23 16-18-25 16-19-25 18-21-27 19-22-29 NC — — 15 22 28 34 39 43 47 53 14" Airflow, CFM 210 320 425 530 635 745 850 955 1060 1270 Dia. T 5-7-14 7-11-18 11-15-23 14-19-26 16-21-28 19-22-31 20-24-33 20-26-33 23-28-36 25-30-38 NC — — 17 24 30 36 41 45 49 55 TP .071 .161 .283 .446 .637 <t< th=""><th>Dia.</th><th>T</th><th>3-4-7</th><th>3-5-10</th><th>5-7-13</th><th>7-9-14</th><th>8-11-15</th><th>10-12-17</th><th>11-13-18</th><th>11-14-18</th><th>12-15-19</th><th>13-17-22</th></t<>	Dia.	T	3-4-7	3-5-10	5-7-13	7-9-14	8-11-15	10-12-17	11-13-18	11-14-18	12-15-19	13-17-22
12" Airflow, CFM 160 235 315 390 470 550 630 705 785 940 Dia. T 4-5-10 5-8-14 8-11-17 10-14-19 11-15-20 14-17-23 16-18-25 16-19-25 18-21-27 19-22-29 NC — — 15 22 28 34 39 43 47 53 14" Airflow, CFM 210 320 425 530 635 745 850 955 1060 1270 Dia. T 5-7-14 7-11-18 11-15-23 14-19-26 16-21-28 19-22-31 20-26-33 23-28-36 25-30-38 NC — — 17 24 30 36 41 45 49 55 TP .071 .161 .283 .446 .637 .872 1.144 1.453 1.784 2.548 15" Airflow, CFM 245 370 490 615<		NC	_	_	12	19	25	31	36	41	44	50
Dia. T 4-5-10 NC 5-8-14 S-11-17 NC 8-11-17 10-14-19 11-15-20 14-17-23 16-18-25 16-19-25 18-21-27 19-22-29 28 34 39 43 47 53 TP .056 .130 .229 .356 .511 .704 .916 .1.156 1.425 2.045 14" Airflow, CFM Dia. 210 320 425 530 635 745 850 955 1060 1270 NC 17 24 30 36 41 45 49 55 NC 17 24 30 36 41 45 49 55 TP Airflow, CFM CFM Dia. 161 283 446 637 872 1.144 1.453 1.784 2.548 15 1.784 15 1.784		TP	.042	.090	.162	.248	.360	.493	.647	.811	1.005	1.441
NC — — 15 22 28 34 39 43 47 53 TP .056 .130 .229 .356 .511 .704 .916 1.156 1.425 2.045 Airflow, CFM 210 320 425 530 635 745 850 955 1060 1270 Dia. T 5-7-14 7-11-18 11-15-23 14-19-26 16-21-28 19-22-31 20-24-33 20-26-33 23-28-36 25-30-38 NC — — 17 24 30 36 41 45 49 55 TP .071 .161 .283 .446 .637 .872 1.144 1.453 1.784 2.548 15" Airflow, CFM 245 370 490 615 735 860 985 1110 1230 1470 Dia. T 6-9-17 9-13-21 14-19-26 16-21-30 19-24-33	12"	Airflow, CFM	160	235	315	390	470	550	630	705	785	940
TP .056 .130 .229 .356 .511 .704 .916 1.156 1.425 2.045 14" Airflow, CFM 210 320 425 530 635 745 850 955 1060 1270 Dia. T 5-7-14 7-11-18 11-15-23 14-19-26 16-21-28 19-22-31 20-24-33 20-26-33 23-28-36 25-30-38 NC — 17 24 30 36 41 45 49 55 TP .071 .161 .283 .446 .637 .872 1.144 1.453 1.784 2.548 15" Airflow, CFM 245 370 490 615 735 860 985 1110 1230 1470 Dia. T 6-9-17 9-13-21 14-19-26 16-21-30 19-24-33 23-26-35 23-27-38 23-28-39 25-29-42 28-31-42	Dia.	T	4-5-10	5-8-14	8-11-17	10-14-19	11-15-20	14-17-23	16-18-25	16-19-25	18-21-27	19-22-29
14" Airflow, CFM 210 320 425 530 635 745 850 955 1060 1270 Dia. T 5-7-14 7-11-18 11-15-23 14-19-26 16-21-28 19-22-31 20-24-33 20-26-33 23-28-36 25-30-38 NC — 17 24 30 36 41 45 49 55 TP .071 .161 .283 .446 .637 .872 1.144 1.453 1.784 2.548 15" Airflow, CFM 245 370 490 615 735 860 985 1110 1230 1470 Dia. T 6-9-17 9-13-21 14-19-26 16-21-30 19-24-33 23-26-35 23-27-38 23-28-39 25-29-42 28-31-42		NC		_	15	22	28	34	39	43	47	53
Dia. T 5-7-14 NC 7-11-18 Properties 11-15-23 Properties 14-19-26 Properties 16-21-28 Properties 19-22-31 Properties 20-24-33 Properties 20-26-33 Properties 23-28-36 Properties 25-30-38 Properties 15" Airflow, CFM Dia. 245 Properties 370 Properties 490 Properties 66-21-30 Properties 19-22-31 Properties 20-24-33 Properties 20-26-33 Properties 23-28-36 Properties 25-30-38 Properties 40 Properties 15" Properties 11-14 Pro		TP	.056	.130	.229	.356	.511	.704	.916	1.156	1.425	2.045
NC — — 17 24 30 36 41 45 49 55 TP .071 .161 .283 .446 .637 .872 1.144 1.453 1.784 2.548 15" Airflow, CFM 245 370 490 615 735 860 985 1110 1230 1470 Dia. T 6-9-17 9-13-21 14-19-26 16-21-30 19-24-33 23-26-35 23-27-38 23-28-39 25-29-42 28-31-42	1	Airflow, CFM	210	320	425	530	635	745	850	955	1060	1270
TP	Dia.	Т	5-7-14	7-11-18	11-15-23	14-19-26	16-21-28	19-22-31	20-24-33	20-26-33	23-28-36	25-30-38
15" Airflow, CFM 245 370 490 615 735 860 985 1110 1230 1470 Dia. T 6-9-17 9-13-21 14-19-26 16-21-30 19-24-33 23-26-35 23-27-38 23-28-39 25-29-42 28-31-42		NC		_	17	24	30	36	41	45	49	55
Dia. T 6-9-17 9-13-21 14-19-26 16-21-30 19-24-33 23-26-35 23-27-38 23-28-39 25-29-42 28-31-42		TP	.071	.161	.283	.446	.637	.872	1.144	1.453	1.784	2.548
		Airflow, CFM	245	370	490	615	735	860	985	1110	1230	1470
NC - 10 18 25 31 37 42 46 50 56	Dia.	Т	6-9-17	9-13-21	14-19-26	16-21-30	19-24-33	23-26-35	23-27-38	23-28-39	25-29-42	28-31-42
		NC	-	10	18	25	31	37	42	46	50	56

CFM - cubic feet per minute

FPM - feet per minute velocity

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

- 1. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- 2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	0.053
8	12 x 12	0.065
6	24 x 24	0.103
8	24 x 24	0.124
10	24 x 24	0.158
12	24 x 24	0.192
14	24 x 24	0.219
15	24 x 24	0.243

PRELUDE® XL® and PRELUDE XL HIGH RECYCLED CONTENT (HRC)

15/16" Exposed Tee System

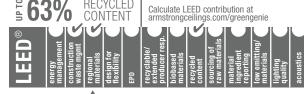
Declare

Living Building

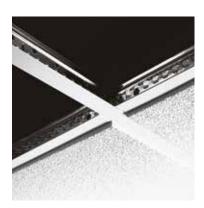
Challenge Complian

SUSTAIN™ High Performance Sustainable

Ceiling Systems



LOCATION DEPENDENT



KEY SELECTION ATTRIBUTES

- Seismic Rx® Suspension System saves time and money; offer an ICC-ES approach to installations (ESR-1308)
- Prelude® XL® is part of the Sustain™
 portfolio and meets the most stringent
 sustainability compliance standards today
- PeakForm® profile increases strength and stability for improved performance during installation
- SuperLock^{™2} main beam clip is engineered for a strong, secure connection and fast accurate alignment confirmed with an audible click; easy to remove/relocate
- Hot dipped galvanized coating inhibits red rusting better than electrogalvanized or painted systems

- Made-to-Order main beams and cross tees can be ordered for your project needs in one carton minimums
- Available with TrioGuard[™] coating that resists dirt, bacteria, mold, mildew, and color fading
- XL² staked-on end detail provides secure locked connection; easy to remove, reuse, and relocate
- Fire Guard[™] options offer UL design fire-rated performance
- · Some items available in metric sizes
- 10-Year Limited System Warranty;
 30-Year Limited Ceiling Systems
 Warranty when used with
 HumiGuard® Plus products
 10-YEA
 Availabil

TYPICAL APPLICATIONS

- Retail
- ail Offices
- Education Hospitality
- · Healthcare

Blizzard White powder-coated finish coordinates with Optima®, Ultima®, Calla®, and Lyra® ceiling panels for a clean, seamless, monolithic installed visual.

Linear lighting integration is easy with made-to-order main beam-to-cross tee adapters, rout spacing, miter spacing, and short cross tees (3" to 6" lengths).

V// OLIAL OF LE	OTION						DEDEO		DAOK	
VISUAL SELE	CHON						PERFO	RMANCE	PACK	AGING
					Load Test D (Lbs./Lin. Fi		Fire Guard™	Seismic Category		
Item No.	Face Profile	Description	Rout Spacing	Dimensions (Inches)	L/360	Lbs./ Lin. Ft.	8	-M∕- DEF	Pcs./ Ctn.	Lin. Ft Ctn.
Prelude XL (R	Red Numbe	ers are Fire Guard	Items)		4 Ft.	5 Ft.	Dots repre	esent high erformance.		
☐ 7301 + ☐ 7301HRC ☐ 8301	15/16"	12' HD Main Beam	6" O.C.	144 x 15/16 x 1-11/16"	16.73	8.73	- - •	•	20 20 20 20	240 240 240
□ 7300 * □ 8300†	15/16"	12' ID Main Beam	6" O.C.	144 x 15/16 x 1-11/16"	13.5	6.35	-	_ _	20 20	240 240
□ 7305 <u></u> _*	15/16"	140" ID Main Beam	10" O.C.	140 x 15/16 x 1-11/16"	10.73	8.73	_	_	20	233
□ 7306*	15/16"	132" HD Main Beam	10", 30", 50", 56", 76", 96", 116", 122"	132 x 15/16 x 1-11/16"	16.73	8.73	_	•	20	220
□ 7307*	15/16"	126" HD Main Beam	10", 30", 50", 70", 90", 110", 116"	126 x 15/16 x 1-11/16"	-	-	_	•	20	210
□ 7302 <u></u> _*	15/16"	10' ID Main Beam	6" O.C.	120 x 15/16 x 1-11/16"	13.5	6.35	_	_	20	200
☐ XL7380*	15/16"	8' Cross Tee	12" O.C.	96 x 15/16 x 1-11/16"	12.12**	_	_	•	20	160
□ XL7390*	15/16"	6' Cross Tee	12" O.C.	72 x 15/16 x 1-11/16"	12.24*	_	_	•	20	120
□ XL7357*	15/16"	5' Cross Tee	6", 12", 24", 30", 36", 48", 54"	60 x 15/16 x 1-11/16"	-	7.61	_	•	60	300
□ XL7358*	15/16"	5' Cross Tee	6", 20", 30", 40", 54"	60 x 15/16 x 1-11/16"	_	7.61	_	•	60	300
☐ XL7341*** ☐ XL7341HRC ☐ XL8341	15/16"	4' Cross Tee	12" O.C.	48 x 15/16 x 1-11/16"	16.89	-	- - •	:	60 60 60	240 240 240
□ XL7340* □ XL8340†	15/16"	4' Cross Tee	12" O.C.	48 x 15/16 x 1-11/16"	12.25	_	-	•	60 60	240 240
☐ XL7342◆	15/16"	4' Cross Tee	12" O.C.	48 x 15/16 x 1-1/2"	7.8	_	_	•	60	240
□ XL7348 *	15/16"	4' Cross Tee	12"	48 x 15/16 x 1-3/8"	6.78	_	_	•	60	240
☐ XL7330***	15/16"	3' Cross Tee	_	36 x 15/16 x 1-11/16"	20.3 @ 3'	_	_	•	60	180
□ XL7378*	15/16"	30" Cross Tee	-	30 x 15/16 x 1-3/8"	16.54 @ 2.5'	_	_	•	60	150
☐ XL7328+ ☐ XL8323†	15/16"	2' Cross Tee	-	24 x 15/16 x 1-3/8"	36.0 @ 2'	-	-	•	60 60	120 120
 XL8320HRC XL8320†	15/16"	2' Cross Tee	-	24 x 15/16 x 1-11/16"	61.33 @ 2'	_	-	•	60 60	120 120
☐ XL7368*	15/16"	20" Cross Tee	_	20 x 15/16 x 1-3/8"	36.0 @ 1.67'	_	_	•	60	100
□ XL7398 ÷	15/16"	18" Cross Tee	_	18 x 15/16 x 1-3/8"	_	_	_	•	60	90
□ XL7318 *	15/16"	1' Cross Tee	-	12 x 15/16 x 1-3/8"	36.0 @ 1'	_	_	•	120	120
☐ XL7304*	15/16"	4" Cross Tee	_	4 x 15/16 x 1-11/16"	-	_	_	•	60	20
□ XL7306 *	15/16"	6" Cross Tee	_	6 x 15/16 x 1-11/16"	_	_	_	•	60	30



PRELUDE® XL® and PRELUDE XL HIGH RECYCLED CONTENT (HRC)

15/16" Exposed Tee System

VISUAL SELECTION PERFORMANCE PACKAGING Load Test Data Fire Seismic Category (Lbs./Lin. Ft.) Guard™ Item Face Rout Dimensions Lbs./ Pcs./ Lin. Ft./ -₩-DEF No. Profile Description Spacing (Inches) L/360 Lin. Ft. Ctn. Ctn. Dots represent high Prelude® XL® continued 4 Ft. 5 Ft. level of performance Size Capabilities Main Beams Length Cross Tees Length ≧ Made-15/16" Varies Varies 36" - 144" 6" - 144" Rout spacing to-Order ASTM Class HD – Heavy-duty ID – Intermediate-duty LD – Light-duty 3" from ends, Sizes or 6" thereafter NOTE: Up to 6 Weeks for (2 Wks) Color & Size Combinations Made-to-Order main beams and cross tees can be ordered with special sizes, rout spacing, and colors for your project needs in one carton minimums.

- ** Hanger Wire Support Mid-Span

 *** Itams available in White, Tech Black, and Blizzard White powder-coated finish

 tems available in Standard, Premium, and Blizzard White powder-coated finish

terms available in White and Blizzard White powder-coated finish
tems 8300, XL8320, XL8323, XL8340 available in Black (BL) or White (WH) only
When specifying or ordering items with a color or finish, add the two-letter suffix to the end of the item number (e.g., 7301HA – Haze)

NOTE: Additional Prelude XL items for TechZone® Ceiling Systems are listed in the TechZone Technical Guide (BPCS-4486). Available online at armstrongceilings.com/techzone

Item No.•	Face Profile	Description	Dimensions (Inches)	Load Test Data (Lbs./Lin. Ft.)	a	Guard™	Category	Pcs./ Ctn.	Lin. Ft./ Ctn.
Prelude XL Pair	nted Grid	to Match Axiom® Trim (360° Painte	d – Powder Coated Paint)	4 Ft.	5 Ft.	Dots repre	sent high erformance.		
□ AX73003	15/16"	12' ID Main Beam, Routs 6" OC	144 x 15/16 x 1-11/16"	13.5	6.35	-	_	20	240
□ AX73013	15/16"	12' HD Main Beam, Routs 6" OC	144 x 15/16 x 1-11/16"	16.73	8.73	-	_	20	240
□ AX73423	15/16"	4' Cross Tee, Routs 12" OC	48 x 15/16 x 1-1/2"	7.8	_	-	-	60	240
□ AX73283	15/16"	2' Cross Tee	24 x 15/16 x 1-3/8"	36.0 @ 2'	_	_	-	60	120
□ AX73183	15/16"	1' Cross Tee	12 x 15/16 x 1-3/8"	36.0 @ 1'	-	-	-	120	120
□ AX73583	15/16"	5' Cross Tee Routs 6", 20", and 30" from ends	60 x 15/16 x 1-1/2"	7.61	_	-	-	60	300
□ AX73783	15/16"	30" Cross Tee	30 x 15/16 x 1-3/8"	16.54 @ 2.5	_	-	_	60	150
□ AX83403	15/16"	4' Cross Tee, Routs 12" OC	48 x 15/16 x 1-1/2"	_	_	-	_	60	_
☐ AXAL7220	15/16"	2' Cross Tee	24 x 15/16 x 1-1/2"	_	_	-	-	60	120

Fire

Seismic

When specifying or ordering items with a color or finish, add the two-letter suffix to the end of the item number (e.g., 7301HA - Haze)

VISUAL SELEC	CTION						PACKA	GING
Item No.	Description	Length	(A) Flange	(B) Height	(C) Reveal	(D) Reveal	Pcs./ Ctn.	Lin. Ft./ Ctn.
Suggested Wa	ll Moldings and Shadow Moldings							
□ 7800◆	12' Hemmed Angle Molding	144"	7/8"	7/8"	-		30	360
☐ 7800HRC								
□ 7808*	10' Hemmed Angle Molding	120"	2"	2"	-		10	100
□ 780812 _ _*	12' Hemmed Angle Molding	144"	2"	2"	-		10	120
□ 7807	10' Hemmed Angle Molding	120"	2"	1"	_		10	100
□ 7875 <u></u> *	10' Shadow Molding	120"	3/4"	15/16"	1/2"		30	300
☐ 7877****	10' Shadow Molding	120"	15/16"	15/16"	1/4"		30	300
☐ 7878****	10' Shadow Molding	120"	15/16"	15/16"	3/8"		30	300
☐ 7897****	10' Shadow Molding	120"	15/16"	15/16"	1/2"		30	300
□ 7888	10' Shadow Molding	120"	15/16"	15/16"	3/8"	1/4"	30	300
□ 7850 <u></u> _*	12' Hemmed Angle Molding	120"	1-1/8"	7/8"	-	-	30	300
□ 7851*	12' Hemmed Angle Molding	144"	1-1/8"	7/8"	-	-	30	360

^{***} Suitable for IBC Category D,E,F installations using Armstrong® Seismic Rx® and BERC2 Clip tems available in Standard, Premium, and Blizzard White powder-coated finish



Items available in White and Blizzard White powder-coated finish
When specifying or ordering items with a color or finish, add the two-letter suffix to the end of the item number (e.g., $7301\underline{H}\underline{A}$ – Haze)

PRELUDE® XL® and PRELUDE XL HIGH RECYCLED CONTENT (HRC)

15/16" Exposed Tee System

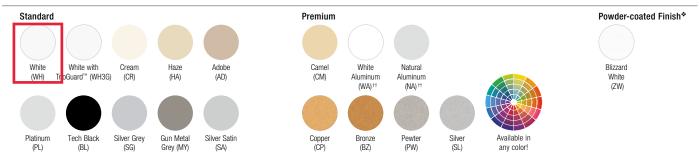
			MA	AXIMUM FIX	TURE WEIG	HT				
Configu	ıration	Item	Fixt	ure	Planning	Module	Hanger	Spacing	Maximu	m Weight
Α	В	No.	Α	В	Α	В	Α	В	Α	В
Main Beam to	Main Beam	- Drawing Key: Main beam	(1) Cross tee ()) Hanger wire (-)					
M		7300/8300/7302 7301/8301	24" x 48" 24" x 48"	24" x 48" 24" x 48"	48" x 48" 48" x 48"	48" x 48" 48" x 48"	48" 48"	48" 48"	69.27 lbs. 72.32 lbs.	49.27 lbs 72.32 lbs
		7300/8300/7302 7301/8301	12" x 48" 12" x 48"	12" x 48" 12" x 48"	48" x 48" 48" x 48"	48" x 48" 48" x 48"	48" 48"	48" 48"	54.26 lbs. 100.0 lbs.	47.17 lbs 63.32 lbs
		7300/8300/7305 7301/8301	24" x 48" 24" x 48"	20" x 60" 20" x 60"	60" x 60" 60" x 60"	60" x 60" 60" x 60"	48" 48"	48" 48"	56.47 lbs. 56.47 lbs.	43.21 lbs 65.46 lbs

Main beams tested as follows: 7300 tested at 13.0 lbs./LF to 1/360 of 4' span; 7301 tested at 16.5 lbs./LF to 1/360 of 4' span.

					TURE WEIG					
Configur	Configuration Item		Fixt	ure	Planning	Module	Hanger :	Spacing	Maximum Weight	
Α	В	No.	Α	В	Α	В	Α	В	Α	В
oss Tee to C	ross Tee –	Drawing Key: Main beam (1) Cross tee () Har	nger wire (+)						
\ \	†	XL8340/XL7340	24" x 48"	24" x 24"	64" x 60"	48" x 48"	48"	48"	69.27 lbs.	80.55 lbs
IXI I	\sim	XL7342	24" x 48"	24" x 24"	64" x 60"	48" x 48"	48"	48"	40.89 lbs.	52.26 lbs
<u> </u>	↓ ↓	XL8341/XL7341	24" x 48"	24" x 24"	64" x 60"	48" x 48"	48"	48"	81.67 lbs.	100.0 lbs
IXI	†x-y+	XL8340/XL7340	24" x 48"	12" x 48"	48" x 48"	48" x 48"	48"	48"	49.27 lbs.	42.17 lbs
		XL8341/XL7341	24" x 48"	12" x 48"	48" x 48"	48" x 48"	48"	48"	72.32 lbs.	63.32 lb

Fixtures weighing more than 56 lbs. should be independently supported. Fixture weight is based on single fixture only. For end-to-end fixtures or other configurations not shown, consult your Armstrong Ceilings representative. NOTE: The above data is based on 48" hanger wire spacing, board weight of 1 lb./SF, maximum deflection of tees not to exceed 1/360 of the span, and suspension system installed in accordance with ASTM C636.

COLOR AND FINISH SELECTION



†† Capping only
††† Peel-off protective film on exposed surfaces to protect from scuffing or marking during installation

• Items available in powder content fision.

Items available in powder-coated finish
When specifying or ordering items with a color or finish, add the two-letter suffix to the end of the item number (e.g., 7301<u>HA</u> – Haze)



PRELUDE® XL® and PRELUDE XL HIGH RECYCLED CONTENT (HRC)

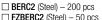
15/16" Exposed Tee System

ACCESSORIES

BERC2 - 2" Beam End Retaining Clip - Allows you to create a code compliant Seismic D, E, F ceiling installation while eliminating the need to use 2" wall molding or spreader bars

ALBERC2 - (aluminum)



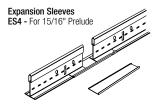




☐ ALBERC2 (Aluminum) — 200 pcs ☐ FZBERC2 (Steel) — 50 pcs ☐ FZALBERC2 (Aluminum) — 50 pcs

STAC - Single Tee Adapter Clip -Used to create code compliant non-seismic and seismic C and D, E, F off-module main beam to cross tee connections.

☐ STAC - 120 pcs ☐ **FZSTAC** – 50 pcs



□ ES4 - 200 pcs ☐ **FZES4** – 50 pcs

GCWA – Grip Clip Wall Attachment Joins main beam or cross tee to wall molding via locking barbs without pop rivets or screws.

☐ **GCWA** - 250 pcs ☐ FZGCWA - 50 pcs

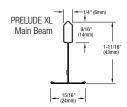
DETAILS

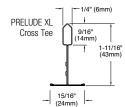


PRELUDE XL



PRELUDE XL Cross Tee









SEISMIC PERFORMANCE

Main Beams

7301, 7301HRC, 7306, 7307, 8301

Minimum Lbs. To Pull Out Compression/Tension

330.0

Cross Tees

All XL cross tees exceed 300 lbs. in both compression and tension.

ICC Reports

For areas under ICC jurisdiction, see ICC evaluation report number ESR-1308 for allowable values and/or conditions of use concerning the suspension system components listed on this page. The report is subject to reexamination, revisions, and possible cancellation.

PHYSICAL DATA

Material

Hot dipped galvanized steel

Surface Finish

Baked polyester paint or powder coated Manufactured and tested in accordance with ASTM C635 **Face Dimension** 15/16"

Profile Exposed tee

Cross Tee/Main Beam Interface

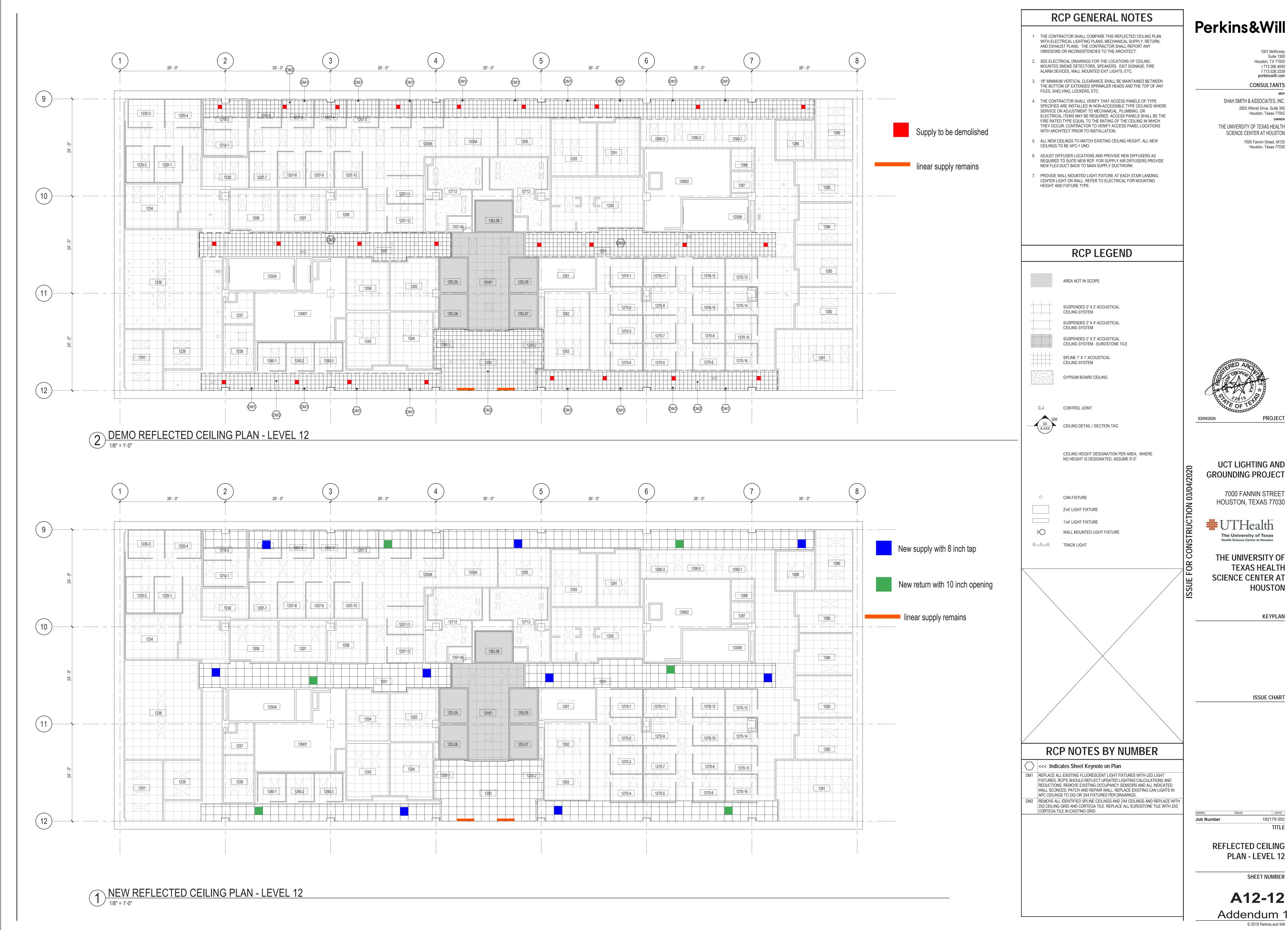
End Detail

Main Beam: Staked-on clip Cross Tee: Staked-on clip

Duty Classification

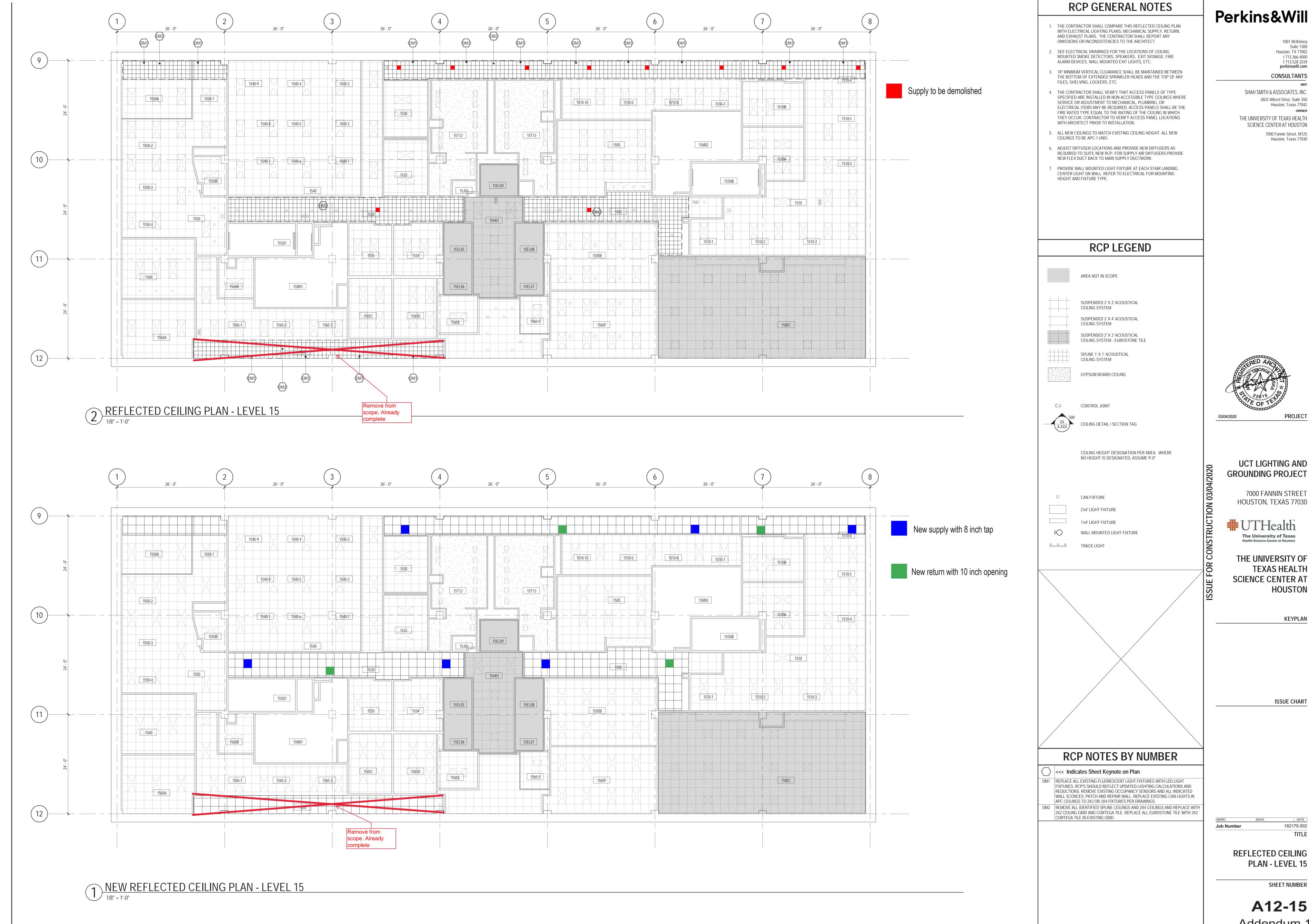
Intermediate or Heavy-duty





2825 Wilcret Drive, Suite 350

A12-12



Perkins&Will

1001 McKinney Suite 1300 Houston, TX 77002 t 713.366.4000 f 713.528.3339 perkinswill.com CONSULTANTS

SHAH SMITH & ASSOCIATES, INC. 2825 Wilcret Drive, Suite 350 Houston, Texas 77042

THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON 7000 Fannin Street, M125

Houston, Texas 77030

PROJECT

THE UNIVERSITY OF **TEXAS HEALTH SCIENCE CENTER AT HOUSTON KEYPLAN**

REFLECTED CEILING PLAN - LEVEL 15

SHEET NUMBER

182179.002

TITLE

ISSUE CHART

A12-15 Addendum 1



Perkins&Will

1001 McKinney Suite 1300 Houston, TX 77002 t 713.366.4000 f 713.528.3339 perkinswill.com CONSULTANTS

SHAH SMITH & ASSOCIATES, INC. 2825 Wilcret Drive, Suite 350 Houston, Texas 77042

THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON 7000 Fannin Street, M125 Houston, Texas 77030

PROJECT

KEYPLAN

ISSUE CHART

UCT LIGHTING AND

7000 FANNIN STREET

HOUSTON, TEXAS 77030

UTHealth

The University of Texas **Health Science Center at Houston**

GROUNDING PROJECT

THE UNIVERSITY OF **TEXAS HEALTH SCIENCE CENTER AT** HOUSTON

TITLE

Job Number

REFLECTED CEILING PLAN - LEVEL 22

SHEET NUMBER

182179.002

A12-22

Addendum 1

REVISED - SECTION 6

PRICING AND DELIVERY SCHEDULE

Propo:	sai oi:			
		(Proposer Company Name)		
То:	Th	e University of Texas Health Science	Center at Houston	
Ref.:	UC	CT Emergency Light Code Compliance	& LED Retrofit	
RFP N	o.: 744	-R2014		
Ladies	and Ge	ntlemen:		
and an Center the und bonding firm, fix	y Adder at Hous dersigne g to con ed price	nda to the Plans and Specifications as ston (the Owner of this Project), as well ad promises to furnish all equipment, applete the entire work in complete ac	the General Conditions, the Plans and Specification prepared by the University of Texas Health Scient as the premises and all conditions affecting the work labor, materials, supervision, services, and requirecordance with the above document for the following which include assumptions or exceptions to the work labor.	ork, ed ng
6.1	Total I	Base Price (Level 22)		
	Price:	\$		
			DOLLARS	
			tten and figure form. In the event of a discrepan	су
	6.1.1	Breakdown of Base Price		
		Total Materials Cost	\$	
		Total Labor Cost	\$	
		Total General Conditions	\$	
		Total Overhead	\$	
		Total Profit	\$	
6.2	Altern	ate 1 Price (Level 12)		
	Price:	\$		
			DOLLARS	

6.3	Alternate 2 Price (Level 15)	
	Price: \$	
		DOLLARS
6.4	Alternate 3 Price (Mall Level)	
	Price: \$	
		DOLLARS
6.5	Alternate 4 Price (Level 8)	
	Price: \$	
		DOLLARS
	Please provide a Schedule of Values of Base Bid and all Alternates along w	ith your Pricing Bid
6.6	Base Delivery Schedule	
	Indicate total time for completion of entire project.	
	Calendar Days to Complete (Days to complete must match the days in the Construction Schedule documents.)	nent that is provided
	Additional Calendar Days to complete Alternate 1 (if applicable)	
	Additional Calendar Days to complete Alternate 2 (if applicable)	
	Additional Calendar Days to complete Alternate 3 (if applicable)	
	Additional Calendar Days to complete Alternate 4 (if applicable)	
	Your calendar days to complete the project must include the following: NTP, Submittals, Procurement of Materials, Required Float, Construction	
	Substantial Completion Date:	
	Final Completion Date (close out documents, completion of punchlist):	

<u>Deductive Alternates working normal hours in lieu of non-normal hours*</u>

	Cost Schedule (Working Days)
Deductive Alternate 5 - Level 22	\$
Deductive Alternate 6 – Level 12	\$
Deductive Alternate 7 – Level 15	\$
Deductive Alternate 8 – Mall level	\$
Deductive Alternate 9 – Level 8	\$
*Non-Normal Hours: Monday-Friday 5pm-7am& Saturday 8 Normal Hours: Monday-Friday 7am-5pm	Sunday
Your calendar days to complete the project mus NTP, Submittals, Procurement of Materials, Re	
Substantial Completion Date:	
Final Completion Date (close out document	s, completion of punchlist):
UTHealth sufficiently in advance of inability to d UTHealth the option of imposing liquidated da	ntractor's duties. Failure of the Contractor to notify complete within the delivery schedule, shall grant mages in the amount of fifteen hundred dollars the foregoing, UTHealth shall have no obligation to hance by Contractor.
University's Payment Terms	
University's standard payment terms are "net 30 <i>Act</i> (ref. <u>Chapter 2251</u> , <u>Government Code</u>).	days" as mandated by the Texas Prompt Payment
Indicate below the prompt payment discount that	t Proposer offers:
Prompt Payment Discount:%days/	net 30 days.

6.3

Section 51.012, Education Code, authorizes University to make payments through electronic funds transfer methods. Respondent agrees to accept payments from University through those methods, including the automated clearing house system (ACH). Respondent agrees to provide Respondent's banking information to University in writing on Respondent letterhead signed by an authorized representative of Respondent. Prior to the first payment, University will confirm Respondent's banking information. Changes to Respondent's bank information must be communicated to University in writing at least thirty (30) days before the effective date of the change and must include an IRS Form W-9 signed by an authorized representative of Respondent.

University, an agency of the State of Texas, is exempt from Texas Sales & Use Tax on goods and services in accordance with <u>Section 151.309</u>, <u>Tax Code</u>, and <u>Title 34 TAC Section 3.322</u>. Pursuant to <u>34 TAC Section 3.322(c)(4)</u>, University is not required to provide a tax exemption certificate to establish its tax exempt status.

Respectfully submitted,
Proposer:
By:(Authorized Signature for Proposer)
Name:
Title:
Date: