U.S. ARCHITECTURAL LIGHTING

PROJECT NAME:

FIXTURE TYPE:

TSUNAMI15

LED AREA LUMINAIRE

Luminaire
Heavy cast, low copper aluminum assembly (A356 alloy, <.2% copper) minimum wall thickness .188" with integral cooling ribs surrounding the electrical compartment. Passive radiating fins above the LED Optics provide superior thermal management and long LED life. The optical and electrical compartments are integrated with the support arm to create one assembly. Cast and hinged driver compartment cover is integrated with wiring compartment cover.

PLED™ Optics
Emitters (LED's) are arrayed on a metal core PCB panel with each emitter located on a copper thermal transfer pad and enclosed by an LED refractor. LED optics completely seal each individual emitter to meet an IP66 rating. In asymmetric distributions, a micro-reflector inside the refractor re-directs the house side emitter output towards the street side and functions as a house side shielding element. Refractors are injection molded optical acrylic. Each LED refractor is sealed to the PCB over an emitter and all refractors are retained by an aluminum frame. Any one Panel, or group of Panels in a luminaire, have the same optical pattern. LED refractors produce standard and specialized street, site, and area distributions. All distributions are Zero Uplight (U0), Full-Cutoff. Panels are field replaceable and field rotatable in 90° increments.

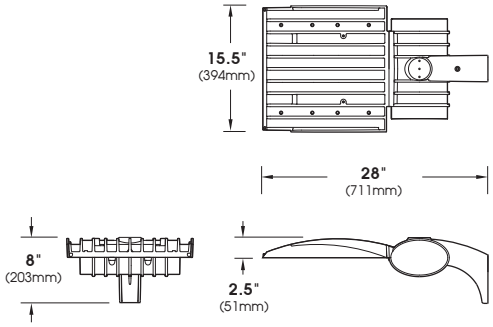
LED Emitters
High Power White LED's are driven between 350mA and 1050mA for a maximum output of 3 Watts nominal each. LED's are available in standard Neutral White (4000K), Cool White (5000K), or Warm White (2700K & 3000K). All Standard LED's have a minimum of 70 CRI. Consult Factory for other LED options. Lumen Maintenance of L94 at 60,000 hours (TM-21 calculated at 6x Test Time).

True Amber LED's TRA-True Amber LED's emit light in the amber spectral bandwidth centered on 585-590nm. True Amber has negligible blue light and is suitable for wildlife.

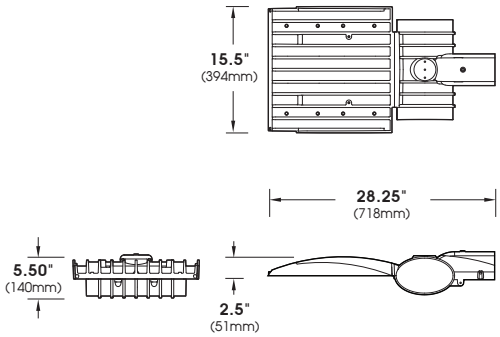
LED Driver
Constant current electronic with a power factor of >0.90, THD less than 10% and a minimum operating temperature of -40°F/-40°C. Driver(s) is/are UL and cUL recognized. Drivers accept an input of 120-277V, 50/60Hz or 347V-480V, 50/60Hz. 0-10V dimmable driver is standard. Driver has a minimum of 3KV internal surge protection. Luminaire supplied with 20KV surge protector for field installation.

Finish
Super TGIC polyester powder coating is applied onto a metal substrate this has been pretreated with a four-stage process for maximum adhesion and color retention. The top coat is baked at 400° F for maximum hardness and exterior durability.

TSN15 (Pole Mount)



TSN15-ST (Street Arm Mount)

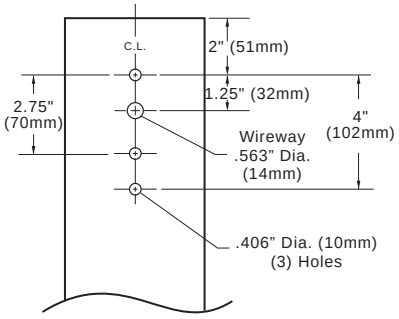


MADE IN THE USA | BABA compliant | U.L. Listed for Wet Location

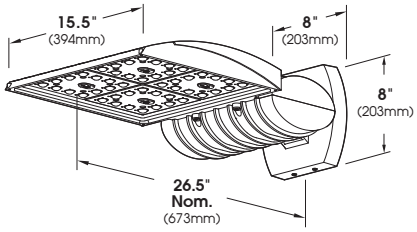
2026161

SPECIFICATIONS

POLE DRILLING TEMPLATE



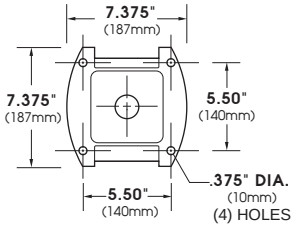
WALL MOUNT



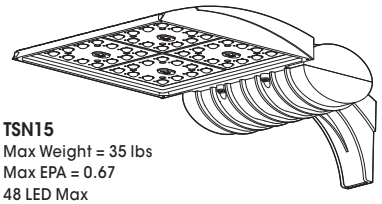
Cast aluminum wall bracket assembly provided with built in gasketed wire access for fixture/supply wire connection.

Mounting hardware by others.

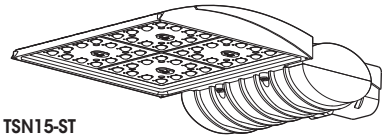
WALL PLATE



EPA & WEIGHT

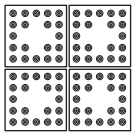


TSN15
Max Weight = 35 lbs
Max EPA = 0.67
48 LED Max

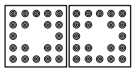


TSN15-ST
Max Weight = 35 lbs
Max EPA = 0.67
48 LED Max

PLED™ MODULES



80 LED Module



40 LED Module

ORDERING INFORMATION

Spec/Order Example: TSN15/PLED-IV-FT/40LED-700mA/50K/277/3-120/RAL-9003-T

Luminaire	Optics	LED Mode	Voltage	Mounting	Finish	Options

Luminaire

- ☐ **TSN15**
- ☐ **TSN15-ST**

Optics

PLED™ Distribution Type

- ☐ Type II **PLED-II**
- ☐ Type II Front Row **PLED-II-FR**
- ☐ Type III Median Illuminator **PLED-II-ML**
- ☐ Type III Med. **PLED-III-M**
- ☐ Type III Wide **PLED-III-W**
- ☐ Type IV **PLED-IV**
- ☐ Type IV **PLED-IV-FT**
- ☐ Type V Narrow **PLED-VSQ-N**
- ☐ Type V Med. **PLED-V-SQ-M**
- ☐ Type V Wide **PLED-V-SQ-W**

LED

# of LEDs
- ☐ **80LED**
- ☐ **40LED**

Drive Current
- ☐ **1050mA**
- ☐ **875mA**
- ☐ **700mA**
- ☐ **525mA**
- ☐ **350mA**

Color Temp - CCT
- ☐ **27K** (2700K)
- ☐ **30K** (3000K)
- ☐ **40K** (4000K)
- ☐ **50K** (5000K)
- ☐ **TRA** True Amber*

Consult Factory for Other LED Color, CCT, & CRI Options

*TRA Available only in 350mA and 525mA Drive Currents

Consult Factory for Other Drive Currents

Voltage

- ☐ **120**
- ☐ **208**
- ☐ **240**
- ☐ **277**
- ☐ **347**
- ☐ **480**

Mounting

Arm Mount
- ☐ **1**
- ☐ **2-180**
- ☐ **2-90**
- ☐ **3-90**
- ☐ **3-120**
- ☐ **4-90**
- ☐ Universal Pole Adaptor **UPA**

Wall Mount
- ☐ **WM**

WM - Wall Mount provided with mounting bracket and cover.

Finish

Standard Textured Finish
- ☐ Black **RAL-9005-T**
- ☐ White **RAL-9003-T**
- ☐ Grey **RAL-7004-T**
- ☐ Dark Bronze **RAL-8019-T**
- ☐ Green **RAL-6005-T**

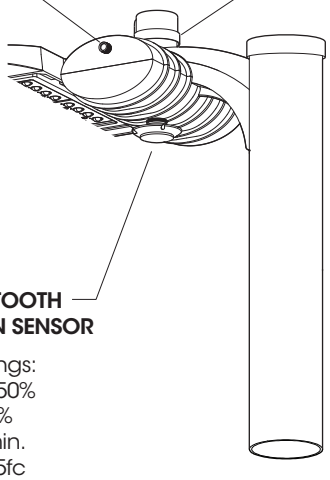
For smooth finish replace suffix "T" with suffix "S" (Example: RAL-9500-S)

Consult factor for custom colors

Options

- ☐ Internal House Side Shield inc. LED Count (Example: HS-PLED/48) **HS-PLED**
- ☐ External Glare Shield 4 Sided **EGS4**
- ☐ External Glare Shield 3 Sided Rear Wedge **EGS3W**
- ☐ Twist Lock Receptacle Only **TPR**
- ☐ 7-Pin Twist Lock Receptacle Only **TPR7**
- ☐ High-Low Dimming for Switch by Others/Select Levels 50/100 or 25/100 (Example: HLSW/25) **HLSW**
- ☐ Photo Cell + Voltage (Example: PC120V) **PC+V**
- ☐ Single Fuse (120V, 277V) **SF**
- ☐ Double Fuse (208V, 240V) **DF**
- ☐ Blue-Tooth Programmable Photo/Motion Sensor (Factory - Motion 50/100; Photo 75fc) **MS-F311**

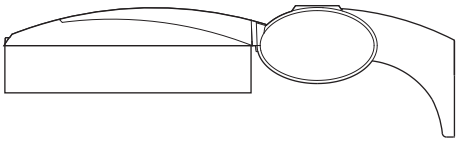
OPTIONS



Factory Settings:
No Motion - 50%
Motion - 100%
Delay - 15 min.
Photocell - 75fc

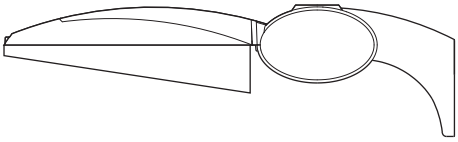
Sensors can be Field Programmed With Bluetooth App

EXTERNAL GLARE SHIELDS



EGS4 - 4 Sided 3" Deep

Minimum Cutoff = 12°
Average Cutoff = 23°



EGS3W - 3 Sided 3" Deep Wedge

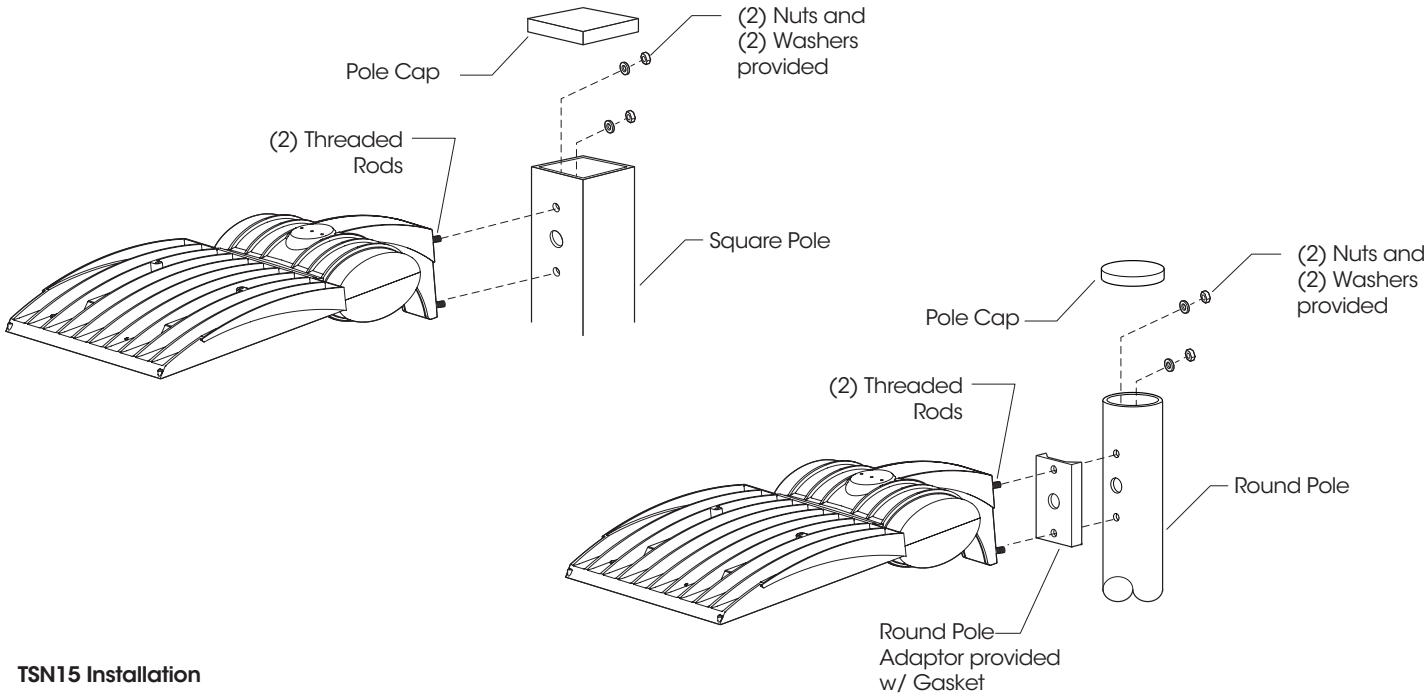
Minimum Rear Cutoff = 12°
Average Rear Cutoff = 23°
Minimum Side Cutoff = 4°
Average Side Cutoff = 16°

Glare Shields are non-rotatable.
Not for use with Ambience Lens.
Consult factory for custom applications.

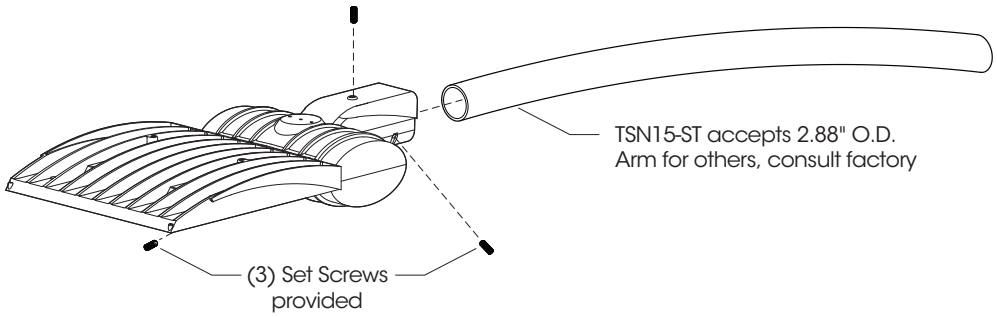
High Low Dimming For Switches (HLSW)
The HLSW is a Small Electronic Switch which Provides High Low Dimming Control Through the LED Driver's 0-10V Control. Switching is Done by Adding a Seconday AC Switched Hot Trigger Line to the HLSW in Addition to the Normal AC Power Line. When the Secondary Trigger Line is Powered, the Fixture will go to 100% Dimming. With no Power to the Trigger, the Fixture will operate at 50% or 25% Dimming. Switches for the Trigger Line can be a Normal AC Switch/Breaker or Timed Switch/Breaker.

Wireless and Other Fixture Controls
Contact Factory for Wireless and Other Fixture Controls and Recomendations. Most Controls Can be Integrated and Factory Installed.

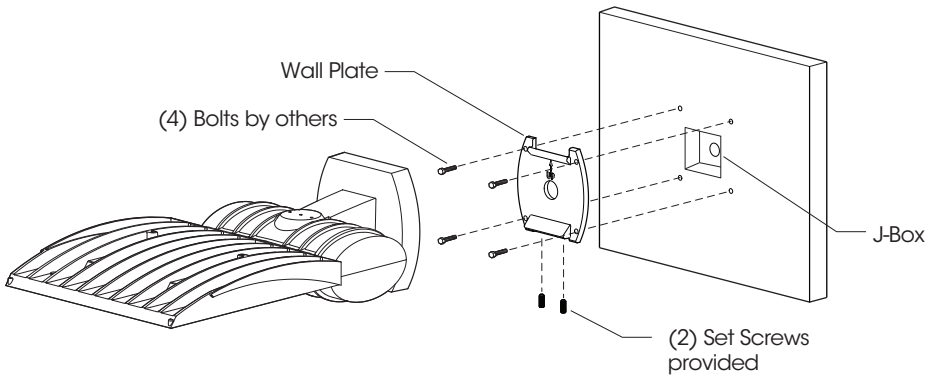
INSTALLATION DETAIL



TSN15 Installation



TSN15-ST Installation



TSN15-WMT Installation

PHOTOMETRIC DATA GUIDE - LM-80 LUMEN MAINTENANCE

LED Life / Operating Hours	Lumen Depreciation	Lumen Depreciation Scale Factor
60,000 (10x Test Time Calculated)	L94	0.94x
100,000 (Theoretical Calculated)	L92	0.92x
150,000 (Theoretical Calcualted)	L89	0.89x

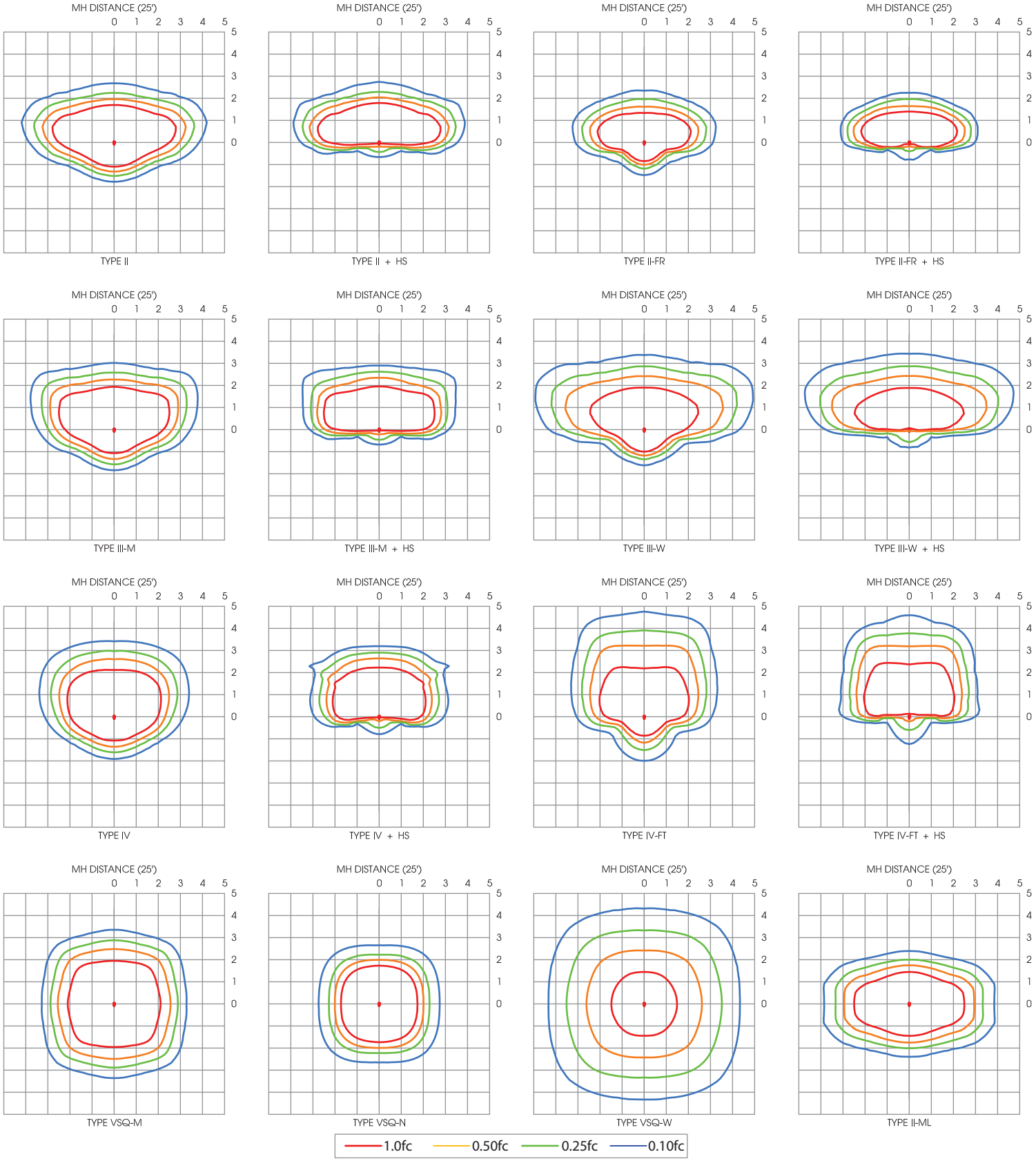
Lumen Depreciation Calculations Done in Accordance With IESNA TM-21 & LM-80 (25°C Ambient)
TM-21 6x Test Time Dicatates that L94 > 60,000 Hours.

ELECTRICAL DATA GUIDE - AMPERAGE CHARTS

# of LEDs	mA	System Watts	120V	208V	277V	347V	480V
40	350	43	0.36	0.21	0.15	0.12	0.09
40	525	65	0.54	0.31	0.23	0.19	0.13
40	700	87	0.72	0.42	0.31	0.25	0.18
40	875	108	0.90	0.52	0.39	0.31	0.23
40	1050	128	1.07	0.62	0.46	0.37	0.27
80	350	85	0.71	0.41	0.31	0.25	0.18
80	525	129	1.08	0.62	0.47	0.37	0.27
80	700	174	1.45	0.83	0.63	0.50	0.36
80	875	216	1.80	1.04	0.78	0.62	0.45
80	1050	256	2.14	1.23	0.93	0.74	0.53

PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

TSN15-80LED-700MA-40K 25'POLE HEIGHT



PHOTOMETRIC DATA GUIDE - LUMEN TABLES (TSN15-PLED)

TSN15-PLED																			
LED Count	Drive Current (mA)	System Watts	Dist'n Type	27K (2700K - 70CRI)			30K (3000K - 70CRI)			40K (4000K - 70CRI)			50K (5000K - 70CRI)			System Watts	TRA (590nm)		
				LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING		LUMENS	LPW	BUG RATING
40	350	42.7	II	5819	136	B2-U0-G1	6281	147	B2-U0-G1	6612	155	B2-U0-G2	6943	163	B2-U0-G2	33.0	2309	70	B1-U0-G1
			II-FR	5858	137	B2-U0-G1	6324	148	B2-U0-G1	6657	156	B2-U0-G1	6990	164	B2-U0-G1		2325	70	B1-U0-G0
			II-ML	5819	136	B3-U0-G3	6282	147	B3-U0-G3	6612	155	B3-U0-G3	6943	163	B3-U0-G3		2309	70	B1-U0-G1
			III-M	5921	139	B1-U0-G2	6392	150	B2-U0-G2	6728	158	B2-U0-G2	7065	165	B2-U0-G2		2349	71	B1-U0-G1
			III-W	5497	129	B1-U0-G2	5935	139	B1-U0-G2	6247	146	B1-U0-G2	6559	154	B1-U0-G2		2182	66	B1-U0-G1
			IV	5876	138	B1-U0-G2	6344	149	B2-U0-G2	6677	156	B2-U0-G2	7011	164	B2-U0-G2		2332	71	B1-U0-G1
			IV-FT	5353	125	B1-U0-G2	5778	135	B1-U0-G2	6083	142	B1-U0-G2	6387	150	B1-U0-G2		2124	64	B1-U0-G1
			VSQ-N	6141	144	B2-U0-G1	6630	155	B2-U0-G1	6979	163	B2-U0-G1	7328	172	B2-U0-G1		2438	74	B1-U0-G0
			VSQ-M	6023	141	B3-U0-G1	6502	152	B3-U0-G1	6844	160	B3-U0-G1	7186	168	B3-U0-G1		2390	72	B2-U0-G1
			VSQ-W	5879	138	B3-U0-G2	6346	149	B3-U0-G2	6680	156	B3-U0-G2	7015	164	B3-U0-G2		2333	71	B2-U0-G1
			II-HS	4256	100	B0-U0-G1	4594	108	B1-U0-G1	4836	113	B1-U0-G2	5077	119	B1-U0-G2		1689	51	B0-U0-G0
			II-FR-HS	4329	101	B0-U0-G1	4673	109	B0-U0-G1	4919	115	B0-U0-G1	5165	121	B0-U0-G1		1718	52	B0-U0-G0
			III-M-HS	4305	101	B0-U0-G2	4647	109	B0-U0-G2	4892	115	B0-U0-G2	5137	120	B0-U0-G2		1708	52	B0-U0-G1
			III-W-HS	4214	99	B0-U0-G2	4550	107	B0-U0-G2	4789	112	B0-U0-G2	5028	118	B0-U0-G2		1673	51	B0-U0-G1
			IV-HS	4447	104	B0-U0-G1	4801	112	B0-U0-G2	5054	118	B0-U0-G2	5306	124	B0-U0-G2		1764	53	B0-U0-G1
			IV-FT-HS	4203	98	B0-U0-G2	4537	106	B0-U0-G2	4776	112	B0-U0-G2	5015	117	B0-U0-G2		1668	51	B0-U0-G1
40	525	64.7	II	8396	130	B2-U0-G2	9064	140	B2-U0-G2	9541	147	B2-U0-G2	10017	155	B2-U0-G2	51.0	2715	53	B1-U0-G1
			II-FR	8452	131	B2-U0-G1	9125	141	B2-U0-G1	9605	148	B2-U0-G1	10085	156	B2-U0-G1		2733	54	B1-U0-G1
			II-ML	8396	130	B3-U0-G3	9064	140	B3-U0-G3	9541	147	B3-U0-G3	10018	155	B3-U0-G3		2715	53	B1-U0-G1
			III-M	8543	132	B2-U0-G2	9223	143	B2-U0-G2	9708	150	B2-U0-G2	10194	158	B2-U0-G2		2762	54	B1-U0-G1
			III-W	7932	123	B2-U0-G2	8563	132	B2-U0-G2	9013	139	B2-U0-G3	9464	146	B2-U0-G3		2565	50	B1-U0-G1
			IV	8478	131	B2-U0-G2	9152	141	B2-U0-G2	9634	149	B2-U0-G2	10116	156	B2-U0-G2		2742	54	B1-U0-G1
			IV-FT	7724	119	B2-U0-G3	8338	129	B2-U0-G3	8777	136	B2-U0-G3	9216	142	B2-U0-G3		2497	49	B1-U0-G1
			VSQ-N	8861	137	B3-U0-G1	9566	148	B3-U0-G1	10070	156	B3-U0-G1	10574	163	B3-U0-G1		2866	56	B1-U0-G0
			VSQ-M	8690	134	B3-U0-G2	9381	145	B3-U0-G2	9875	153	B3-U0-G2	10369	160	B3-U0-G2		2809	55	B2-U0-G1
			VSQ-W	8483	131	B4-U0-G2	9157	142	B4-U0-G2	9640	149	B4-U0-G3	10122	156	B4-U0-G3		2743	54	B2-U0-G1
			II-HS	6141	95	B1-U0-G2	6629	102	B1-U0-G2	6978	108	B1-U0-G2	7327	113	B1-U0-G2		1985	39	B0-U0-G1
			II-FR-HS	6246	97	B1-U0-G1	6743	104	B1-U0-G1	7098	110	B1-U0-G1	7453	115	B1-U0-G1		2020	40	B0-U0-G0
			III-M-HS	6212	96	B0-U0-G2	6706	104	B0-U0-G2	7060	109	B0-U0-G2	7412	115	B0-U0-G2		2009	39	B0-U0-G1
			III-W-HS	6081	94	B0-U0-G2	6564	101	B0-U0-G2	6910	107	B0-U0-G2	7255	112	B0-U0-G2		1966	39	B0-U0-G1
			IV-HS	6417	99	B0-U0-G2	6927	107	B0-U0-G2	7292	113	B0-U0-G2	7656	118	B1-U0-G2		2075	41	B0-U0-G1
			IV-FT-HS	6064	94	B0-U0-G2	6546	101	B0-U0-G2	6891	107	B1-U0-G2	7235	112	B1-U0-G3		1960	38	B0-U0-G1
40	700	86.8	II	10669	123	B2-U0-G2	11518	133	B2-U0-G2	12124	140	B2-U0-G2	12730	147	B2-U0-G2	N/A	N/A		
			II-FR	10740	124	B2-U0-G1	11594	134	B3-U0-G1	12205	141	B3-U0-G1	12815	148	B3-U0-G1				
			II-ML	10669	123	B3-U0-G3	11518	133	B3-U0-G3	12124	140	B3-U0-G3	12731	147	B3-U0-G3				
			III-M	10856	125	B2-U0-G2	11719	135	B2-U0-G2	12336	142	B2-U0-G2	12953	149	B2-U0-G2				
			III-W	10079	116	B2-U0-G3	10880	125	B2-U0-G3	11453	132	B2-U0-G3	12026	139	B2-U0-G3				
			IV	10774	124	B2-U0-G2	11630	134	B2-U0-G2	12243	141	B2-U0-G2	12855	148	B2-U0-G2				
			IV-FT	9814	113	B2-U0-G3	10595	122	B2-U0-G3	11153	128	B2-U0-G3	11710	135	B2-U0-G3				
			VSQ-N	11260	130	B3-U0-G1	12156	140	B3-U0-G1	12796	147	B3-U0-G1	13435	155	B3-U0-G1				
			VSQ-M	11042	127	B4-U0-G2	11920	137	B4-U0-G2	12548	145	B4-U0-G2	13175	152	B4-U0-G2				
			VSQ-W	10778	124	B4-U0-G3	11636	134	B4-U0-G3	12248	141	B4-U0-G3	12860	148	B4-U0-G3				
			II-HS	7803	90	B1-U0-G2	8423	97	B1-U0-G2	8866	102	B1-U0-G2	9310	107	B1-U0-G2				
			II-FR-HS	7937	91	B1-U0-G1	8568	99	B1-U0-G1	9019	104	B1-U0-G1	9470	109	B1-U0-G1				
			III-M-HS	7893	91	B1-U0-G2	8521	98	B1-U0-G2	8970	103	B1-U0-G2	9418	109	B1-U0-G2				
			III-W-HS	7726	89	B0-U0-G2	8341	96	B1-U0-G2	8780	101	B1-U0-G2	9218	106	B1-U0-G2				
			IV-HS	8153	94	B1-U0-G2	8802	101	B1-U0-G2	9265	107	B1-U0-G2	9728	112	B1-U0-G2				
			IV-FT-HS	7705	89	B1-U0-G3	8318	96	B1-U0-G3	8756	101	B1-U0-G3	9194	106	B1-U0-G3				
40	875	108.0	II	12366	114	B2-U0-G2	13349	124	B2-U0-G2	14052	130	B2-U0-G2	14754	137	B3-U0-G2	N/A	N/A		
			II-FR	12448	115	B3-U0-G1	13439	124	B3-U0-G1	14146	131	B3-U0-G1	14853	138	B3-U0-G2				
			II-ML	12366	115	B3-U0-G3	13349	124	B3-U0-G3	14052	130	B3-U0-G3	14755	137	B4-U0-G4				
			III-M	12581	116	B2-U0-G2	13582	126	B2-U0-G2	14297	132	B2-U0-G2	15012	139	B2-U0-G2				
			III-W	11682	108	B2-U0-G3	12611	117	B2-U0-G3	13275	123	B2-U0-G3	13939	129	B2-U0-G3				
			IV	12487	116	B2-U0-G2	13480	125	B2-U0-G2	14189	131	B2-U0-G2	14899	138	B2-U0-G2				
			IV-FT	11375	105	B2-U0-G3	12280	114	B2-U0-G3	12926	120	B2-U0-G3	13573	126	B2-U0-G3				
			VSQ-N	13051	121	B3-U0-G1	14089	130	B3-U0-G1	14830	137	B3-U0-G1	15572	144	B3-U0-G1				
			VSQ-M	12798	118	B4-U0-G2	13816	128	B4-U0-G2	14543	135	B4-U0-G2	15270	141	B4-U0-G2				
			VSQ-W	12492	116	B4-U0-G3	13486	125	B4-U0-G3	14196	131	B4-U0-G3	14905	138	B4-U0-G3				
			II-HS	9044	84	B1-U0-G2	9763	90	B1-U0-G2	10277	95	B1-U0-G2	10791	100	B1-U0-G2				
			II-FR-HS	9199	85	B1-U0-G1	9930	92	B1-U0-G1	10453	97	B1-U0-G1	10976	102	B1-U0-G1				
			III-M-HS	9149	85	B1-U0-G2	9876	91	B1-U0-G2	10396	96	B1-U0-G2	10916	101	B1-U0-G2				
			III-W-HS	8955	83	B1-U0-G2	9667	90	B1-U0-G3	10176	94	B1-U0-G3	10685	99	B1-U0-G3				
			IV-HS	9450	87	B1-U0-G2	10201	94	B1-U0-G2	10738	99	B1-U0-G2	11275	104	B1-U0-G2				
			IV-FT-HS	8931	83	B1-U0-G3	9641	89	B1-U0-G3	10149	94	B1-U0-G3	10656	99	B1-U0-G3				
40	1050	128.2	II	14213	111	B2-U0-G2	15344	120	B3-U0-G2	16151	126	B3-U0-G3	16959	132	B3-U0-G3	N/A	N/A		
			II-FR	14308	112	B3-U0-G1	15446	120	B3-U0-G2	16259	127	B3-U0-G2	17072	133	B3-U0-G2				
			II-ML	14214	111	B3-U0-G3	15344	120	B4-U0-G4	16152	126	B4-U0-G4	16959	132	B4-U0-G4				
			III-M	14461	113	B2-U0-G2	15612	122	B3-U0-G2	16433	128	B3-U0-G3	17255	135	B3-U0-G3				
			III-W	13427	105	B2-U0-G3	14495	113	B2-U0-G3	15258	119	B2-U0-G3	16021	125	B3-U0-G3				
			IV	14352	112	B2-U0-G2	15494	121	B3-U0-G2	16309	127	B3-U0-G3	17125	134	B3-U0-G3				
			IV-FT	13075	102	B2-U0-G3	14115	110	B2-U0-G3	14858	116	B3-U0-G3	15601	122	B3-U0-G3				
			VSQ-N	15001	117	B3-U0-G1	16194	126	B4-U0-G1	17046	133	B4-U0-G2	17899	140	B4-U0-G2				
			VSQ-M	14710	115	B4-U0-G2	15880	124	B4-U0-G2	16716	130	B4-U0-G2	17552	137	B4-U0-G2				
			VSQ-W	14359	112	B4-U0-G3	15501	121	B4-U0-G3	16317	127	B4-U0-G3	17132	134	B5-U0-G3				
			II-HS	10395	81	B1-U0-G2	11222	88	B1-U0-G2	11813	92	B1-U0-G2	12403	97	B1-U0-G2				
			II-FR-HS	10573	82	B1-U0-G1	11414	89	B1-U0-G2	12015	94	B1-U0-G2	12616	98	B1-U0-G2				
			III-M-HS	10516	82	B1-U0-G2	11352	89	B1-U0-G2	11949	93	B1-U0-G3	12547	98	B1-U0-G3				
			III-W-HS	10293	80	B1-U0-G3	11112	87	B1-U0-G3	11696	91	B1-U0-G3	12281	96	B1-U0-G3				
			IV-HS	10862	85	B1-U0-G2	11726	91	B1-U0-G2	12343	96	B1-U0-G2	12960	101	B1-U0-G3				
			IV-FT-HS	10266	80	B1-U0-G3	11082	86	B1-U0-G3	11665	91	B1-U0-G3	12248	96	B1-U0-G3				

IES File downloads for this product can be found at www.usaltg.com/downloads/asr.html

PHOTOMETRIC DATA GUIDE - LUMEN TABLES (TSN15-PLED)

TSN15-PLED																			
LED Count	Drive Current (mA)	System Watts	Dist'n Type	27K (2700K - 70CRI)			30K (3000K - 70CRI)			40K (4000K - 70CRI)			50K (5000K - 70CRI)			System Watts	TRA (590nm)		
				LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING		LUMENS	LPW	BUG RATING
80	350	85.4	II	11277	132	B2-U0-G2	12174	143	B2-U0-G2	12814	150	B2-U0-G2	13455	158	B2-U0-G2	67.0	4475	67	B1-U0-G1
			II-FR	11352	133	B3-U0-G1	12256	144	B3-U0-G1	12901	151	B3-U0-G1	13546	159	B3-U0-G1		4504	67	B1-U0-G1
			II-ML	11277	132	B3-U0-G3	12175	143	B3-U0-G3	12815	150	B3-U0-G3	13456	158	B3-U0-G3		4475	67	B2-U0-G2
			III-M	11474	134	B2-U0-G2	12387	145	B2-U0-G2	13039	153	B2-U0-G2	13691	160	B2-U0-G2		4553	68	B1-U0-G1
			III-W	10654	125	B2-U0-G3	11501	135	B2-U0-G3	12106	142	B2-U0-G3	12712	149	B2-U0-G3		4228	63	B1-U0-G2
			IV	11388	133	B2-U0-G2	12294	144	B2-U0-G2	12941	152	B2-U0-G2	13588	159	B2-U0-G2		4518	67	B1-U0-G1
			IV-FT	10374	121	B2-U0-G3	11199	131	B2-U0-G3	11788	138	B2-U0-G3	12377	145	B2-U0-G3		4117	61	B1-U0-G1
			VSQ-N	11902	139	B3-U0-G1	12849	150	B3-U0-G1	13525	158	B3-U0-G1	14202	166	B3-U0-G1		4723	70	B2-U0-G1
			VSQ-M	11671	137	B4-U0-G2	12600	148	B4-U0-G2	13263	155	B4-U0-G2	13927	163	B4-U0-G2		4631	69	B3-U0-G1
			VSQ-W	11392	133	B4-U0-G3	12299	144	B4-U0-G3	12946	152	B4-U0-G3	13593	159	B4-U0-G3		4520	67	B3-U0-G2
			II-HS	8247	97	B1-U0-G2	8903	104	B1-U0-G2	9372	110	B1-U0-G2	9840	115	B1-U0-G2		3273	49	B0-U0-G1
			II-FR-HS	8389	98	B1-U0-G1	9056	106	B1-U0-G1	9533	112	B1-U0-G1	10009	117	B1-U0-G1		3329	50	B0-U0-G1
			III-M-HS	8344	98	B1-U0-G2	9007	105	B1-U0-G2	9482	111	B1-U0-G2	9956	117	B1-U0-G2		3311	49	B0-U0-G1
			III-W-HS	8167	96	B1-U0-G2	8817	103	B1-U0-G2	9281	109	B1-U0-G2	9745	114	B1-U0-G3		3240	48	B0-U0-G1
			IV-HS	8618	101	B1-U0-G2	9304	109	B1-U0-G2	9793	115	B1-U0-G2	10283	120	B1-U0-G2		3420	51	B0-U0-G1
			IV-FT-HS	8144	95	B1-U0-G3	8792	103	B1-U0-G3	9255	108	B1-U0-G3	9718	114	B1-U0-G3		3232	48	B0-U0-G2
80	525	129.4	II	16239	125	B3-U0-G3	17531	135	B3-U0-G3	18454	143	B3-U0-G3	19377	150	B3-U0-G3	101.0	5251	52	B1-U0-G1
			II-FR	16348	126	B3-U0-G2	17648	136	B3-U0-G2	18577	144	B3-U0-G2	19506	151	B3-U0-G2		5286	52	B1-U0-G1
			II-ML	16240	126	B4-U0-G4	17532	135	B4-U0-G4	18454	143	B4-U0-G4	19377	150	B4-U0-G4		5251	52	B2-U0-G2
			III-M	16523	128	B3-U0-G3	17837	138	B3-U0-G3	18776	145	B3-U0-G3	19715	152	B3-U0-G3		5343	53	B1-U0-G2
			III-W	15341	119	B2-U0-G3	16562	128	B3-U0-G3	17433	135	B3-U0-G3	18305	141	B3-U0-G3		4961	49	B1-U0-G2
			IV	16398	127	B3-U0-G3	17703	137	B3-U0-G3	18635	144	B3-U0-G3	19566	151	B3-U0-G3		5302	52	B1-U0-G1
			IV-FT	14938	115	B3-U0-G3	16127	125	B3-U0-G4	16976	131	B3-U0-G4	17824	138	B3-U0-G4		4830	48	B1-U0-G2
			VSQ-N	17140	132	B4-U0-G2	18504	143	B4-U0-G2	19477	151	B4-U0-G2	20451	158	B4-U0-G2		5542	55	B2-U0-G1
			VSQ-M	16807	130	B4-U0-G2	18144	140	B4-U0-G2	19099	148	B4-U0-G2	20053	155	B4-U0-G2		5434	54	B3-U0-G1
			VSQ-W	16406	127	B4-U0-G3	17711	137	B5-U0-G3	18643	144	B5-U0-G3	19575	151	B5-U0-G3		5304	53	B3-U0-G2
			II-HS	11877	92	B1-U0-G2	12821	99	B1-U0-G2	13496	104	B1-U0-G3	14171	110	B1-U0-G3		3841	38	B0-U0-G1
			II-FR-HS	12081	93	B1-U0-G2	13042	101	B1-U0-G2	13728	106	B1-U0-G2	14414	111	B1-U0-G2		3906	39	B0-U0-G1
			III-M-HS	12016	93	B1-U0-G3	12971	100	B1-U0-G3	13654	106	B1-U0-G3	14337	111	B1-U0-G3		3885	38	B0-U0-G1
			III-W-HS	11760	91	B1-U0-G3	12696	98	B1-U0-G3	13364	103	B1-U0-G3	14032	108	B1-U0-G3		3803	38	B0-U0-G2
			IV-HS	12411	96	B1-U0-G2	13398	104	B1-U0-G3	14103	109	B1-U0-G3	14808	114	B1-U0-G3		4013	40	B0-U0-G1
			IV-FT-HS	11729	91	B1-U0-G3	12662	98	B1-U0-G3	13328	103	B1-U0-G3	13995	108	B1-U0-G4		3792	38	B0-U0-G2
80	700	173.6	II	20595	119	B3-U0-G3	22232	128	B3-U0-G3	23403	135	B3-U0-G3	24573	142	B3-U0-G3	N/A	N/A		
			II-FR	20732	119	B3-U0-G2	22381	129	B3-U0-G2	23559	136	B3-U0-G2	24736	142	B3-U0-G2				
			II-ML	20595	119	B4-U0-G4	22233	128	B4-U0-G4	23403	135	B4-U0-G4	24573	142	B4-U0-G4				
			III-M	20954	121	B3-U0-G3	22621	130	B3-U0-G3	23812	137	B3-U0-G4	25003	144	B3-U0-G4				
			III-W	19456	112	B3-U0-G4	21003	121	B3-U0-G4	22109	127	B3-U0-G4	23214	134	B3-U0-G4				
			IV	20797	120	B3-U0-G3	22451	129	B3-U0-G3	23633	136	B3-U0-G3	24814	143	B3-U0-G4				
			IV-FT	18945	109	B3-U0-G4	20452	118	B3-U0-G4	21528	124	B3-U0-G4	22604	130	B3-U0-G4				
			VSQ-N	21737	125	B4-U0-G2	23466	135	B4-U0-G2	24701	142	B4-U0-G2	25936	149	B4-U0-G2				
			VSQ-M	21314	123	B5-U0-G3	23010	133	B5-U0-G3	24221	140	B5-U0-G3	25432	146	B5-U0-G3				
			VSQ-W	20806	120	B5-U0-G3	22461	129	B5-U0-G4	23643	136	B5-U0-G4	24825	143	B5-U0-G4				
			II-HS	15062	87	B1-U0-G3	16260	94	B1-U0-G3	17115	99	B1-U0-G3	17971	104	B1-U0-G3				
			II-FR-HS	15321	88	B1-U0-G2	16539	95	B1-U0-G2	17410	100	B1-U0-G2	18280	105	B1-U0-G2				
			III-M-HS	15238	88	B1-U0-G3	16450	95	B1-U0-G3	17315	100	B1-U0-G3	18181	105	B1-U0-G4				
			III-W-HS	14915	86	B1-U0-G4	16101	93	B1-U0-G4	16948	98	B1-U0-G4	17796	103	B1-U0-G4				
			IV-HS	15739	91	B1-U0-G3	16991	98	B1-U0-G3	17885	103	B1-U0-G3	18780	108	B1-U0-G3				
			IV-FT-HS	14874	86	B1-U0-G4	16058	92	B1-U0-G4	16903	97	B1-U0-G4	17748	102	B1-U0-G4				
80	875	215.9	II	23798	110	B3-U0-G3	25691	119	B3-U0-G3	27043	125	B3-U0-G4	28395	132	B3-U0-G4	N/A	N/A		
			II-FR	23957	111	B3-U0-G2	25862	120	B3-U0-G2	27223	126	B3-U0-G2	28585	132	B4-U0-G2				
			II-ML	23799	110	B4-U0-G4	25692	119	B4-U0-G4	27044	125	B4-U0-G4	28396	132	B4-U0-G4				
			III-M	24214	112	B3-U0-G4	26140	121	B3-U0-G4	27516	127	B3-U0-G4	28892	134	B3-U0-G4				
			III-W	22482	104	B3-U0-G4	24270	112	B3-U0-G4	25548	118	B3-U0-G4	26825	124	B3-U0-G4				
			IV	24032	111	B3-U0-G3	25943	120	B3-U0-G4	27309	126	B3-U0-G4	28674	133	B3-U0-G4				
			IV-FT	21892	101	B3-U0-G4	23634	109	B3-U0-G5	24877	115	B3-U0-G5	26121	121	B3-U0-G5				
			VSQ-N	25118	116	B4-U0-G2	27116	126	B5-U0-G2	28543	132	B5-U0-G2	29970	139	B5-U0-G2				
			VSQ-M	24630	114	B5-U0-G3	26589	123	B5-U0-G3	27988	130	B5-U0-G3	29387	136	B5-U0-G3				
			VSQ-W	24042	111	B5-U0-G4	25954	120	B5-U0-G4	27321	127	B5-U0-G4	28686	133	B5-U0-G4				
			II-HS	17405	81	B1-U0-G3	18789	87	B1-U0-G3	19778	92	B1-U0-G4	20766	96	B2-U0-G4				
			II-FR-HS	17704	82	B1-U0-G2	19112	89	B1-U0-G2	20118	93	B1-U0-G2	21124	98	B1-U0-G2				
			III-M-HS	17608	82	B1-U0-G4	19008	88	B1-U0-G4	20009	93	B1-U0-G4	21009	97	B1-U0-G4				
			III-W-HS	17234	80	B1-U0-G4	18605	86	B1-U0-G4	19584	91	B1-U0-G4	20564	95	B1-U0-G4				
			IV-HS	18187	84	B1-U0-G3	19634	91	B1-U0-G4	20667	96	B1-U0-G4	21701	101	B1-U0-G4				
			IV-FT-HS	17188	80	B1-U0-G4	18555	86	B1-U0-G4	19532	90	B1-U0-G4	20509	95	B1-U0-G4				
80	1050	256.4	II	27354	107	B3-U0-G4	29530	115	B4-U0-G4	31084	121	B4-U0-G4	32638	127	B4-U0-G4	N/A	N/A		
			II-FR	27536	107	B3-U0-G2	29727	116	B4-U0-G2	31291	122	B4-U0-G2	32856	128	B4-U0-G2				
			II-ML	27355	107	B4-U0-G4	29531	115	B5-U0-G5	31085	121	B5-U0-G5	32639	127	B5-U0-G5				
			III-M	27832	109	B3-U0-G4	30046	117	B3-U0-G4	31627	123	B4-U0-G4	33209	130	B4-U0-G4				
			III-W	25841	101	B3-U0-G4	27897	109	B3-U0-G4	29365	115	B3-U0-G5	30834	120	B3-U0-G5				
			IV	27622	108	B3-U0-G4	29820	116	B3-U0-G4	31389	122	B4-U0-G4	32959	129	B4-U0-G4				
			IV-FT	25163	98	B3-U0-G5	27165	106	B3-U0-G5	28595	112	B3-U0-G5	30024	117	B3-U0-G5				
			VSQ-N	28871	113	B5-U0-G2	31168	122	B5-U0-G2	32808	128	B5-U0-G2	34448	134	B5-U0-G2				
			VSQ-M	28310	110	B5-U0-G3	30561	119	B5-U0-G3	32170	125	B5-U0-G4	33779	132	B5-U0-G4				
			VSQ-W	27634	108	B5-U0-G4	29833	116	B5-U0-G4	31403	122	B5-U0-G5	32973	129	B5-U0-G5				
			II-HS	20005	78	B1-U0-G4	21596	84	B2-U0-G4	22733	89	B2-U0-G4	23870	93	B2-U0-G4				
			II-FR-HS	20349	79	B1-U0-G2	21968	86	B1-U0-G2	23124	90	B1-U0-G2	24280	95	B1-U0-G2				
			III-M-HS	20239	79	B1-U0-G4	21848	85	B1-U0-G4	22998	90	B1-U0-G4	24148	94	B1-U0-G4				
			III-W-HS	19809	77	B1-U0-G4	21385	83	B1-U0-G4	22511	88	B1-U0-G4	23636	92	B1-U0-G5				
			IV-HS	20905	82	B1-U0-G4	22568	88	B1-U0-G4	23756	93	B1-U0-G4	24943	97	B1-U0-G4				
			IV-FT-HS	19756	77	B1-U0-G4	21328	83	B1-U0-G4	22451	88	B1-U0-G5	23573	92	B1-U0-G5				

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