11000 Hours ANSI/IES LM-80-21 TEST REPORT

Client information	
Applicant:	Shenzhen Light Cone Optoelectronics o., Ltd.
Address:	No. 511, Building 17, Yifenghua Innovation Industrial Park, Xinshi Community, Dalang Street, Longhua District, Shenzhen City.
Brand:	Licone / TiCHIPS
Manufacturer:	Shenzhen Light Cone Optoelectronics o., Ltd.
Address:	No. 511, Building 17, Yifenghua Innovation Industrial Park, Xinshi Community, Dalang Street, Longhua District, Shenzhen City.
Product Type:	LED Array
Product Name:	COB
Basic Model:	Ti32528-251-1812-A2790-00
Laboratory information	
Laboratory:	BEST VERIFICATION LLC.
Address:	1st FLR, 7#BLD, Erix Industrial Park, Huihuan, Huizhou, 516106 P.R.C
Telephone:	+86-189-2746-5912
Email:	service@bestcert.cn
Accrediation:	A2LA Certificate No.7439.01
Test duration:	August 27, 2024 to March 20, 2026
Tested by: Printed name and signature	Xia Zeng Engineer
Reviewed & approved by: Printed name and signature	Smart Tseng Authorized Signature
Report #:	BTR66.02.01.0282
Date of Issue:	April 23, 2026

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Information supplied by customer	
Product:	LED Array
Basic Model:	Ti32528-251-1812-A2790-00
Sample date:	August 25, 2024
Sample method:	Provided by applicant
Sample size:	66pcs, 22pcs/Ts
Sample ID:	L1-L66
The condition of the item:	Normal
Nominal TMP Temperature(s):	55°C, 85°C, 105°C
Air temperature(s):	higher than the nominal test TMP Temperature minus 5 °C
Description of air movement:	Air flow: 300 CFM
Relative humidity level:	50% within a tolerance of ±5%, throughout the maintenance test.
Drive level for DUTs:	DC constant current
Drive Voltage(V):	N/A
Drive Current(mA):	4800
Operating Cycle:	Continue
Disclaimer: the information is supplied by the customer and can affect the validity of results.	

Test method:	
ANSI/IES LM-80-21:	APPROVED METHOD: MEASURING MAINTENANCE OF LIGHT OUTPUT CHARACTERISTICS OF SOLID-STATE LIGHT SOURCES
Deviations:	N/A

Summary of result:

Data Set	TMP Temperature ℃	Air Temperature (Ta)℃	Drive Current(mA)	Average Lumen Maintenance at 11,000 hours	Average Chromaticity Shift (Δu'v') at 11,000 hours	Reported TM-21 L70 Lifetime (Lumen Maintenane)	Reported TM-21 L80 Lifetime (Lumen Maintenane)	Reported TM-21 L90 Lifetime (Lumen Maintenane)	/	/
1	55±1.6	50.4~55	4800	98.64%	0.0021	>66000H	>66000H	>66000H	/	/
2	85±1.6	80.4~85	4800	98.19%	0.0024	>66000H	>66000H	>66000H	/	/
3	105±1.6	100.4~105	4800	97.39%	0.0031	>66000H	>66000H	63000H	/	/

Disclaimer: the observations and test results in this report are relevant only to the sample(s) as received and items tested.

Data Set 1: 55°C; 4800mA	
DUT Identification (Model Number):	Ti32528-251-1812-A2790-00
TMP Temperature:	25.7°C
Air Temperature:	24.9°C
Failures Observed:	None

Initial Data

Sample No.	Ref. Voltage (V)	Forward Current (mA)	Power (W)	Luminous Flux (Lumens)	CCT (K)	x (CIE 1931)	y (CIE 1931)	u' (CIE 1976)	v' (CIE 1976)	CRI (Ra)
L1	52.05	4800	249.83	14839	2812	0.4478	0.4024	0.2583	0.5224	90.3
L2	52.14	4800	250.26	14954	2826	0.4465	0.4016	0.2578	0.5219	90.2
L3	52.07	4800	249.93	14908	2773	0.4541	0.4093	0.2593	0.5260	91.2
L4	52.35	4800	251.27	14982	2779	0.4534	0.4088	0.2591	0.5257	91.1
L5	52.33	4800	251.17	14892	2780	0.4533	0.4087	0.2591	0.5256	91.1
L6	52.45	4800	251.75	14947	2781	0.4531	0.4086	0.2590	0.5256	91.1
L7	52.14	4800	250.26	14857	2819	0.4470	0.4018	0.2581	0.5220	90.2
L8	52.45	4800	251.75	14884	2782	0.4530	0.4085	0.2590	0.5255	91.1
L9	52.29	4800	250.98	14903	2786	0.4527	0.4083	0.2589	0.5254	91.0
L10	51.79	4800	248.58	14932	2835	0.4483	0.4062	0.2570	0.5239	90.5
L11	52.23	4800	250.70	14878	2787	0.4525	0.4082	0.2588	0.5253	91.0
L12	52.32	4800	251.13	14870	2790	0.4522	0.4080	0.2587	0.5252	91.0
L13	52.31	4800	251.07	14976	2777	0.4536	0.4090	0.2592	0.5258	91.1
L14	52.06	4800	249.88	14988	2832	0.4458	0.4011	0.2576	0.5216	90.1
L15	52.13	4800	250.22	15000	2791	0.4521	0.4079	0.2587	0.5251	91.0
L16	51.91	4800	249.16	14875	2793	0.4518	0.4077	0.2586	0.5250	91.0
L17	52.21	4800	250.60	14899	2824	0.4494	0.4070	0.2573	0.5244	90.5
L18	51.77	4800	248.49	14913	2774	0.4539	0.4092	0.2593	0.5259	91.2
L19	52.45	4800	251.75	14966	2821	0.4498	0.4073	0.2574	0.5246	90.5
L20	52.25	4800	250.79	14958	2795	0.4516	0.4075	0.2585	0.5249	91.0
L21	52.17	4800	250.41	14937	2765	0.4548	0.4096	0.2597	0.5262	91.3
L22	52.18	4800	250.46	14942	2803	0.4508	0.4070	0.2583	0.5246	90.9
AVE	52.18	4800	250.48	14923	2797	0.4513	0.4070	0.2585	0.5247	90.8
MIN	51.77	4800	248.49	14839	2765	0.4458	0.4011	0.2570	0.5216	90.1
MAX	52.45	4800	251.75	15000	2835	0.4548	0.4096	0.2597	0.5262	91.3
MEDIAN	52.19	4800	250.53	14923	2791	0.4522	0.4080	0.2587	0.5252	91.0
STDEV	0.191	0	0.918	46	21.28	0.0027	0.0027	0.0007	0.0014	0.38

DUT Identification (Model Number):	Ti32528-251-1812-A2790-00
TMP Temperature:	55°C ±1.6°C
Air Temperature:	50.4°C ~55°C
Drive Current:	4800mA
Measure Current:	4800mA
Failures Observed:	None

Lumen Maintenance										
Sample No.	0H	1000H	2000H	3000H	4000H	5000H	6000H	7000H	8000H	9000H
L1	100.00%	99.88%	99.73%	99.59%	99.42%	99.28%	99.15%	99.07%	98.97%	98.85%
L2	100.00%	99.92%	99.78%	99.65%	99.45%	99.34%	99.21%	99.13%	99.01%	98.88%
L3	100.00%	99.87%	99.74%	99.59%	99.48%	99.28%	99.16%	99.09%	98.93%	98.83%
L4	100.00%	99.93%	99.78%	99.63%	99.47%	99.35%	99.20%	99.13%	99.01%	98.90%
L5	100.00%	99.85%	99.72%	99.57%	99.40%	99.30%	99.16%	99.08%	98.94%	98.82%
L6	100.00%	99.94%	99.78%	99.61%	99.46%	99.35%	99.19%	99.13%	99.01%	98.89%
L7	100.00%	99.96%	99.72%	99.60%	99.41%	99.31%	99.14%	99.05%	98.97%	98.85%
L8	100.00%	99.91%	99.79%	99.65%	99.44%	99.34%	99.20%	99.12%	99.00%	98.87%
L9	100.00%	99.88%	99.73%	99.59%	99.40%	99.30%	99.18%	99.09%	98.95%	98.82%
L10	100.00%	99.98%	99.82%	99.63%	99.49%	99.32%	99.19%	99.11%	98.99%	98.88%
L11	100.00%	99.94%	99.80%	99.62%	99.46%	99.31%	99.22%	99.10%	99.01%	98.89%
L12	100.00%	99.90%	99.71%	99.60%	99.40%	99.31%	99.16%	99.05%	98.93%	98.83%
L13	100.00%	99.83%	99.74%	99.57%	99.43%	99.29%	99.18%	99.06%	98.96%	98.84%
L14	100.00%	99.93%	99.76%	99.64%	99.47%	99.33%	99.19%	99.13%	99.00%	98.90%
L15	100.00%	99.89%	99.70%	99.57%	99.42%	99.28%	99.16%	99.07%	98.95%	98.86%
L16	100.00%	99.89%	99.72%	99.60%	99.41%	99.28%	99.15%	99.06%	98.97%	98.84%
L17	100.00%	99.94%	99.77%	99.65%	99.49%	99.35%	99.18%	99.13%	98.98%	98.90%
L18	100.00%	99.92%	99.79%	99.64%	99.44%	99.32%	99.20%	99.09%	98.97%	98.87%
L19	100.00%	99.90%	99.73%	99.60%	99.42%	99.29%	99.18%	99.06%	98.94%	98.85%
L20	100.00%	99.88%	99.74%	99.57%	99.43%	99.27%	99.14%	99.07%	98.93%	98.82%
L21	100.00%	99.95%	99.78%	99.62%	99.47%	99.34%	99.19%	99.11%	98.97%	98.89%
L22	100.00%	99.87%	99.69%	99.57%	99.43%	99.27%	99.17%	99.06%	98.95%	98.85%
AVE	100.00%	99.91%	99.75%	99.61%	99.44%	99.31%	99.18%	99.09%	98.97%	98.86%
MIN	100.00%	99.83%	99.69%	99.57%	99.40%	99.27%	99.14%	99.05%	98.93%	98.82%
MAX	100.00%	99.98%	99.82%	99.65%	99.49%	99.35%	99.22%	99.13%	99.01%	98.90%
MEDIAN	100.00%	99.91%	99.74%	99.60%	99.44%	99.31%	99.18%	99.09%	98.97%	98.86%
STDEV	0.00%	0.04%	0.04%	0.03%	0.03%	0.03%	0.02%	0.03%	0.03%	0.03%

Lumen Maintenance										
Sample No.	10000H	11000H	/	/	/	/	/	/	/	/
L1	98.71%	98.62%	/	/	/	/	/	/	/	/
L2	98.77%	98.67%	/	/	/	/	/	/	/	/
L3	98.70%	98.63%	/	/	/	/	/	/	/	/
L4	98.74%	98.68%	/	/	/	/	/	/	/	/
L5	98.70%	98.62%	/	/	/	/	/	/	/	/
L6	98.77%	98.65%	/	/	/	/	/	/	/	/
L7	98.72%	98.62%	/	/	/	/	/	/	/	/
L8	98.76%	98.69%	/	/	/	/	/	/	/	/
L9	98.73%	98.62%	/	/	/	/	/	/	/	/
L10	98.77%	98.66%	/	/	/	/	/	/	/	/
L11	98.74%	98.67%	/	/	/	/	/	/	/	/
L12	98.72%	98.62%	/	/	/	/	/	/	/	/
L13	98.72%	98.61%	/	/	/	/	/	/	/	/
L14	98.77%	98.65%	/	/	/	/	/	/	/	/
L15	98.72%	98.64%	/	/	/	/	/	/	/	/
L16	98.74%	98.62%	/	/	/	/	/	/	/	/
L17	98.78%	98.65%	/	/	/	/	/	/	/	/
L18	98.76%	98.69%	/	/	/	/	/	/	/	/
L19	98.73%	98.62%	/	/	/	/	/	/	/	/
L20	98.74%	98.63%	/	/	/	/	/	/	/	/
L21	98.77%	98.66%	/	/	/	/	/	/	/	/
L22	98.73%	98.64%	/	/	/	/	/	/	/	/
AVE	98.74%	98.64%	/	/	/	/	/	/	/	/
MIN	98.70%	98.61%	/	/	/	/	/	/	/	/
MAX	98.78%	98.69%	/	/	/	/	/	/	/	/
MEDIAN	98.74%	98.64%	/	/	/	/	/	/	/	/
STDEV	0.02%	0.02%	/	/	/	/	/	/	/	/

DUT Identification (Model Number):	Ti32528-251-1812-A2790-00
TMP Temperature:	55°C ±1.6°C
Air Temperature:	50.4°C ~55°C
Drive Current:	4800mA
Measure Current:	4800mA
Failures Observed:	None

Δu'v'										
Sample No.	0H	1000H	2000H	3000H	4000H	5000H	6000H	7000H	8000H	9000H
L1	0.0000	0.0003	0.0005	0.0007	0.0010	0.0011	0.0013	0.0014	0.0015	0.0017
L2	0.0000	0.0002	0.0003	0.0005	0.0009	0.0010	0.0012	0.0013	0.0014	0.0016
L3	0.0000	0.0003	0.0004	0.0006	0.0010	0.0011	0.0014	0.0015	0.0016	0.0018
L4	0.0000	0.0001	0.0002	0.0005	0.0008	0.0009	0.0012	0.0013	0.0015	0.0017
L5	0.0000	0.0003	0.0005	0.0007	0.0009	0.0011	0.0013	0.0014	0.0016	0.0019
L6	0.0000	0.0002	0.0004	0.0006	0.0008	0.0010	0.0011	0.0012	0.0014	0.0017
L7	0.0000	0.0001	0.0002	0.0004	0.0007	0.0009	0.0010	0.0011	0.0012	0.0016
L8	0.0000	0.0002	0.0003	0.0005	0.0009	0.0010	0.0013	0.0014	0.0016	0.0018
L9	0.0000	0.0003	0.0005	0.0007	0.0010	0.0011	0.0014	0.0015	0.0015	0.0017
L10	0.0000	0.0001	0.0003	0.0005	0.0009	0.0010	0.0012	0.0013	0.0014	0.0016
L11	0.0000	0.0002	0.0004	0.0006	0.0010	0.0011	0.0013	0.0014	0.0016	0.0019
L12	0.0000	0.0003	0.0005	0.0007	0.0011	0.0012	0.0015	0.0016	0.0018	0.0020
L13	0.0000	0.0002	0.0003	0.0005	0.0009	0.0010	0.0012	0.0013	0.0015	0.0019
L14	0.0000	0.0003	0.0004	0.0006	0.0010	0.0011	0.0013	0.0014	0.0016	0.0020
L15	0.0000	0.0002	0.0003	0.0005	0.0007	0.0009	0.0011	0.0012	0.0014	0.0017
L16	0.0000	0.0001	0.0002	0.0004	0.0006	0.0008	0.0010	0.0011	0.0012	0.0016
L17	0.0000	0.0002	0.0004	0.0006	0.0010	0.0011	0.0013	0.0014	0.0015	0.0019
L18	0.0000	0.0001	0.0003	0.0005	0.0009	0.0010	0.0012	0.0013	0.0014	0.0017
L19	0.0000	0.0003	0.0005	0.0007	0.0010	0.0011	0.0014	0.0015	0.0016	0.0018
L20	0.0000	0.0001	0.0002	0.0004	0.0008	0.0009	0.0011	0.0012	0.0014	0.0017
L21	0.0000	0.0002	0.0003	0.0005	0.0009	0.0010	0.0013	0.0014	0.0016	0.0019
L22	0.0000	0.0001	0.0002	0.0004	0.0006	0.0007	0.0010	0.0011	0.0013	0.0016
AVE	0.0000	0.0002	0.0003	0.0006	0.0009	0.0010	0.0012	0.0013	0.0015	0.0018
MIN	0.0000	0.0001	0.0002	0.0004	0.0006	0.0007	0.0010	0.0011	0.0012	0.0016
MAX	0.0000	0.0003	0.0005	0.0007	0.0011	0.0012	0.0015	0.0016	0.0018	0.0020
MEDIAN	0.0000	0.0002	0.0003	0.0005	0.0009	0.0010	0.0013	0.0014	0.0015	0.0017
STDEV	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Δu'v'										
Sample No.	10000H	11000H	/	/	/	/	/	/	/	/
L1	0.0020	0.0020	/	/	/	/	/	/	/	/
L2	0.0019	0.0019	/	/	/	/	/	/	/	/
L3	0.0021	0.0023	/	/	/	/	/	/	/	/
L4	0.0020	0.0022	/	/	/	/	/	/	/	/
L5	0.0021	0.0021	/	/	/	/	/	/	/	/
L6	0.0020	0.0020	/	/	/	/	/	/	/	/
L7	0.0019	0.0019	/	/	/	/	/	/	/	/
L8	0.0019	0.0021	/	/	/	/	/	/	/	/
L9	0.0019	0.0021	/	/	/	/	/	/	/	/
L10	0.0018	0.0020	/	/	/	/	/	/	/	/
L11	0.0022	0.0022	/	/	/	/	/	/	/	/
L12	0.0023	0.0024	/	/	/	/	/	/	/	/
L13	0.0022	0.0022	/	/	/	/	/	/	/	/
L14	0.0021	0.0022	/	/	/	/	/	/	/	/
L15	0.0020	0.0020	/	/	/	/	/	/	/	/
L16	0.0019	0.0019	/	/	/	/	/	/	/	/
L17	0.0021	0.0022	/	/	/	/	/	/	/	/
L18	0.0019	0.0021	/	/	/	/	/	/	/	/
L19	0.0021	0.0022	/	/	/	/	/	/	/	/
L20	0.0019	0.0021	/	/	/	/	/	/	/	/
L21	0.0021	0.0022	/	/	/	/	/	/	/	/
L22	0.0018	0.0019	/	/	/	/	/	/	/	/
AVE	0.0020	0.0021	/	/	/	/	/	/	/	/
MIN	0.0018	0.0019	/	/	/	/	/	/	/	/
MAX	0.0023	0.0024	/	/	/	/	/	/	/	/
MEDIAN	0.0020	0.0021	/	/	/	/	/	/	/	/
STDEV	0.0001	0.0001	/	/	/	/	/	/	/	/

DUT Identification (Model Number):	Ti32528-251-1812-A2790-00
TMP Temperature:	55°C ±1.6°C
Air Temperature:	50.4°C ~55°C
Drive Current:	4800mA
Measure Current:	4800mA
Failures Observed:	None

Voltage(V)										
Sample No.	0H	1000H	2000H	3000H	4000H	5000H	6000H	7000H	8000H	9000H
L1	52.05	51.67	51.25	51.13	50.92	50.96	51.14	51.15	51.17	51.24
L2	52.14	51.64	51.41	51.21	51.14	51.23	51.29	51.07	51.18	51.16
L3	52.07	51.38	51.36	51.31	51.13	50.94	51.09	51.09	51.00	50.94
L4	52.35	51.93	51.74	51.2	51.17	51.54	51.44	51.30	51.23	51.52
L5	52.33	51.70	51.74	51.33	51.42	51.16	51.07	51.09	51.20	51.56
L6	52.45	52.05	51.84	51.39	51.32	51.43	51.37	51.33	51.40	51.33
L7	52.14	51.57	51.30	51.36	51.12	51.05	51.16	51.19	51.30	50.93
L8	52.45	52.14	51.72	51.31	51.53	51.43	51.52	51.20	51.50	51.31
L9	52.29	51.93	51.36	51.22	51.28	51.31	51.25	51.46	51.25	51.46
L10	51.79	51.13	51.01	51.03	50.64	50.99	50.89	50.93	50.53	50.64
L11	52.23	51.91	51.30	51.47	51.11	51.28	51.25	51.09	51.39	51.25
L12	52.32	51.85	51.61	51.31	51.11	51.33	51.20	51.50	51.38	51.36
L13	52.31	51.71	51.46	51.4	51.29	51.13	51.08	51.03	51.27	51.28
L14	52.06	51.65	51.37	51.11	50.93	50.88	51.05	51.20	50.82	51.38
L15	52.13	51.53	51.55	51.26	50.88	51.13	51.05	51.23	51.29	51.30
L16	51.91	51.58	51.01	50.94	51.01	51.04	50.84	50.99	50.82	51.03
L17	52.21	51.74	51.25	51.37	51.10	51.19	51.24	51.21	51.18	51.32
L18	51.77	51.41	50.85	50.93	50.64	50.88	50.83	50.82	50.72	50.72
L19	52.45	51.99	51.73	51.52	51.36	51.35	51.30	51.32	51.51	51.68
L20	52.25	51.68	51.48	51.28	51.13	51.14	51.07	51.22	51.19	51.26
L21	52.17	51.80	51.53	51.04	51.24	51.27	51.15	51.17	51.12	51.15
L22	52.18	51.83	51.48	51.2	50.96	51.22	51.17	51.27	51.30	50.95
AVE	52.18	51.72	51.43	51.24	51.11	51.18	51.16	51.18	51.17	51.22
MIN	51.77	51.13	50.85	50.93	50.64	50.88	50.83	50.82	50.53	50.64
MAX	52.45	52.14	51.84	51.52	51.53	51.54	51.52	51.50	51.51	51.68
MEDIAN	52.19	51.71	51.44	51.27	51.13	51.18	51.16	51.20	51.22	51.27
STDEV	0.191	0.236	0.258	0.160	0.225	0.184	0.176	0.160	0.251	0.261

Voltage(V)										
Sample No.	10000H	11000H	/	/	/	/	/	/	/	/
L1	51.21	50.98	/	/	/	/	/	/	/	/
L2	51.08	51.28	/	/	/	/	/	/	/	/
L3	51.19	51.20	/	/	/	/	/	/	/	/
L4	51.14	51.58	/	/	/	/	/	/	/	/
L5	51.52	51.50	/	/	/	/	/	/	/	/
L6	51.39	51.51	/	/	/	/	/	/	/	/
L7	51.32	51.28	/	/	/	/	/	/	/	/
L8	51.40	51.33	/	/	/	/	/	/	/	/
L9	51.15	51.06	/	/	/	/	/	/	/	/
L10	50.55	50.93	/	/	/	/	/	/	/	/
L11	51.43	51.29	/	/	/	/	/	/	/	/
L12	51.38	51.16	/	/	/	/	/	/	/	/
L13	51.14	51.57	/	/	/	/	/	/	/	/
L14	51.15	51.38	/	/	/	/	/	/	/	/
L15	51.06	51.01	/	/	/	/	/	/	/	/
L16	51.07	51.16	/	/	/	/	/	/	/	/
L17	51.26	51.14	/	/	/	/	/	/	/	/
L18	50.80	50.73	/	/	/	/	/	/	/	/
L19	51.61	51.43	/	/	/	/	/	/	/	/
L20	51.47	51.46	/	/	/	/	/	/	/	/
L21	51.20	51.19	/	/	/	/	/	/	/	/
L22	50.99	51.02	/	/	/	/	/	/	/	/
AVE	51.21	51.24	/	/	/	/	/	/	/	/
MIN	50.55	50.73	/	/	/	/	/	/	/	/
MAX	51.61	51.58	/	/	/	/	/	/	/	/
MEDIAN	51.20	51.24	/	/	/	/	/	/	/	/
STDEV	0.240	0.225	/	/	/	/	/	/	/	/

Data Set 2: 85°C; 4800mA										
DUT Identification (Model Number):	Ti32528-251-1812-A2790-00									
TMP Temperature:	25.7°C									
Air Temperature:	24.9°C									
Failures Observed:	None									
Initial Data										
Sample No.	Ref. Voltage (V)	Forward Current (mA)	Power (W)	Luminous Flux (Lumens)	CCT (K)	x (CIE 1931)	y (CIE 1931)	u' (CIE 1976)	v' (CIE 1976)	CRI (Ra)
L23	52.22	4800	250.65	14896	2799	0.4512	0.4073	0.2584	0.5248	90.7
L24	52.14	4800	250.26	14905	2805	0.4506	0.4068	0.2582	0.5245	90.7
L25	51.93	4800	249.26	14958	2775	0.4538	0.4091	0.2593	0.5259	91.0
L26	51.94	4800	249.30	14858	2810	0.4500	0.4064	0.2580	0.5242	90.6
L27	51.94	4800	249.30	14982	2822	0.4489	0.4058	0.2576	0.5238	90.6
L28	52.34	4800	251.22	14933	2828	0.4482	0.4052	0.2574	0.5235	90.6
L29	52.22	4800	250.65	14852	2767	0.4554	0.4110	0.2594	0.5268	90.7
L30	52.24	4800	250.74	14932	2771	0.4549	0.4107	0.2593	0.5266	90.7
L31	51.93	4800	249.26	14805	2831	0.4487	0.4065	0.2571	0.5241	90.2
L32	52.20	4800	250.55	14942	2776	0.4545	0.4106	0.2591	0.5265	90.7
L33	52.13	4800	250.22	14899	2780	0.4541	0.4103	0.2589	0.5264	90.6
L34	52.07	4800	249.93	14952	2827	0.4491	0.4068	0.2572	0.5243	90.3
L35	52.08	4800	249.98	14907	2783	0.4538	0.4100	0.2588	0.5262	90.6
L36	51.97	4800	249.45	14869	2785	0.4535	0.4098	0.2587	0.5261	90.5
L37	51.90	4800	249.11	14708	2788	0.4532	0.4096	0.2586	0.5260	90.5
L38	52.16	4800	250.36	14995	2793	0.4527	0.4092	0.2585	0.5257	90.4
L39	52.15	4800	250.31	14915	2797	0.4522	0.4089	0.2583	0.5255	90.4
L40	52.19	4800	250.50	14923	2799	0.4520	0.4087	0.2583	0.5255	90.4
L41	51.98	4800	249.50	14877	2802	0.4517	0.4085	0.2582	0.5253	90.4
L42	51.87	4800	248.97	14953	2804	0.4514	0.4083	0.2581	0.5252	90.4
L43	51.78	4800	248.54	14900	2809	0.4509	0.4079	0.2579	0.5250	90.3
L44	51.83	4800	248.78	14910	2813	0.4505	0.4076	0.2578	0.5248	90.3
AVE	52.05	4800	249.86	14903	2798	0.4519	0.4084	0.2583	0.5253	90.5
MIN	51.78	4800	248.54	14708	2767	0.4482	0.4052	0.2571	0.5235	90.2
MAX	52.34	4800	251.22	14995	2831	0.4554	0.4110	0.2594	0.5268	91.0
MEDIAN	52.07	4800	249.95	14909	2799	0.4519	0.4086	0.2583	0.5254	90.6
STDEV	0.154	0	0.739	62	18.95	0.0021	0.0017	0.0007	0.0010	0.19

DUT Identification (Model Number):	Ti32528-251-1812-A2790-00
TMP Temperature:	85°C ±1.6°C
Air Temperature:	80.4°C ~85°C
Drive Current:	4800mA
Measure Current:	4800mA
Failures Observed:	None

Lumen Maintenance										
Sample No.	0H	1000H	2000H	3000H	4000H	5000H	6000H	7000H	8000H	9000H
L23	100.00%	99.71%	99.51%	99.30%	99.10%	98.95%	98.77%	98.67%	98.54%	98.43%
L24	100.00%	99.75%	99.53%	99.32%	99.14%	98.99%	98.85%	98.68%	98.56%	98.44%
L25	100.00%	99.70%	99.49%	99.29%	99.10%	98.97%	98.80%	98.66%	98.54%	98.39%
L26	100.00%	99.76%	99.53%	99.34%	99.17%	98.97%	98.83%	98.68%	98.57%	98.45%
L27	100.00%	99.69%	99.51%	99.28%	99.09%	98.96%	98.79%	98.67%	98.53%	98.40%
L28	100.00%	99.74%	99.53%	99.32%	99.20%	98.97%	98.84%	98.70%	98.56%	98.43%
L29	100.00%	99.68%	99.51%	99.31%	99.10%	98.96%	98.81%	98.67%	98.51%	98.39%
L30	100.00%	99.72%	99.52%	99.35%	99.19%	98.99%	98.82%	98.71%	98.58%	98.46%
L31	100.00%	99.68%	99.50%	99.28%	99.11%	98.95%	98.81%	98.64%	98.50%	98.39%
L32	100.00%	99.75%	99.54%	99.37%	99.17%	98.98%	98.81%	98.69%	98.58%	98.44%
L33	100.00%	99.73%	99.51%	99.34%	99.18%	99.01%	98.84%	98.69%	98.57%	98.47%
L34	100.00%	99.71%	99.49%	99.25%	99.04%	98.97%	98.78%	98.65%	98.53%	98.39%
L35	100.00%	99.72%	99.50%	99.27%	99.10%	98.93%	98.79%	98.65%	98.50%	98.41%
L36	100.00%	99.76%	99.53%	99.35%	99.21%	98.98%	98.84%	98.69%	98.58%	98.45%
L37	100.00%	99.70%	99.48%	99.29%	99.10%	98.96%	98.80%	98.65%	98.51%	98.43%
L38	100.00%	99.70%	99.50%	99.29%	99.12%	98.95%	98.81%	98.63%	98.51%	98.42%
L39	100.00%	99.76%	99.51%	99.34%	99.17%	98.99%	98.84%	98.68%	98.58%	98.43%
L40	100.00%	99.73%	99.53%	99.33%	99.16%	98.98%	98.81%	98.71%	98.55%	98.43%
L41	100.00%	99.68%	99.47%	99.24%	99.07%	98.97%	98.80%	98.64%	98.53%	98.40%
L42	100.00%	99.69%	99.51%	99.30%	99.12%	98.94%	98.79%	98.64%	98.50%	98.40%
L43	100.00%	99.74%	99.53%	99.35%	99.15%	98.99%	98.85%	98.68%	98.57%	98.47%
L44	100.00%	99.70%	99.48%	99.26%	99.08%	98.95%	98.77%	98.63%	98.53%	98.39%
AVE	100.00%	99.72%	99.51%	99.31%	99.13%	98.97%	98.81%	98.67%	98.54%	98.42%
MIN	100.00%	99.68%	99.47%	99.24%	99.04%	98.93%	98.77%	98.63%	98.50%	98.39%
MAX	100.00%	99.76%	99.54%	99.37%	99.21%	99.01%	98.85%	98.71%	98.58%	98.47%
MEDIAN	100.00%	99.72%	99.51%	99.31%	99.12%	98.97%	98.81%	98.67%	98.54%	98.43%
STDEV	0.00%	0.03%	0.02%	0.04%	0.05%	0.02%	0.02%	0.02%	0.03%	0.03%

Lumen Maintenance										
Sample No.	10000H	11000H	/	/	/	/	/	/	/	/
L23	98.28%	98.16%	/	/	/	/	/	/	/	/
L24	98.32%	98.23%	/	/	/	/	/	/	/	/
L25	98.30%	98.18%	/	/	/	/	/	/	/	/
L26	98.33%	98.23%	/	/	/	/	/	/	/	/
L27	98.28%	98.15%	/	/	/	/	/	/	/	/
L28	98.35%	98.22%	/	/	/	/	/	/	/	/
L29	98.28%	98.15%	/	/	/	/	/	/	/	/
L30	98.34%	98.22%	/	/	/	/	/	/	/	/
L31	98.28%	98.17%	/	/	/	/	/	/	/	/
L32	98.33%	98.20%	/	/	/	/	/	/	/	/
L33	98.35%	98.20%	/	/	/	/	/	/	/	/
L34	98.29%	98.16%	/	/	/	/	/	/	/	/
L35	98.30%	98.19%	/	/	/	/	/	/	/	/
L36	98.33%	98.23%	/	/	/	/	/	/	/	/
L37	98.29%	98.18%	/	/	/	/	/	/	/	/
L38	98.28%	98.18%	/	/	/	/	/	/	/	/
L39	98.36%	98.21%	/	/	/	/	/	/	/	/
L40	98.35%	98.20%	/	/	/	/	/	/	/	/
L41	98.32%	98.16%	/	/	/	/	/	/	/	/
L42	98.28%	98.15%	/	/	/	/	/	/	/	/
L43	98.35%	98.21%	/	/	/	/	/	/	/	/
L44	98.31%	98.17%	/	/	/	/	/	/	/	/
AVE	98.31%	98.19%	/	/	/	/	/	/	/	/
MIN	98.28%	98.15%	/	/	/	/	/	/	/	/
MAX	98.36%	98.23%	/	/	/	/	/	/	/	/
MEDIAN	98.32%	98.19%	/	/	/	/	/	/	/	/
STDEV	0.03%	0.03%	/	/	/	/	/	/	/	/

DUT Identification (Model Number):	Ti32528-251-1812-A2790-00
TMP Temperature:	85°C ±1.6°C
Air Temperature:	80.4°C ~85°C
Drive Current:	4800mA
Measure Current:	4800mA
Failures Observed:	None

Δu'v'										
Sample No.	0H	1000H	2000H	3000H	4000H	5000H	6000H	7000H	8000H	9000H
L23	0.0000	0.0004	0.0005	0.0007	0.0011	0.0015	0.0017	0.0019	0.0021	0.0023
L24	0.0000	0.0005	0.0006	0.0008	0.0012	0.0016	0.0018	0.0020	0.0022	0.0024
L25	0.0000	0.0003	0.0005	0.0006	0.0009	0.0012	0.0014	0.0016	0.0019	0.0021
L26	0.0000	0.0004	0.0006	0.0008	0.0011	0.0014	0.0016	0.0018	0.0020	0.0022
L27	0.0000	0.0002	0.0004	0.0005	0.0008	0.0012	0.0015	0.0016	0.0018	0.0020
L28	0.0000	0.0005	0.0006	0.0007	0.0012	0.0015	0.0017	0.0018	0.0020	0.0022
L29	0.0000	0.0003	0.0005	0.0006	0.0010	0.0013	0.0014	0.0016	0.0019	0.0021
L30	0.0000	0.0004	0.0006	0.0008	0.0011	0.0014	0.0016	0.0018	0.0020	0.0022
L31	0.0000	0.0002	0.0004	0.0006	0.0009	0.0013	0.0014	0.0017	0.0019	0.0021
L32	0.0000	0.0005	0.0006	0.0007	0.0010	0.0014	0.0016	0.0018	0.0020	0.0022
L33	0.0000	0.0003	0.0005	0.0006	0.0009	0.0013	0.0014	0.0016	0.0018	0.0020
L34	0.0000	0.0004	0.0006	0.0008	0.0011	0.0014	0.0016	0.0017	0.0019	0.0021
L35	0.0000	0.0005	0.0007	0.0009	0.0013	0.0016	0.0018	0.0019	0.0021	0.0023
L36	0.0000	0.0003	0.0004	0.0006	0.0009	0.0013	0.0014	0.0016	0.0018	0.0020
L37	0.0000	0.0004	0.0005	0.0007	0.0010	0.0014	0.0015	0.0017	0.0019	0.0021
L38	0.0000	0.0005	0.0007	0.0008	0.0011	0.0015	0.0018	0.0019	0.0021	0.0023
L39	0.0000	0.0002	0.0004	0.0006	0.0009	0.0013	0.0016	0.0017	0.0019	0.0021
L40	0.0000	0.0004	0.0006	0.0007	0.0012	0.0015	0.0017	0.0019	0.0021	0.0023
L41	0.0000	0.0003	0.0005	0.0006	0.0011	0.0014	0.0016	0.0017	0.0019	0.0021
L42	0.0000	0.0005	0.0006	0.0007	0.0012	0.0015	0.0017	0.0019	0.0021	0.0023
L43	0.0000	0.0002	0.0004	0.0006	0.0009	0.0013	0.0015	0.0017	0.0019	0.0021
L44	0.0000	0.0004	0.0006	0.0008	0.0013	0.0016	0.0018	0.0019	0.0021	0.0023
AVE	0.0000	0.0004	0.0005	0.0007	0.0011	0.0014	0.0016	0.0018	0.0020	0.0022
MIN	0.0000	0.0002	0.0004	0.0005	0.0008	0.0012	0.0014	0.0016	0.0018	0.0020
MAX	0.0000	0.0005	0.0007	0.0009	0.0013	0.0016	0.0018	0.0020	0.0022	0.0024
MEDIAN	0.0000	0.0004	0.0006	0.0007	0.0011	0.0014	0.0016	0.0018	0.0020	0.0022
STDEV	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Δu'v'										
Sample No.	10000H	11000H	/	/	/	/	/	/	/	/
L23	0.0024	0.0025	/	/	/	/	/	/	/	/
L24	0.0025	0.0027	/	/	/	/	/	/	/	/
L25	0.0023	0.0024	/	/	/	/	/	/	/	/
L26	0.0024	0.0025	/	/	/	/	/	/	/	/
L27	0.0021	0.0023	/	/	/	/	/	/	/	/
L28	0.0023	0.0025	/	/	/	/	/	/	/	/
L29	0.0022	0.0024	/	/	/	/	/	/	/	/
L30	0.0023	0.0025	/	/	/	/	/	/	/	/
L31	0.0022	0.0023	/	/	/	/	/	/	/	/
L32	0.0023	0.0024	/	/	/	/	/	/	/	/
L33	0.0021	0.0022	/	/	/	/	/	/	/	/
L34	0.0022	0.0024	/	/	/	/	/	/	/	/
L35	0.0024	0.0025	/	/	/	/	/	/	/	/
L36	0.0022	0.0024	/	/	/	/	/	/	/	/
L37	0.0023	0.0025	/	/	/	/	/	/	/	/
L38	0.0024	0.0026	/	/	/	/	/	/	/	/
L39	0.0022	0.0024	/	/	/	/	/	/	/	/
L40	0.0024	0.0025	/	/	/	/	/	/	/	/
L41	0.0022	0.0024	/	/	/	/	/	/	/	/
L42	0.0024	0.0025	/	/	/	/	/	/	/	/
L43	0.0022	0.0024	/	/	/	/	/	/	/	/
L44	0.0024	0.0025	/	/	/	/	/	/	/	/
AVE	0.0023	0.0024	/	/	/	/	/	/	/	/
MIN	0.0021	0.0022	/	/	/	/	/	/	/	/
MAX	0.0025	0.0027	/	/	/	/	/	/	/	/
MEDIAN	0.0023	0.0025	/	/	/	/	/	/	/	/
STDEV	0.0001	0.0001	/	/	/	/	/	/	/	/

DUT Identification (Model Number):	Ti32528-251-1812-A2790-00
TMP Temperature:	85°C ±1.6°C
Air Temperature:	80.4°C ~85°C
Drive Current:	4800mA
Measure Current:	4800mA
Failures Observed:	None

Voltage(V)										
Sample No.	0H	1000H	2000H	3000H	4000H	5000H	6000H	7000H	8000H	9000H
L23	52.22	51.71	51.33	51.06	50.92	50.96	50.96	51.00	50.94	50.96
L24	52.14	51.80	51.42	51.14	50.93	51.02	51.02	51.12	51.22	51.26
L25	51.93	51.53	51.34	51.05	50.80	51.04	50.97	50.96	50.95	50.92
L26	51.94	51.44	51.09	50.82	50.58	50.76	50.71	50.85	50.94	51.00
L27	51.94	51.24	50.99	50.76	50.51	50.57	50.65	50.79	51.02	51.02
L28	52.34	51.93	51.60	51.36	51.37	51.42	51.47	51.41	51.48	51.49
L29	52.22	51.74	51.41	51.21	50.96	51.20	51.20	51.29	51.29	51.27
L30	52.24	51.77	51.45	51.18	51.10	51.23	51.25	51.35	51.30	51.32
L31	51.93	51.34	51.01	50.7	50.71	50.52	50.51	50.56	50.59	50.68
L32	52.20	51.72	51.32	51.02	50.98	51.06	51.28	51.34	51.34	51.32
L33	52.13	51.67	51.26	50.96	51.01	50.97	50.99	51.05	51.23	51.13
L34	52.07	51.63	51.49	51.33	51.03	51.03	50.89	50.92	51.07	51.10
L35	52.08	51.55	51.16	50.87	50.89	51.05	51.07	51.06	51.06	51.01
L36	51.97	51.45	51.09	50.8	50.54	50.58	50.60	50.67	50.74	50.88
L37	51.90	51.42	51.08	50.79	50.69	50.74	50.83	50.98	50.98	51.01
L38	52.16	51.63	51.21	50.94	50.94	50.72	50.85	51.02	51.19	51.13
L39	52.15	51.72	51.40	51.11	50.97	50.89	51.13	51.13	51.23	51.26
L40	52.19	51.66	51.29	51.01	50.96	51.02	51.03	51.29	51.26	51.28
L41	51.98	51.49	51.11	50.83	50.77	50.59	50.61	50.65	50.61	50.82
L42	51.87	51.38	51.02	50.75	50.64	50.51	50.46	50.45	50.56	50.51
L43	51.78	51.28	50.90	50.63	50.57	50.53	50.63	50.85	50.87	50.84
L44	51.83	51.36	51.01	50.75	50.49	50.52	50.47	50.45	50.55	50.55
AVE	52.05	51.57	51.23	50.96	50.83	50.86	50.89	50.96	51.02	51.03
MIN	51.78	51.24	50.90	50.63	50.49	50.51	50.46	50.45	50.55	50.51
MAX	52.34	51.93	51.60	51.36	51.37	51.42	51.47	51.41	51.48	51.49
MEDIAN	52.07	51.59	51.24	50.95	50.91	50.93	50.93	50.99	51.04	51.02
STDEV	0.154	0.186	0.192	0.206	0.224	0.269	0.284	0.285	0.275	0.256

Voltage(V)										
Sample No.	10000H	11000H	/	/	/	/	/	/	/	/
L23	51.00	50.95	/	/	/	/	/	/	/	/
L24	51.26	51.28	/	/	/	/	/	/	/	/
L25	50.92	50.89	/	/	/	/	/	/	/	/
L26	51.00	50.96	/	/	/	/	/	/	/	/
L27	51.04	51.05	/	/	/	/	/	/	/	/
L28	51.43	51.46	/	/	/	/	/	/	/	/
L29	51.26	51.25	/	/	/	/	/	/	/	/
L30	51.32	51.35	/	/	/	/	/	/	/	/
L31	50.68	50.80	/	/	/	/	/	/	/	/
L32	51.35	51.34	/	/	/	/	/	/	/	/
L33	51.04	51.12	/	/	/	/	/	/	/	/
L34	51.09	51.03	/	/	/	/	/	/	/	/
L35	51.01	51.02	/	/	/	/	/	/	/	/
L36	50.88	51.11	/	/	/	/	/	/	/	/
L37	50.96	50.95	/	/	/	/	/	/	/	/
L38	51.15	51.12	/	/	/	/	/	/	/	/
L39	51.24	51.23	/	/	/	/	/	/	/	/
L40	51.29	51.26	/	/	/	/	/	/	/	/
L41	50.77	50.81	/	/	/	/	/	/	/	/
L42	50.60	50.59	/	/	/	/	/	/	/	/
L43	50.83	50.88	/	/	/	/	/	/	/	/
L44	50.55	50.58	/	/	/	/	/	/	/	/
AVE	51.03	51.05	/	/	/	/	/	/	/	/
MIN	50.55	50.58	/	/	/	/	/	/	/	/
MAX	51.43	51.46	/	/	/	/	/	/	/	/
MEDIAN	51.03	51.04	/	/	/	/	/	/	/	/
STDEV	0.246	0.235	/	/	/	/	/	/	/	/

Data Set 3: 105°C; 4800mA	
DUT Identification (Model Number):	Ti32528-251-1812-A2790-00
TMP Temperature:	25.7°C
Air Temperature:	24.9°C
Failures Observed:	None

Initial Data										
Sample No.	Ref. Voltage (V)	Forward Current (mA)	Power (W)	Luminous Flux (Lumens)	CCT (K)	x (CIE 1931)	y (CIE 1931)	u' (CIE 1976)	v' (CIE 1976)	CRI (Ra)
L45	52.08	4800	249.98	14941	2835	0.4484	0.4064	0.2569	0.5240	90.4
L46	52.25	4800	250.80	14857	2796	0.4534	0.4110	0.2582	0.5265	90.2
L47	52.35	4800	251.28	14963	2820	0.4501	0.4078	0.2574	0.5248	90.5
L48	51.96	4800	249.41	14832	2798	0.4532	0.4108	0.2581	0.5264	90.2
L49	52.07	4800	249.94	14911	2804	0.4524	0.4103	0.2579	0.5261	90.2
L50	52.23	4800	250.70	14909	2827	0.4493	0.4072	0.2572	0.5245	90.4
L51	52.43	4800	251.66	14920	2802	0.4528	0.4107	0.2579	0.5263	90.6
L52	52.25	4800	250.80	14883	2788	0.4543	0.4116	0.2585	0.5269	90.2
L53	52.34	4800	251.23	14902	2815	0.4515	0.4098	0.2575	0.5258	90.4
L54	52.13	4800	250.22	14892	2785	0.4535	0.4097	0.2588	0.5260	90.3
L55	52.35	4800	251.28	14857	2826	0.4496	0.4076	0.2572	0.5247	90.7
L56	51.83	4800	248.78	14854	2787	0.4531	0.4094	0.2587	0.5259	90.3
L57	52.00	4800	249.60	14949	2829	0.4490	0.4069	0.2571	0.5243	90.4
L58	52.39	4800	251.47	14935	2805	0.4519	0.4093	0.2580	0.5256	90.6
L59	52.23	4800	250.70	14872	2786	0.4538	0.4105	0.2586	0.5264	90.7
L60	52.13	4800	250.22	15000	2790	0.4534	0.4102	0.2585	0.5262	90.6
L61	52.38	4800	251.42	14919	2823	0.4498	0.4076	0.2573	0.5247	90.5
L62	51.98	4800	249.50	14898	2798	0.4527	0.4099	0.2582	0.5260	90.6
L63	52.18	4800	250.46	14973	2801	0.4523	0.4096	0.2581	0.5258	90.6
L64	52.31	4800	251.09	14995	2807	0.4516	0.4090	0.2579	0.5255	90.6
L65	52.01	4800	249.65	15003	2812	0.4510	0.4086	0.2577	0.5252	90.5
L66	52.21	4800	250.61	14840	2818	0.4503	0.4080	0.2575	0.5249	90.5
AVE	52.19	4800	250.49	14914	2807	0.4517	0.4092	0.2579	0.5256	90.5
MIN	51.83	4800	248.78	14832	2785	0.4484	0.4064	0.2569	0.5240	90.2
MAX	52.43	4800	251.66	15003	2835	0.4543	0.4116	0.2588	0.5269	90.7
MEDIAN	52.22	4800	250.66	14910	2805	0.4521	0.4095	0.2579	0.5258	90.5
STDEV	0.163	0	0.785	52	15.42	0.0018	0.0015	0.0006	0.0008	0.17

DUT Identification (Model Number):	Ti32528-251-1812-A2790-00
TMP Temperature:	105°C ±1.6°C
Air Temperature:	100.4°C ~105°C
Drive Current:	4800mA
Measure Current:	4800mA
Failures Observed:	None

Lumen Maintenance										
Sample No.	0H	1000H	2000H	3000H	4000H	5000H	6000H	7000H	8000H	9000H
L45	100.00%	99.27%	98.99%	98.72%	98.49%	98.28%	98.11%	97.95%	97.79%	97.64%
L46	100.00%	99.35%	99.04%	98.76%	98.55%	98.28%	98.14%	97.96%	97.84%	97.70%
L47	100.00%	99.32%	99.00%	98.69%	98.49%	98.24%	98.09%	97.96%	97.77%	97.72%
L48	100.00%	99.35%	99.04%	98.72%	98.52%	98.32%	98.16%	97.96%	97.82%	97.69%
L49	100.00%	99.31%	98.98%	98.68%	98.49%	98.27%	98.13%	97.93%	97.81%	97.65%
L50	100.00%	99.37%	99.08%	98.79%	98.55%	98.32%	98.15%	98.00%	97.81%	97.68%
L51	100.00%	99.33%	99.01%	98.70%	98.48%	98.26%	98.13%	97.95%	97.79%	97.69%
L52	100.00%	99.38%	99.07%	98.75%	98.54%	98.30%	98.15%	97.97%	97.83%	97.68%
L53	100.00%	99.31%	98.99%	98.69%	98.48%	98.27%	98.11%	97.93%	97.77%	97.64%
L54	100.00%	99.34%	99.02%	98.72%	98.55%	98.30%	98.17%	97.96%	97.81%	97.70%
L55	100.00%	99.36%	99.05%	98.75%	98.53%	98.31%	98.15%	97.98%	97.81%	97.67%
L56	100.00%	99.31%	98.97%	98.69%	98.52%	98.27%	98.13%	97.96%	97.80%	97.63%
L57	100.00%	99.29%	99.01%	98.77%	98.48%	98.26%	98.12%	97.93%	97.81%	97.66%
L58	100.00%	99.36%	99.04%	98.75%	98.52%	98.30%	98.17%	98.00%	97.82%	97.71%
L59	100.00%	99.28%	99.01%	98.70%	98.50%	98.26%	98.10%	97.92%	97.80%	97.65%
L60	100.00%	99.26%	98.95%	98.71%	98.52%	98.26%	98.12%	97.93%	97.80%	97.63%
L61	100.00%	99.35%	99.06%	98.77%	98.53%	98.28%	98.15%	97.98%	97.81%	97.70%
L62	100.00%	99.37%	99.04%	98.76%	98.52%	98.32%	98.14%	97.97%	97.84%	97.68%
L63	100.00%	99.29%	98.97%	98.68%	98.52%	98.26%	98.11%	97.92%	97.77%	97.65%
L64	100.00%	99.32%	99.00%	98.69%	98.49%	98.28%	98.09%	97.93%	97.77%	97.64%
L65	100.00%	99.39%	99.10%	98.75%	98.55%	98.31%	98.15%	97.97%	97.85%	97.68%
L66	100.00%	99.25%	98.94%	98.66%	98.50%	98.26%	98.11%	97.92%	97.78%	97.67%
AVE	100.00%	99.33%	99.02%	98.72%	98.51%	98.28%	98.13%	97.95%	97.80%	97.67%
MIN	100.00%	99.25%	98.94%	98.66%	98.48%	98.24%	98.09%	97.92%	97.77%	97.63%
MAX	100.00%	99.39%	99.10%	98.79%	98.55%	98.32%	98.17%	98.00%	97.85%	97.72%
MEDIAN	100.00%	99.33%	99.01%	98.72%	98.52%	98.28%	98.13%	97.96%	97.81%	97.68%
STDEV	0.00%	0.04%	0.04%	0.04%	0.02%	0.02%	0.02%	0.02%	0.02%	0.03%

Lumen Maintenance										
Sample No.	10000H	11000H	/	/	/	/	/	/	/	/
L45	97.54%	97.37%	/	/	/	/	/	/	/	/
L46	97.55%	97.43%	/	/	/	/	/	/	/	/
L47	97.59%	97.37%	/	/	/	/	/	/	/	/
L48	97.56%	97.47%	/	/	/	/	/	/	/	/
L49	97.51%	97.36%	/	/	/	/	/	/	/	/
L50	97.57%	97.45%	/	/	/	/	/	/	/	/
L51	97.58%	97.38%	/	/	/	/	/	/	/	/
L52	97.54%	97.40%	/	/	/	/	/	/	/	/
L53	97.50%	97.36%	/	/	/	/	/	/	/	/
L54	97.54%	97.42%	/	/	/	/	/	/	/	/
L55	97.55%	97.40%	/	/	/	/	/	/	/	/
L56	97.50%	97.31%	/	/	/	/	/	/	/	/
L57	97.51%	97.36%	/	/	/	/	/	/	/	/
L58	97.54%	97.42%	/	/	/	/	/	/	/	/
L59	97.51%	97.33%	/	/	/	/	/	/	/	/
L60	97.49%	97.35%	/	/	/	/	/	/	/	/
L61	97.56%	97.44%	/	/	/	/	/	/	/	/
L62	97.55%	97.42%	/	/	/	/	/	/	/	/
L63	97.45%	97.35%	/	/	/	/	/	/	/	/
L64	97.46%	97.32%	/	/	/	/	/	/	/	/
L65	97.55%	97.48%	/	/	/	/	/	/	/	/
L66	97.47%	97.30%	/	/	/	/	/	/	/	/
AVE	97.53%	97.39%	/	/	/	/	/	/	/	/
MIN	97.45%	97.30%	/	/	/	/	/	/	/	/
MAX	97.59%	97.48%	/	/	/	/	/	/	/	/
MEDIAN	97.54%	97.38%	/	/	/	/	/	/	/	/
STDEV	0.04%	0.05%	/	/	/	/	/	/	/	/

DUT Identification (Model Number):	Ti32528-251-1812-A2790-00
TMP Temperature:	105°C ±1.6°C
Air Temperature:	100.4°C ~105°C
Drive Current:	4800mA
Measure Current:	4800mA
Failures Observed:	None

Δu'v'										
Sample No.	0H	1000H	2000H	3000H	4000H	5000H	6000H	7000H	8000H	9000H
L45	0.0000	0.0007	0.0010	0.0012	0.0015	0.0019	0.0021	0.0024	0.0026	0.0028
L46	0.0000	0.0005	0.0008	0.0011	0.0014	0.0018	0.0020	0.0023	0.0025	0.0027
L47	0.0000	0.0007	0.0010	0.0013	0.0017	0.0021	0.0022	0.0026	0.0028	0.0029
L48	0.0000	0.0006	0.0008	0.0011	0.0015	0.0020	0.0021	0.0025	0.0026	0.0027
L49	0.0000	0.0007	0.0009	0.0013	0.0016	0.0021	0.0023	0.0027	0.0029	0.0030
L50	0.0000	0.0005	0.0008	0.0011	0.0014	0.0019	0.0022	0.0025	0.0027	0.0029
L51	0.0000	0.0007	0.0010	0.0013	0.0015	0.0020	0.0023	0.0027	0.0028	0.0030
L52	0.0000	0.0006	0.0009	0.0011	0.0014	0.0018	0.0021	0.0024	0.0026	0.0027
L53	0.0000	0.0007	0.0010	0.0013	0.0016	0.0020	0.0022	0.0026	0.0027	0.0029
L54	0.0000	0.0005	0.0007	0.0010	0.0013	0.0018	0.0020	0.0024	0.0026	0.0028
L55	0.0000	0.0007	0.0010	0.0012	0.0016	0.0020	0.0022	0.0026	0.0028	0.0030
L56	0.0000	0.0006	0.0008	0.0011	0.0014	0.0019	0.0021	0.0025	0.0027	0.0028
L57	0.0000	0.0007	0.0009	0.0012	0.0015	0.0020	0.0023	0.0027	0.0028	0.0029
L58	0.0000	0.0008	0.0010	0.0013	0.0016	0.0021	0.0024	0.0028	0.0030	0.0031
L59	0.0000	0.0005	0.0008	0.0010	0.0014	0.0018	0.0020	0.0024	0.0025	0.0027
L60	0.0000	0.0006	0.0009	0.0012	0.0015	0.0019	0.0021	0.0025	0.0027	0.0029
L61	0.0000	0.0007	0.0010	0.0013	0.0017	0.0021	0.0023	0.0027	0.0028	0.0030
L62	0.0000	0.0006	0.0009	0.0011	0.0015	0.0020	0.0022	0.0025	0.0027	0.0029
L63	0.0000	0.0005	0.0008	0.0010	0.0013	0.0018	0.0021	0.0024	0.0026	0.0028
L64	0.0000	0.0008	0.0010	0.0012	0.0016	0.0020	0.0022	0.0026	0.0028	0.0030
L65	0.0000	0.0006	0.0008	0.0011	0.0014	0.0019	0.0021	0.0025	0.0026	0.0028
L66	0.0000	0.0005	0.0007	0.0010	0.0013	0.0018	0.0020	0.0024	0.0025	0.0027
AVE	0.0000	0.0006	0.0009	0.0012	0.0015	0.0019	0.0022	0.0025	0.0027	0.0029
MIN	0.0000	0.0005	0.0007	0.0010	0.0013	0.0018	0.0020	0.0023	0.0025	0.0027
MAX	0.0000	0.0008	0.0010	0.0013	0.0017	0.0021	0.0024	0.0028	0.0030	0.0031
MEDIAN	0.0000	0.0006	0.0009	0.0012	0.0015	0.0020	0.0022	0.0025	0.0027	0.0029
STDEV	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Δu'v'										
Sample No.	10000H	11000H	/	/	/	/	/	/	/	/
L45	0.0029	0.0030	/	/	/	/	/	/	/	/
L46	0.0028	0.0028	/	/	/	/	/	/	/	/
L47	0.0031	0.0031	/	/	/	/	/	/	/	/
L48	0.0029	0.0030	/	/	/	/	/	/	/	/
L49	0.0031	0.0032	/	/	/	/	/	/	/	/
L50	0.0030	0.0031	/	/	/	/	/	/	/	/
L51	0.0031	0.0032	/	/	/	/	/	/	/	/
L52	0.0029	0.0030	/	/	/	/	/	/	/	/
L53	0.0031	0.0031	/	/	/	/	/	/	/	/
L54	0.0029	0.0030	/	/	/	/	/	/	/	/
L55	0.0031	0.0032	/	/	/	/	/	/	/	/
L56	0.0030	0.0031	/	/	/	/	/	/	/	/
L57	0.0031	0.0032	/	/	/	/	/	/	/	/
L58	0.0032	0.0033	/	/	/	/	/	/	/	/
L59	0.0029	0.0030	/	/	/	/	/	/	/	/
L60	0.0030	0.0031	/	/	/	/	/	/	/	/
L61	0.0031	0.0032	/	/	/	/	/	/	/	/
L62	0.0030	0.0030	/	/	/	/	/	/	/	/
L63	0.0029	0.0031	/	/	/	/	/	/	/	/
L64	0.0031	0.0032	/	/	/	/	/	/	/	/
L65	0.0030	0.0031	/	/	/	/	/	/	/	/
L66	0.0029	0.0030	/	/	/	/	/	/	/	/
AVE	0.0030	0.0031	/	/	/	/	/	/	/	/
MIN	0.0028	0.0028	/	/	/	/	/	/	/	/
MAX	0.0032	0.0033	/	/	/	/	/	/	/	/
MEDIAN	0.0030	0.0031	/	/	/	/	/	/	/	/
STDEV	0.0001	0.0001	/	/	/	/	/	/	/	/

DUT Identification (Model Number):	Ti32528-251-1812-A2790-00
TMP Temperature:	105°C ±1.6°C
Air Temperature:	100.4°C ~105°C
Drive Current:	4800mA
Measure Current:	4800mA
Failures Observed:	None

Voltage(V)										
Sample No.	0H	1000H	2000H	3000H	4000H	5000H	6000H	7000H	8000H	9000H
L45	52.08	51.55	51.10	50.82	50.58	50.61	50.62	50.62	50.63	50.67
L46	52.25	51.78	51.41	51.21	51.10	50.96	51.15	51.20	51.18	51.22
L47	52.35	51.83	51.52	51.29	51.08	50.86	51.08	51.07	51.27	51.38
L48	51.96	51.52	51.22	51.01	50.79	50.59	50.95	50.89	50.94	50.92
L49	52.07	51.46	51.31	51.15	51.05	50.98	51.08	51.10	51.12	51.14
L50	52.23	51.84	51.56	51.37	51.23	51.12	51.31	51.38	51.37	51.38
L51	52.43	52.01	51.71	51.48	51.32	51.29	51.45	51.49	51.43	51.53
L52	52.25	51.77	51.48	51.21	51.04	50.95	51.12	51.20	51.29	51.28
L53	52.34	51.87	51.66	51.35	51.14	50.91	51.00	50.87	51.03	51.05
L54	52.13	51.65	51.36	51.2	51.00	50.88	51.06	51.12	51.10	51.13
L55	52.35	51.92	51.63	51.42	51.26	51.07	51.28	51.31	51.28	51.28
L56	51.83	51.35	51.03	50.85	50.64	50.87	50.88	50.88	50.89	50.90
L57	52.00	51.61	51.29	51.1	50.89	50.71	50.86	50.84	50.97	50.99
L58	52.39	52.03	51.77	51.57	51.35	51.41	51.47	51.49	51.50	51.51
L59	52.23	51.72	51.27	51.01	50.78	50.84	50.89	50.71	50.77	50.73
L60	52.13	51.66	51.28	50.99	50.71	50.63	50.69	50.87	50.93	50.89
L61	52.38	51.84	51.52	51.3	51.12	50.88	50.94	50.87	50.89	50.90
L62	51.98	51.56	51.26	50.96	50.91	50.80	50.98	51.00	51.00	51.03
L63	52.18	51.63	51.27	50.97	50.73	50.90	50.86	50.99	51.09	51.14
L64	52.31	51.80	51.43	51.13	50.91	50.80	50.82	50.79	50.78	50.80
L65	52.01	51.53	51.21	50.93	50.74	50.56	50.63	50.51	50.56	50.59
L66	52.21	51.79	51.44	51.21	51.01	50.86	50.99	50.96	51.07	51.15
AVE	52.19	51.71	51.40	51.16	50.97	50.89	51.01	51.01	51.05	51.07
MIN	51.83	51.35	51.03	50.82	50.58	50.56	50.62	50.51	50.56	50.59
MAX	52.43	52.03	51.77	51.57	51.35	51.41	51.47	51.49	51.50	51.53
MEDIAN	52.22	51.75	51.39	51.18	51.01	50.88	50.99	50.98	51.05	51.09
STDEV	0.163	0.178	0.195	0.205	0.222	0.211	0.232	0.262	0.248	0.261

Voltage(V)										
Sample No.	10000H	11000H	/	/	/	/	/	/	/	/
L45	50.72	50.72	/	/	/	/	/	/	/	/
L46	51.24	51.20	/	/	/	/	/	/	/	/
L47	51.37	51.38	/	/	/	/	/	/	/	/
L48	50.95	50.95	/	/	/	/	/	/	/	/
L49	51.19	51.17	/	/	/	/	/	/	/	/
L50	51.38	51.39	/	/	/	/	/	/	/	/
L51	51.48	51.49	/	/	/	/	/	/	/	/
L52	51.29	51.30	/	/	/	/	/	/	/	/
L53	51.24	51.46	/	/	/	/	/	/	/	/
L54	51.14	51.19	/	/	/	/	/	/	/	/
L55	51.26	51.23	/	/	/	/	/	/	/	/
L56	50.93	50.88	/	/	/	/	/	/	/	/
L57	51.14	51.21	/	/	/	/	/	/	/	/
L58	51.47	51.45	/	/	/	/	/	/	/	/
L59	50.84	50.82	/	/	/	/	/	/	/	/
L60	51.00	50.98	/	/	/	/	/	/	/	/
L61	50.88	50.89	/	/	/	/	/	/	/	/
L62	51.01	51.00	/	/	/	/	/	/	/	/
L63	51.20	51.23	/	/	/	/	/	/	/	/
L64	50.81	50.82	/	/	/	/	/	/	/	/
L65	50.67	50.69	/	/	/	/	/	/	/	/
L66	51.18	51.18	/	/	/	/	/	/	/	/
AVE	51.11	51.12	/	/	/	/	/	/	/	/
MIN	50.67	50.69	/	/	/	/	/	/	/	/
MAX	51.48	51.49	/	/	/	/	/	/	/	/
MEDIAN	51.16	51.19	/	/	/	/	/	/	/	/
STDEV	0.235	0.247	/	/	/	/	/	/	/	/

TM-21 Projection L70

Table 1: Report at each LM-80 Test Condition					
Description of LED Light Source Tested (manufacturer, model, catalog number)	Manufacturer: Shenzhen Light Cone Optoelectronics o., Ltd. Model:Ti32528-251-1812-A2790-00				
Test Condition 1 - 55ºC Case Temp		**Test Condition 2 - 85ºC Case Temp**		**Test Condition 3 - 105ºC Case Temp**	
Sample size	22	Sample size	22	Sample size	22
Number of failures	0	Number of failures	0	Number of failures	0
DUT drive current used in the test (mA)	4800	DUT drive current used in the test (mA)	4800	DUT drive current used in the test (mA)	4800
Test duration (hours)	11,000	Test duration (hours)	11,000	Test duration (hours)	11,000
Test duration used for projection (hour to hour)	5,000 - 11,000	Test duration used for projection (hour to hour)	5,000 - 11,000	Test duration used for projection (hour to hour)	5,000 - 11,000
Tested case temperature (ºC)	55	Tested case temperature (ºC)	85	Tested case temperature (ºC)	105
α	1.119E-06	α	1.297E-06	α	1.521E-06
B	0.999	B	0.996	B	0.990
Reported L70(11k) (hours)	>66000	Reported L70(11k) (hours)	>66000	Reported L70(11k) (hours)	>66000

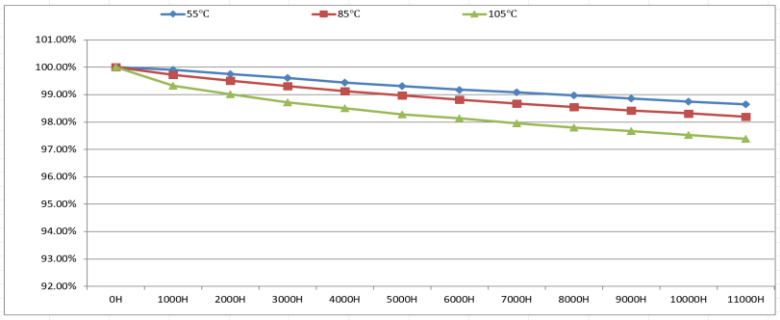
TM-21 Projection L80

Table 1: Report at each LM-80 Test Condition					
Description of LED Light Source Tested (manufacturer, model, catalog number)	Manufacturer: Shenzhen Light Cone Optoelectronics o., Ltd. Model:Ti32528-251-1812-A2790-00				
Test Condition 1 - 55ºC Case Temp		**Test Condition 2 - 85ºC Case Temp**		**Test Condition 3 - 105ºC Case Temp**	
Sample size	22	Sample size	22	Sample size	22
Number of failures	0	Number of failures	0	Number of failures	0
DUT drive current used in the test (mA)	4800	DUT drive current used in the test (mA)	4800	DUT drive current used in the test (mA)	4800
Test duration (hours)	11,000	Test duration (hours)	11,000	Test duration (hours)	11,000
Test duration used for projection (hour to hour)	5,000 - 11,000	Test duration used for projection (hour to hour)	5,000 - 11,000	Test duration used for projection (hour to hour)	5,000 - 11,000
Tested case temperature (ºC)	55	Tested case temperature (ºC)	85	Tested case temperature (ºC)	105
α	1.119E-06	α	1.297E-06	α	1.521E-06
B	0.999	B	0.996	B	0.990
Reported L80(11k) (hours)	>66000	Reported L80(11k) (hours)	>66000	Reported L80(11k) (hours)	>66000

TM-21 Projection L90

Table 1: Report at each LM-80 Test Condition					
Description of LED Light Source Tested (manufacturer, model, catalog number)	Manufacturer: Shenzhen Light Cone Optoelectronics o., Ltd. Model:Ti32528-251-1812-A2790-00				
Test Condition 1 - 55ºC Case Temp		**Test Condition 2 - 85ºC Case Temp**		**Test Condition 3 - 105ºC Case Temp**	
Sample size	22	Sample size	22	Sample size	22
Number of failures	0	Number of failures	0	Number of failures	0
DUT drive current used in the test (mA)	4800	DUT drive current used in the test (mA)	4800	DUT drive current used in the test (mA)	4800
Test duration (hours)	11,000	Test duration (hours)	11,000	Test duration (hours)	11,000
Test duration used for projection (hour to hour)	5,000 - 11,000	Test duration used for projection (hour to hour)	5,000 - 11,000	Test duration used for projection (hour to hour)	5,000 - 11,000
Tested case temperature (ºC)	55	Tested case temperature (ºC)	85	Tested case temperature (ºC)	105
α	1.119E-06	α	1.297E-06	α	1.521E-06
B	0.999	B	0.996	B	0.990
Reported L90(11k) (hours)	>66000	Reported L90(11k) (hours)	>66000	Reported L90(11k) (hours)	63,000

Lumen Maintenance



Color Maintenance (Δu'v')

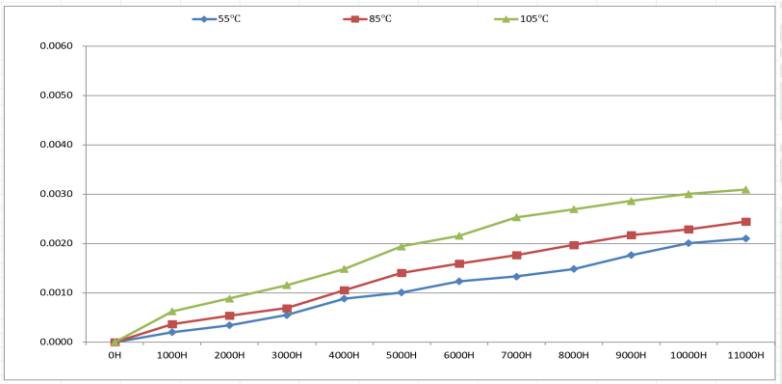
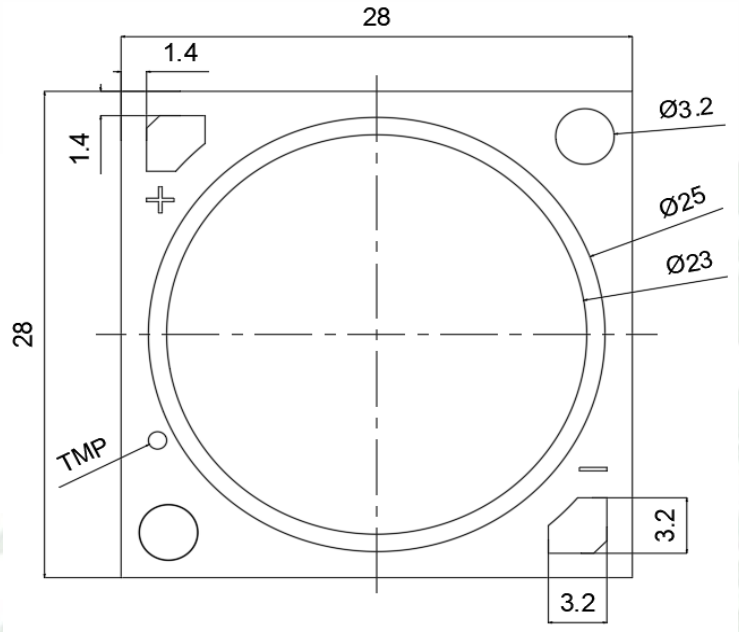
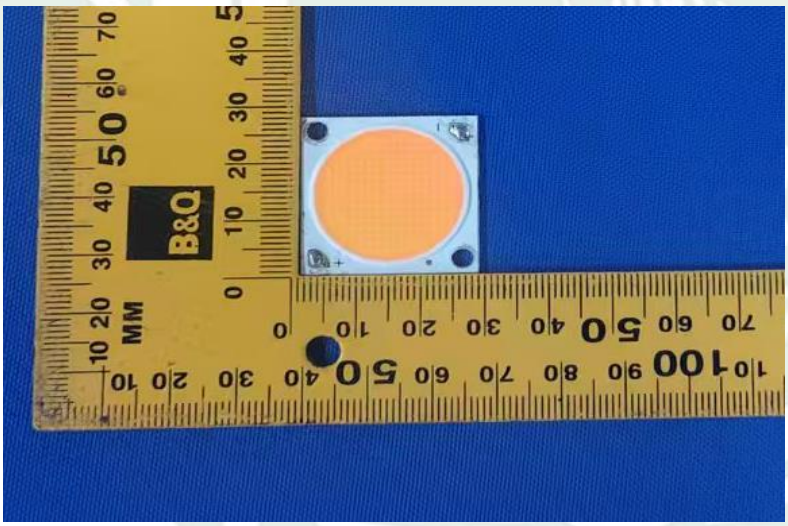


Diagram and Temperature Measure Point (TMP)



EUT – General Appearance View



Addition models -Family products covered by this report:

According to the applicant, the tested model and the other LED modules which attest similarity are designed with identical material and identical construction processes. The tested model is the greatest current density and power density, The series is divided according to the manufacturer's requirements. The addition models listed in the following table.
Disclaimer: The product family is grouped by applicant (or manufacture), the basic model tested is designated by applicant (or manufacture), BEST VERIFICATION LLC doesn't validity variations and family scope.

NO.	Model Number	Series	Parallel	Number of Dies	Power (W)	Power Density per PCB (W/mm^2)	Minimum Die Edge (mm)	Average current density per LED die (mA/mm^2)	Current (mA)
1	Ti32528-251-1812-A2790-00(Tested)	18	12	216	251	0.320	0.1	712.44	4800
2	HV183E-24-005-0703-*****-***	07	03	21	4.557	0.026	0.1	187.72	210
3	HV183E-24-007-0703-*****-***	07	03	21	6.51	0.037	0.1	268.17	300
4	HV183E-24-010-0703-*****-***	07	03	21	9.9225	0.056	0.1	362.02	405
5	HV183E-24-012-0703-*****-***	07	03	21	11.781	0.066	0.1	455.88	510
6	HV183E-48-005-1502-*****-***	15	02	30	4.65	0.026	0.1	134.08	100
7	HV183E-48-007-1502-*****-***	15	02	30	6.975	0.039	0.1	201.12	150
8	HV183E-48-010-1502-*****-***	15	02	30	9.6	0.054	0.1	268.17	200
9	HV183E-48-012-1502-*****-***	15	02	30	11.625	0.065	0.1	335.21	250
10	HV189U-24-012-0704-*****-***	07	04	28	11.55	0.046	0.1	335.21	500
11	HV189U-24-015-0705-*****-***	07	04	28	14.7	0.059	0.1	402.25	600
12	P2111-006-0304-*****-***	03	04	12	8.928	0.050	0.1	643.60	960
13	P2111-006-1201-*****-***	12	01	12	8.928	0.050	0.1	643.60	240
14	P2111-012-0604-*****-***	06	04	24	17.856	0.100	0.1	643.60	960
15	P2111-012-1202-*****-***	12	02	24	17.856	0.100	0.1	643.60	480
16	P211C-010-1202-*****-***	12	02	24	17.856	0.100	0.1	643.60	480
17	P2121-006-1201-*****-***	12	01	12	8.928	0.049	0.2	643.60	240
18	P2121-012-0604-*****-***	06	04	24	17.856	0.098	0.2	643.60	960
19	P2121-012-1202-*****-***	12	02	24	17.856	0.098	0.2	643.60	480
20	P2121-018-1203-*****-***	12	03	36	26.784	0.147	0.2	643.60	720
21	P2121-024-1204-*****-***	12	04	48	35.712	0.196	0.2	643.60	960
22	P2121-030-1205-*****-***	12	05	60	44.64	0.245	0.2	643.60	1200
23	P2131-012-1202-*****-***	12	02	24	17.856	0.071	0.2	643.60	480
24	P2131-018-0606-*****-***	06	06	36	26.784	0.107	0.2	643.60	1440
25	P2131-018-1203-*****-***	12	03	36	26.784	0.107	0.2	643.60	720
26	P2131-024-1204-*****-***	12	04	48	35.712	0.142	0.2	643.60	960
27	P2141-030-1205-*****-***	12	05	60	44.64	0.124	0.2	643.60	1200
28	P2141-036-1206-*****-***	12	06	72	53.568	0.148	0.2	643.60	1440
29	P2141-040-1207-*****-***	12	07	84	62.496	0.173	0.2	643.60	1680
30	P2141-050-1208-*****-***	12	08	96	71.424	0.198	0.2	643.60	1920
31	P2141-060-1210-*****-***	12	10	120	89.28	0.247	0.2	643.60	2400
32	P2117-006-0304-*****-***	03	04	12	8.928	0.050	0.1	643.60	960
33	P2117-006-1201-*****-***	12	01	12	8.928	0.050	0.1	643.60	240

34	P2117-012-0604-*****-***	06	04	24	17.856	0.100	0.1	643.60	960
35	P2117-012-1202-*****-***	12	02	24	17.856	0.100	0.1	643.60	480
36	P2128-006-1201-*****-***	12	01	12	8.928	0.049	0.2	643.60	240
37	P2128-012-0604-*****-***	06	04	24	17.856	0.098	0.2	643.60	960
38	P2128-012-1202-*****-***	12	02	24	17.856	0.098	0.2	643.60	480
39	P2128-018-1203-*****-***	12	03	36	26.784	0.147	0.2	643.60	720
40	P2128-024-1204-*****-***	12	04	48	35.712	0.196	0.2	643.60	960
41	P2128-030-1205-*****-***	12	05	60	44.64	0.245	0.2	643.60	1200
42	P2133-012-1202-*****-***	12	02	24	17.856	0.071	0.2	643.60	480
43	P2133-018-0606-*****-***	06	06	36	26.784	0.107	0.2	643.60	1440
44	P2133-018-1203-*****-***	12	03	36	26.784	0.107	0.2	643.60	720
45	P2133-024-1204-*****-***	12	04	48	35.712	0.142	0.2	643.60	960
46	P214B-030-1205-*****-***	12	05	60	44.64	0.124	0.2	643.60	1200
47	P214B-036-1206-*****-***	12	06	72	53.568	0.148	0.2	643.60	1440
48	P214B-040-1207-*****-***	12	07	84	62.496	0.173	0.2	643.60	1680
49	P214B-050-1208-*****-***	12	08	96	71.424	0.198	0.2	643.60	1920
50	P214B-060-1210-*****-***	12	10	120	89.28	0.247	0.2	643.60	2400
51	P2142-036-1206-*****-***	12	06	72	53.568	0.148	0.2	643.60	1440
52	P2142-040-1207-*****-***	12	07	84	62.496	0.173	0.2	643.60	1680
53	P2151-030-1205-*****-***	12	05	60	44.64	0.140	0.2	643.60	1200
54	P2151-036-1206-*****-***	12	06	72	53.568	0.168	0.2	643.60	1440
55	P2156-030-1205-*****-***	12	05	60	44.64	0.140	0.2	643.60	1200
56	P2156-036-1206-*****-***	12	06	72	53.568	0.168	0.2	643.60	1440
57	P2152-050-1208-*****-***	12	08	96	71.424	0.224	0.2	643.60	1920
58	P2171-036-1206-*****-***	12	06	72	53.568	0.094	0.2	643.60	1440
59	P2171-050-1208-*****-***	12	08	96	71.424	0.126	0.2	643.60	1920
60	P2171-060-1210-*****-***	12	10	120	89.28	0.157	0.2	643.60	2400
61	P2171-072-1212-*****-***	12	12	144	107.136	0.188	0.2	643.60	2880
62	P2181-066-1211-*****-***	12	11	132	98.208	0.125	0.2	643.60	2640
63	P2181-072-1212-*****-***	12	12	144	107.136	0.137	0.2	643.60	2880
64	P2181-110-1812-*****-***	18	12	216	160.704	0.205	0.2	643.60	2880
65	P4111-009-0603-*****-***	06	03	18	13.392	0.075	0.1	643.60	720
66	P1111J-010-0403-*****-***	04	03	12	8.928	0.050	0.1	643.60	720
67	P1492-008-1002-*****-***	10	02	20	14.88	0.184	0.1	643.60	480
68	P1111-022-1204-*****-***	12	04	48	27	0.151	0.1	643.60	720
69	P217N-036-1206-*****-***	12	06	72	53.568	0.094	0.2	643.60	1440
70	P217N-050-1208-*****-***	12	08	96	71.424	0.126	0.2	643.60	1920
71	P217N-060-1210-*****-***	12	10	120	89.28	0.157	0.2	643.60	2400
72	P217N-072-1212-*****-***	12	12	144	107.136	0.188	0.2	643.60	2880

73	P218D-066-1211-*****-***	12	11	132	98.208	0.125	0.2	643.60	2640
74	P218D-072-1212-*****-***	12	12	144	107.136	0.137	0.2	643.60	2880
75	P218D-110-1812-*****-***	18	12	216	160.704	0.205	0.2	643.60	2880
76	P4117-009-0603-*****-***	06	03	18	13.392	0.075	0.1	643.60	720
77	P1182S-010-0403-*****-***	04	03	12	8.928	0.050	0.1	643.60	720
78	P1117-022-1204-*****-***	12	04	48	27	0.151	0.1	643.60	720
79	G0131-030-1205-*****-***	12	05	60	44.64	0.178	0.2	643.60	1200
80	G0143-024-1204-*****-***	12	04	48	35.712	0.099	0.2	643.60	960
81	G0151-024-1204-*****-***	12	04	48	35.712	0.112	0.2	643.60	960
82	G0151-040-1207-*****-***	12	07	84	62.496	0.196	0.2	643.60	1680
83	G0152-040-1207-*****-***	12	07	84	62.496	0.196	0.2	643.60	1680
84	G0133-030-1205-*****-***	12	05	60	44.64	0.178	0.2	643.60	1200
85	G0156-024-1204-*****-***	12	04	48	35.712	0.112	0.2	643.60	960
86	G0156-040-1207-*****-***	12	07	84	62.496	0.196	0.2	643.60	1680
87	FGG117-010-1202-*****-***	12	02	24	10.62	0.060	0.15	301.95	300
88	FGG128-012-1204-*****-***	12	04	48	21.24	0.117	0.15	301.95	600
89	FGG64C-025-1208-*****-***	12	08	96	42.48	0.118	0.15	301.95	1200
90	FGG64C-025-1311-*****-***	13	11	143	50.622	0.140	0.15	211.36	1320
91	FGG175-040-1315-*****-***	13	15	195	69.03	0.121	0.15	241.56	1800
92	ZM8111-010-1202-*****-***	12	02	24	10.62	0.060	0.15	301.95	300
93	ZM8121-012-1204-*****-***	12	04	48	21.24	0.117	0.15	301.95	600
94	ZM8141-025-1208-*****-***	12	08	96	42.48	0.118	0.15	301.95	1200
95	ZM8141-030-1310-*****-***	13	10	130	46.02	0.127	0.15	241.56	1200
96	ZM8141-030-3603-*****-***	36	03	108	47.79	0.132	0.15	301.95	450
97	ZM8171-022-1315-*****-***	13	15	195	69.03	0.121	0.15	241.56	1800
98	ZM8117-010-1202-*****-***	12	02	24	10.62	0.060	0.15	301.95	300
99	ZM8128-012-1204-*****-***	12	04	48	21.24	0.117	0.15	301.95	600
100	ZM814B-025-1208-*****-***	12	08	96	42.48	0.118	0.15	301.95	1200
101	ZM814B-030-1310-*****-***	13	10	130	46.02	0.127	0.15	241.56	1200
102	ZM814B-030-3603-*****-***	36	03	108	47.79	0.132	0.15	301.95	450
103	ZM817N-022-1315-*****-***	13	15	195	69.03	0.121	0.15	241.56	1800
104	FGF65F-030-1308-*****-***	13	08	104	53.352	0.148	0.15	264.14	1440
105	FGF24Q-018-1303-*****-***	13	03	39	20.007	0.110	0.15	264.14	540
106	FGF363-020-1305-*****-***	13	05	65	33.345	0.105	0.15	264.14	900
107	GZ3F-1305-006-1301-*****-33-01	13	01	13	19	0.108	0.1	711.66	500
108	GZ3F-1502-013-1302-*****-33-01	13	02	26	38	0.153	0.1	711.66	1000
109	GD64C-030-1310-*****-***	13	10	130	96.72	0.268	0.2	643.60	2400
110	GD128-020-1205-*****-***	12	05	60	44.64	0.245	0.2	643.60	1200
111	FGD64C-028-1311-*****-***	13	11	143	50.622	0.140	0.15	211.36	1320

112	GB64C-035-3604-*****-***	36	04	144	107.136	0.297	0.2	643.60	960
113	GB121-030-1205-*****-***	12	05	60	44.64	0.245	0.2	643.60	1200
114	GB141-050-1208-*****-***	12	08	96	71.424	0.198	0.2	643.60	1920
115	GZ111-022-1204-*****-***	12	04	48	27	0.151	0.1	643.60	720
116	GB128-030-1205-*****-***	12	05	60	44.64	0.245	0.2	643.60	1200
117	GB14B-050-1208-*****-***	12	08	96	71.424	0.198	0.2	643.60	1920
118	GZ117-022-1204-*****-***	12	04	48	27	0.151	0.1	643.60	720
119	TW883L-010-1201*****-1201*****-***	12	02	24	27.7512	0.156	0.1	642.39	746
120	TW883P-010-1201*****-1201*****-***	12	02	24	27.7512	0.156	0.1	642.39	746
121	TW882A-010-1201*****-1201*****-***	12	02	24	27.7512	0.156	0.1	642.39	746
122	TW889Z-020-1202*****-1202*****-***	12	04	48	55.5024	0.221	0.1	642.39	1492
123	TW8447-030-1203*****-1203*****-***	12	06	72	83.2536	0.235	0.1	642.39	2238
124	TW8586-050-1205*****-1205*****-***	12	10	120	130.98	0.297	0.11	692.63	3700
125	TW411V-010-1201*****-1201*****-***	12	02	24	27.36	0.154	0.15	586.98	800
126	TW413P-020-1202*****-1202*****-***	12	04	48	54.72	0.218	0.15	586.98	1600
127	TW415M-030-1203*****-1203*****-***	12	06	72	82.08	0.258	0.15	586.98	2400
128	TW4448-030-1203*****-1203*****-***	12	06	72	82.08	0.232	0.15	586.98	2400
129	TW4587-050-1205*****-1205*****-***	12	10	120	136.8	0.310	0.1	586.98	4000
130	TW883L-010-1201*****-1201*****-***	12	02	24	27.7512	0.156	0.1	642.39	746
131	TW883P-010-1201*****-1201*****-***	12	02	24	27.7512	0.156	0.1	642.39	746
132	TW882A-010-1201*****-1201*****-***	12	02	24	27.7512	0.156	0.1	642.39	746
133	TW889E-020-1202*****-1202*****-***	12	04	48	55.5024	0.221	0.1	642.39	1492
134	TW889Z-020-1202*****-1202*****-***	12	04	48	55.5024	0.221	0.1	642.39	1492
135	TW815Z-030-1203*****-1203*****-***	12	06	72	83.2536	0.261	0.1	642.39	2238
136	TW8447-030-1203*****-1203*****-***	12	06	72	83.2536	0.235	0.1	642.39	2238
137	TW814L-040-1204*****-1204*****-***	12	08	96	99.696	0.276	0.1	576.95	2680
138	TW8586-050-1205*****-1205*****-***	12	10	120	130.98	0.297	0.11	692.63	3700
139	TW411V-010-1201*****-1201*****-***	12	02	24	27.36	0.154	0.15	586.98	800
140	TW413P-020-1202*****-1202*****-***	12	04	48	54.72	0.218	0.15	586.98	1600
141	TW415M-030-1203*****-1203*****-***	12	06	72	82.08	0.258	0.15	586.98	2400
142	TW4448-030-1203*****-1203*****-***	12	06	72	82.08	0.232	0.15	586.98	2400
143	TW4587-050-1205*****-1205*****-***	12	10	120	136.8	0.310	0.1	586.98	4000
144	GZ11C-010-1202-*****-***	12	02	24	17.856	0.100	0.1	643.60	480
145	TB117-006-0305-*****-***	03	05	15	11.16	0.063	0.1	643.60	1200
146	TB133-008-0309-*****-***	03	09	27	20.088	0.080	0.2	643.60	2160
147	T2128-012-1203-*****-***	12	03	36	26.784	0.147	0.2	643.60	720
148	MY2148-033-1210-*****-***	12	10	120	89.28	0.247	0.2	643.60	2400
149	Ti1**13-***-0601-*****-**	06	01	6	5	0.026	0.1	699.65	260
150	Ti1**13-***-0701-*****-**	07	01	7	5	0.030	0.1	699.65	260

151	Ti1**13-***-0801-*****-**	08	01	8	6	0.034	0.1	699.65	260
152	Ti1**13-***-1201-*****-**	12	01	12	9	0.052	0.1	699.65	260
153	Ti1**13-***-0602-*****-**	06	02	12	9	0.052	0.1	699.65	520
154	Ti1**13-***-1202-*****-**	12	02	24	18	0.103	0.1	699.65	520
155	Ti1**13-***-0604-*****-**	06	04	24	18	0.103	0.1	699.65	1040
156	Ti1**13-***-1203-*****-**	12	03	36	28	0.155	0.1	699.65	780
157	Ti1**13-***-0606-*****-**	06	06	36	28	0.155	0.1	699.65	1560
158	Ti1**13-***-1204-*****-**	12	04	48	37	0.207	0.1	699.65	1040
159	Ti1**13-***-0608-*****-**	06	08	48	37	0.207	0.1	699.65	2080
160	Ti1**13-***-1205-*****-**	12	05	60	46	0.258	0.1	699.65	1300
161	Ti1**13-***-1206-*****-**	12	06	72	55	0.310	0.1	699.65	1560
162	Ti1**13-***-1301-*****-**	13	01	13	10	0.056	0.1	699.65	260
163	Ti1**13-***-1302-*****-**	13	02	26	20	0.112	0.1	699.65	520
164	Ti1**13-***-1303-*****-**	13	03	39	30	0.168	0.1	699.65	780
165	Ti1**13-***-1304-*****-**	13	04	52	40	0.224	0.1	699.65	1040
166	Ti1**13-***-1305-*****-**	13	05	65	50	0.280	0.1	699.65	1300
167	Ti1**13-***-1306-*****-**	13	06	78	55	0.310	0.1	645.83	1440
168	Ti1**15-***-0601-*****-**	06	01	6	5	0.018	0.1	699.65	260
169	Ti1**15-***-0701-*****-**	07	01	7	5	0.021	0.1	699.65	260
170	Ti1**15-***-0801-*****-**	08	01	8	6	0.024	0.1	699.65	260
171	Ti1**15-***-1201-*****-**	12	01	12	9	0.037	0.1	699.65	260
172	Ti1**15-***-0602-*****-**	06	02	12	9	0.037	0.1	699.65	520
173	Ti1**15-***-1202-*****-**	12	02	24	18	0.073	0.1	699.65	520
174	Ti1**15-***-0604-*****-**	06	04	24	18	0.073	0.1	699.65	1040
175	Ti1**15-***-1203-*****-**	12	03	36	28	0.110	0.1	699.65	780
176	Ti1**15-***-0606-*****-**	06	06	36	28	0.110	0.1	699.65	1560
177	Ti1**15-***-1204-*****-**	12	04	48	37	0.147	0.1	699.65	1040
178	Ti1**15-***-0608-*****-**	06	08	48	37	0.147	0.1	699.65	2080
179	Ti1**15-***-1205-*****-**	12	05	60	46	0.183	0.1	699.65	1300
180	Ti1**15-***-1206-*****-**	12	06	72	55	0.220	0.1	699.65	1560
181	Ti1**15-***-1301-*****-**	13	01	13	10	0.040	0.1	699.65	260
182	Ti1**15-***-1302-*****-**	13	02	26	20	0.079	0.1	699.65	520
183	Ti1**15-***-1303-*****-**	13	03	39	30	0.119	0.1	699.65	780
184	Ti1**15-***-1304-*****-**	13	04	52	40	0.159	0.1	699.65	1040
185	Ti1**15-***-1305-*****-**	13	05	65	50	0.198	0.1	699.65	1300
186	Ti1**15-***-1306-*****-**	13	06	78	60	0.238	0.1	699.65	1560
187	Ti1**18-***-1203-*****-**	12	03	36	28	0.087	0.1	699.65	780
188	Ti1**18-***-0606-*****-**	06	06	36	28	0.087	0.1	699.65	1560
189	Ti1**18-***-1204-*****-**	12	04	48	37	0.116	0.1	699.65	1040

190	Ti1**18-***-0608-*****-**	06	08	48	37	0.116	0.1	699.65	2080
191	Ti1**18-***-1205-*****-**	12	05	60	46	0.144	0.1	699.65	1300
192	Ti1**18-***-1206-*****-**	12	06	72	55	0.173	0.1	699.65	1560
193	Ti1**18-***-1207-*****-**	12	07	84	64	0.202	0.1	699.65	1820
194	Ti1**18-***-1208-*****-**	12	08	96	74	0.231	0.1	699.65	2080
195	Ti1**18-***-1209-*****-**	12	09	108	83	0.260	0.1	699.65	2340
196	Ti1**18-***-1210-*****-**	12	10	120	92	0.289	0.1	699.65	2600
197	Ti1**18-***-1303-*****-**	13	03	39	30	0.094	0.1	699.65	780
198	Ti1**18-***-1304-*****-**	13	04	52	40	0.125	0.1	699.65	1040
199	Ti1**18-***-1305-*****-**	13	05	65	50	0.156	0.1	699.65	1300
200	Ti1**18-***-1306-*****-**	13	06	78	60	0.188	0.1	699.65	1560
201	Ti1**18-***-1307-*****-**	13	07	91	70	0.219	0.1	699.65	1820
202	Ti1**18-***-1308-*****-**	13	08	104	80	0.250	0.1	699.65	2080
203	Ti1**18-***-1309-*****-**	13	09	117	90	0.282	0.1	699.65	2340
204	Ti1**18-***-1310-*****-**	13	10	130	100	0.313	0.1	699.65	2600
205	Ti1**19-***-1203-*****-**	12	03	36	28	0.076	0.1	699.65	780
206	Ti1**19-***-0606-*****-**	06	06	36	28	0.076	0.1	699.65	1560
207	Ti1**19-***-1204-*****-**	12	04	48	37	0.102	0.1	699.65	1040
208	Ti1**19-***-0608-*****-**	06	08	48	37	0.102	0.1	699.65	2080
209	Ti1**19-***-1205-*****-**	12	05	60	46	0.127	0.1	699.65	1300
210	Ti1**19-***-1206-*****-**	12	06	72	55	0.153	0.1	699.65	1560
211	Ti1**19-***-1207-*****-**	12	07	84	64	0.178	0.1	699.65	1820
212	Ti1**19-***-1208-*****-**	12	08	96	74	0.204	0.1	699.65	2080
213	Ti1**19-***-1209-*****-**	12	09	108	83	0.229	0.1	699.65	2340
214	Ti1**19-***-1210-*****-**	12	10	120	92	0.255	0.1	699.65	2600
215	Ti1**19-***-1211-*****-**	12	11	132	101	0.280	0.1	699.65	2860
216	Ti1**19-***-1212-*****-**	12	12	144	110	0.306	0.1	699.65	3120
217	Ti1**19-***-1213-*****-**	12	13	156	115	0.319	0.1	672.74	3250
218	Ti1**19-***-1214-*****-**	12	14	168	114	0.316	0.1	618.92	3220
219	Ti1**19-***-1215-*****-**	12	15	180	112	0.309	0.1	565.11	3150
220	Ti1**19-***-1303-*****-**	13	03	39	30	0.083	0.1	699.65	780
221	Ti1**19-***-1304-*****-**	13	04	52	40	0.110	0.1	699.65	1040
222	Ti1**19-***-1305-*****-**	13	05	65	50	0.138	0.1	699.65	1300
223	Ti1**19-***-1306-*****-**	13	06	78	60	0.166	0.1	699.65	1560
224	Ti1**19-***-1307-*****-**	13	07	91	70	0.193	0.1	699.65	1820
225	Ti1**19-***-1308-*****-**	13	08	104	77	0.212	0.1	672.74	2000
226	Ti1**19-***-1309-*****-**	13	09	117	79	0.220	0.1	618.92	2070
227	Ti1**19-***-1310-*****-**	13	10	130	81	0.223	0.1	565.11	2100
228	Ti1**19-***-1311-*****-**	13	11	143	110	0.304	0.1	699.65	2860

229	Ti1**19-***-1312-*****-**	13	12	156	115	0.319	0.1	672.74	3000
230	Ti1**19-***-1313-*****-**	13	13	169	115	0.318	0.1	618.92	2990
231	Ti1**24-***-1205-*****-**	12	05	60	46	0.081	0.1	699.65	1300
232	Ti1**24-***-1206-*****-**	12	06	72	55	0.097	0.1	699.65	1560
233	Ti1**24-***-1207-*****-**	12	07	84	64	0.113	0.1	699.65	1820
234	Ti1**24-***-1208-*****-**	12	08	96	74	0.129	0.1	699.65	2080
235	Ti1**24-***-1209-*****-**	12	09	108	83	0.146	0.1	699.65	2340
236	Ti1**24-***-1210-*****-**	12	10	120	92	0.162	0.1	699.65	2600
237	Ti1**24-***-1211-*****-**	12	11	132	101	0.178	0.1	699.65	2860
238	Ti1**24-***-1212-*****-**	12	12	144	110	0.194	0.1	699.65	3120
239	Ti1**24-***-1213-*****-**	12	13	156	120	0.210	0.1	699.65	3380
240	Ti1**24-***-1214-*****-**	12	14	168	129	0.227	0.1	699.65	3640
241	Ti1**24-***-1215-*****-**	12	15	180	138	0.243	0.1	699.65	3900
242	Ti1**24-***-1216-*****-**	12	16	192	147	0.259	0.1	699.65	4160
243	Ti1**24-***-1217-*****-**	12	17	204	156	0.275	0.1	699.65	4420
244	Ti1**24-***-1218-*****-**	12	18	216	166	0.291	0.1	699.65	4680
245	Ti1**24-***-1305-*****-**	13	05	65	50	0.088	0.1	699.65	1300
246	Ti1**24-***-1306-*****-**	13	06	78	60	0.105	0.1	699.65	1560
247	Ti1**24-***-1307-*****-**	13	07	91	70	0.123	0.1	699.65	1820
248	Ti1**24-***-1308-*****-**	13	08	104	80	0.140	0.1	699.65	2080
249	Ti1**24-***-1309-*****-**	13	09	117	90	0.158	0.1	699.65	2340
250	Ti1**24-***-1310-*****-**	13	10	130	100	0.175	0.1	699.65	2600
251	Ti1**24-***-1311-*****-**	13	11	143	110	0.193	0.1	699.65	2860
252	Ti1**24-***-1312-*****-**	13	12	156	120	0.210	0.1	699.65	3120
253	Ti1**24-***-1313-*****-**	13	13	169	130	0.228	0.1	699.65	3380
254	Ti1**24-***-1314-*****-**	13	14	182	140	0.245	0.1	699.65	3640
255	Ti1**24-***-1315-*****-**	13	15	195	150	0.263	0.1	699.65	3900
256	Ti1**24-***-1316-*****-**	13	16	208	160	0.280	0.1	699.65	4160
257	Ti1**28-***-1208-*****-**	12	08	96	74	0.094	0.1	699.65	2080
258	Ti1**28-***-1209-*****-**	12	09	108	83	0.106	0.1	699.65	2340
259	Ti1**28-***-1210-*****-**	12	10	120	92	0.117	0.1	699.65	2600
260	Ti1**28-***-1211-*****-**	12	11	132	101	0.129	0.1	699.65	2860
261	Ti1**28-***-1212-*****-**	12	12	144	110	0.141	0.1	699.65	3120
262	Ti1**28-***-1213-*****-**	12	13	156	120	0.153	0.1	699.65	3380
263	Ti1**28-***-1214-*****-**	12	14	168	129	0.164	0.1	699.65	3640
264	Ti1**28-***-1215-*****-**	12	15	180	138	0.176	0.1	699.65	3900
265	Ti1**28-***-1216-*****-**	12	16	192	147	0.188	0.1	699.65	4160
266	Ti1**28-***-1217-*****-**	12	17	204	156	0.200	0.1	699.65	4420
267	Ti1**28-***-1218-*****-**	12	18	216	166	0.211	0.1	699.65	4680

268	Ti1**28-***-1308-*****-**	13	08	104	80	0.102	0.1	699.65	2080
269	Ti1**28-***-1309-*****-**	13	09	117	90	0.114	0.1	699.65	2340
270	Ti1**28-***-1310-*****-**	13	10	130	100	0.127	0.1	699.65	2600
271	Ti1**28-***-1311-*****-**	13	11	143	110	0.140	0.1	699.65	2860
272	Ti1**28-***-1312-*****-**	13	12	156	120	0.153	0.1	699.65	3120
273	Ti1**28-***-1313-*****-**	13	13	169	130	0.165	0.1	699.65	3380
274	Ti1**28-***-1314-*****-**	13	14	182	140	0.178	0.1	699.65	3640
275	Ti1**28-***-1315-*****-**	13	15	195	150	0.191	0.1	699.65	3900
276	Ti1**28-***-1316-*****-**	13	16	208	160	0.203	0.1	699.65	4160
277	Ti1**28-***-1812-*****-**	18	12	216	166	0.211	0.1	699.65	3120
278	Ti2**13-***-0601-*****-**	06	01	6	6	0.036	0.1	711.74	360
279	Ti2**13-***-0701-*****-**	07	01	7	7	0.042	0.1	711.74	360
280	Ti2**13-***-0801-*****-**	08	01	8	8	0.048	0.1	711.74	360
281	Ti2**13-***-1201-*****-**	12	01	12	13	0.072	0.1	711.74	360
282	Ti2**13-***-0602-*****-**	06	02	12	13	0.072	0.1	711.74	720
283	Ti2**13-***-1202-*****-**	12	02	24	25	0.143	0.1	711.74	720
284	Ti2**13-***-0604-*****-**	06	04	24	25	0.143	0.1	711.74	1440
285	Ti2**13-***-1203-*****-**	12	03	36	38	0.215	0.1	711.74	1080
286	Ti2**13-***-0606-*****-**	06	06	36	38	0.215	0.1	711.74	2160
287	Ti2**13-***-1204-*****-**	12	04	48	51	0.286	0.1	711.74	1440
288	Ti2**13-***-0608-*****-**	06	08	48	51	0.286	0.1	711.74	2880
289	Ti2**13-***-1301-*****-**	13	01	13	14	0.077	0.1	711.74	360
290	Ti2**13-***-1302-*****-**	13	02	26	28	0.155	0.1	711.74	720
291	Ti2**13-***-1303-*****-**	13	03	39	41	0.232	0.1	711.74	1080
292	Ti2**13-***-1304-*****-**	13	04	52	55	0.310	0.1	711.74	1440
293	Ti2**15-***-0601-*****-**	06	01	6	6	0.025	0.1	711.74	360
294	Ti2**15-***-0701-*****-**	07	01	7	7	0.030	0.1	711.74	360
295	Ti2**15-***-0801-*****-**	08	01	8	8	0.034	0.1	711.74	360
296	Ti2**15-***-1201-*****-**	12	01	12	13	0.051	0.1	711.74	360
297	Ti2**15-***-0602-*****-**	06	02	12	13	0.051	0.1	711.74	720
298	Ti2**15-***-1202-*****-**	12	02	24	25	0.101	0.1	711.74	720
299	Ti2**15-***-0604-*****-**	06	04	24	25	0.101	0.1	711.74	1440
300	Ti2**15-***-1203-*****-**	12	03	36	38	0.152	0.1	711.74	1080
301	Ti2**15-***-0606-*****-**	06	06	36	38	0.152	0.1	711.74	2160
302	Ti2**15-***-1204-*****-**	12	04	48	51	0.203	0.1	711.74	1440
303	Ti2**15-***-0608-*****-**	06	08	48	51	0.203	0.1	711.74	2880
304	Ti2**15-***-1301-*****-**	13	01	13	14	0.055	0.1	711.74	360
305	Ti2**15-***-1302-*****-**	13	02	26	28	0.110	0.1	711.74	720
306	Ti2**15-***-1303-*****-**	13	03	39	41	0.165	0.1	711.74	1080

307	Ti2**15-***-1304-*****-**	13	04	52	55	0.220	0.1	711.74	1440
308	Ti2**18-***-1203-*****-**	12	03	36	38	0.120	0.1	711.74	1080
309	Ti2**18-***-0606-*****-**	06	06	36	38	0.120	0.1	711.74	2160
310	Ti2**18-***-1204-*****-**	12	04	48	51	0.160	0.1	711.74	1440
311	Ti2**18-***-0608-*****-**	06	08	48	51	0.160	0.1	711.74	2880
312	Ti2**18-***-1205-*****-**	12	05	60	64	0.200	0.1	711.74	1800
313	Ti2**18-***-1206-*****-**	12	06	72	76	0.240	0.1	711.74	2160
314	Ti2**18-***-1207-*****-**	12	07	84	89	0.280	0.1	711.74	2520
315	Ti2**18-***-1208-*****-**	12	08	96	102	0.320	0.1	711.74	2880
316	Ti2**18-***-1209-*****-**	12	09	108	102	0.320	0.1	632.65	2880
317	Ti2**18-***-1210-*****-**	12	10	120	101	0.317	0.1	563.46	2850
318	Ti2**18-***-1303-*****-**	13	03	39	41	0.130	0.1	711.74	1080
319	Ti2**18-***-1304-*****-**	13	04	52	55	0.173	0.1	711.74	1440
320	Ti2**18-***-1305-*****-**	13	05	65	69	0.217	0.1	711.74	1800
321	Ti2**18-***-1306-*****-**	13	06	78	83	0.260	0.1	711.74	2160
322	Ti2**18-***-1307-*****-**	13	07	91	97	0.303	0.1	711.74	2520
323	Ti2**18-***-1308-*****-**	13	08	104	101	0.318	0.1	652.42	2640
324	Ti2**18-***-1309-*****-**	13	09	117	100	0.314	0.1	573.34	2610
325	Ti2**18-***-1310-*****-**	13	10	130	100	0.313	0.1	514.03	2600
326	Ti2**19-***-1203-*****-**	12	03	36	38	0.106	0.1	711.74	1080
327	Ti2**19-***-0606-*****-**	06	06	36	38	0.106	0.1	711.74	2160
328	Ti2**19-***-1204-*****-**	12	04	48	51	0.141	0.1	711.74	1440
329	Ti2**19-***-0608-*****-**	06	08	48	51	0.141	0.1	711.74	2880
330	Ti2**19-***-1205-*****-**	12	05	60	64	0.177	0.1	711.74	1800
331	Ti2**19-***-1206-*****-**	12	06	72	76	0.212	0.1	711.74	2160
332	Ti2**19-***-1207-*****-**	12	07	84	89	0.247	0.1	711.74	2520
333	Ti2**19-***-1208-*****-**	12	08	96	102	0.282	0.1	711.74	2880
334	Ti2**19-***-1209-*****-**	12	09	108	115	0.318	0.1	711.74	3240
335	Ti2**19-***-1210-*****-**	12	10	120	113	0.314	0.1	632.65	3200
336	Ti2**19-***-1211-*****-**	12	11	132	113	0.313	0.1	573.34	3190
337	Ti2**19-***-1212-*****-**	12	12	144	115	0.318	0.1	533.80	3240
338	Ti2**19-***-1213-*****-**	12	13	156	115	0.319	0.1	494.26	3250
339	Ti2**19-***-1214-*****-**	12	14	168	114	0.316	0.1	454.72	3220
340	Ti2**19-***-1215-*****-**	12	15	180	114	0.316	0.1	425.06	3225
341	Ti2**19-***-1303-*****-**	13	03	39	41	0.115	0.1	711.74	1080
342	Ti2**19-***-1304-*****-**	13	04	52	55	0.153	0.1	711.74	1440
343	Ti2**19-***-1305-*****-**	13	05	65	69	0.191	0.1	711.74	1800
344	Ti2**19-***-1306-*****-**	13	06	78	83	0.229	0.1	711.74	2160
345	Ti2**19-***-1307-*****-**	13	07	91	97	0.268	0.1	711.74	2520

346	Ti2**19-***-1308-*****-**	13	08	104	110	0.306	0.1	711.74	2880
347	Ti2**19-***-1309-*****-**	13	09	117	114	0.316	0.1	652.42	2970
348	Ti2**19-***-1310-*****-**	13	10	130	115	0.319	0.1	593.11	3000
349	Ti2**19-***-1311-*****-**	13	11	143	114	0.316	0.1	533.80	2970
350	Ti2**19-***-1312-*****-**	13	12	156	115	0.319	0.1	494.26	3000
351	Ti2**19-***-1313-*****-**	13	13	169	115	0.318	0.1	454.72	2990
352	Ti2**24-***-1205-*****-**	12	05	60	64	0.112	0.1	711.74	1800
353	Ti2**24-***-1206-*****-**	12	06	72	76	0.134	0.1	711.74	2160
354	Ti2**24-***-1207-*****-**	12	07	84	89	0.157	0.1	711.74	2520
355	Ti2**24-***-1208-*****-**	12	08	96	102	0.179	0.1	711.74	2880
356	Ti2**24-***-1209-*****-**	12	09	108	115	0.202	0.1	711.74	3240
357	Ti2**24-***-1210-*****-**	12	10	120	127	0.224	0.1	711.74	3600
358	Ti2**24-***-1211-*****-**	12	11	132	140	0.246	0.1	711.74	3960
359	Ti2**24-***-1212-*****-**	12	12	144	153	0.269	0.1	711.74	4320
360	Ti2**24-***-1213-*****-**	12	13	156	166	0.291	0.1	711.74	4680
361	Ti2**24-***-1214-*****-**	12	14	168	178	0.314	0.1	711.74	5040
362	Ti2**24-***-1215-*****-**	12	15	180	181	0.317	0.1	672.20	5100
363	Ti2**24-***-1216-*****-**	12	16	192	181	0.319	0.1	632.65	5120
364	Ti2**24-***-1217-*****-**	12	17	204	181	0.317	0.1	593.11	5100
365	Ti2**24-***-1218-*****-**	12	18	216	178	0.314	0.1	553.57	5040
366	Ti2**24-***-1305-*****-**	13	05	65	69	0.121	0.1	711.74	1800
367	Ti2**24-***-1306-*****-**	13	06	78	83	0.146	0.1	711.74	2160
368	Ti2**24-***-1307-*****-**	13	07	91	97	0.170	0.1	711.74	2520
369	Ti2**24-***-1308-*****-**	13	08	104	110	0.194	0.1	711.74	2880
370	Ti2**24-***-1309-*****-**	13	09	117	124	0.218	0.1	711.74	3240
371	Ti2**24-***-1310-*****-**	13	10	130	138	0.243	0.1	711.74	3600
372	Ti2**24-***-1311-*****-**	13	11	143	152	0.267	0.1	711.74	3960
373	Ti2**24-***-1312-*****-**	13	12	156	166	0.291	0.1	711.74	4320
374	Ti2**24-***-1313-*****-**	13	13	169	179	0.316	0.1	711.74	4680
375	Ti2**24-***-1314-*****-**	13	14	182	177	0.311	0.1	652.42	4620
376	Ti2**24-***-1315-*****-**	13	15	195	178	0.314	0.1	612.88	4650
377	Ti2**24-***-1316-*****-**	13	16	208	178	0.313	0.1	573.34	4640
378	Ti2**28-***-1208-*****-**	12	08	96	102	0.130	0.1	711.74	2880
379	Ti2**28-***-1209-*****-**	12	09	108	115	0.146	0.1	711.74	3240
380	Ti2**28-***-1210-*****-**	12	10	120	127	0.163	0.1	711.74	3600
381	Ti2**28-***-1211-*****-**	12	11	132	140	0.179	0.1	711.74	3960
382	Ti2**28-***-1212-*****-**	12	12	144	153	0.195	0.1	711.74	4320
383	Ti2**28-***-1213-*****-**	12	13	156	166	0.211	0.1	711.74	4680
384	Ti2**28-***-1214-*****-**	12	14	168	178	0.228	0.1	711.74	5040

385	Ti2**28-***-1215-*****-**	12	15	180	191	0.244	0.1	711.74	5400
386	Ti2**28-***-1216-*****-**	12	16	192	204	0.260	0.1	711.74	5760
387	Ti2**28-***-1217-*****-**	12	17	204	217	0.276	0.1	711.74	6120
388	Ti2**28-***-1218-*****-**	12	18	216	229	0.293	0.1	711.74	6480
389	Ti2**28-***-1308-*****-**	13	08	104	110	0.141	0.1	711.74	2880
390	Ti2**28-***-1309-*****-**	13	09	117	124	0.158	0.1	711.74	3240
391	Ti2**28-***-1310-*****-**	13	10	130	138	0.176	0.1	711.74	3600
392	Ti2**28-***-1311-*****-**	13	11	143	152	0.194	0.1	711.74	3960
393	Ti2**28-***-1312-*****-**	13	12	156	166	0.211	0.1	711.74	4320
394	Ti2**28-***-1313-*****-**	13	13	169	179	0.229	0.1	711.74	4680
395	Ti2**28-***-1314-*****-**	13	14	182	193	0.247	0.1	711.74	5040
396	Ti2**28-***-1315-*****-**	13	15	195	207	0.264	0.1	711.74	5400
397	Ti2**28-***-1316-*****-**	13	16	208	221	0.282	0.1	711.74	5760
398	Ti2**28-***-1812-*****-**	18	12	216	229	0.293	0.1	711.74	4320
399	Ti3**13-***-0601-*****-**	06	01	6	9	0.050	0.1	711.66	500
400	Ti3**13-***-0701-*****-**	07	01	7	10	0.058	0.1	711.66	500
401	Ti3**13-***-0801-*****-**	08	01	8	12	0.066	0.1	711.66	500
402	Ti3**13-***-1201-*****-**	12	01	12	18	0.099	0.1	711.66	500
403	Ti3**13-***-0602-*****-**	06	02	12	18	0.099	0.1	711.66	1000
404	Ti3**13-***-1202-*****-**	12	02	24	35	0.199	0.1	711.66	1000
405	Ti3**13-***-0604-*****-**	06	04	24	35	0.199	0.1	711.66	2000
406	Ti3**13-***-1203-*****-**	12	03	36	53	0.298	0.1	711.66	1500
407	Ti3**13-***-0606-*****-**	06	06	36	53	0.298	0.1	711.66	3000
408	Ti3**13-***-1204-*****-**	12	04	48	57	0.318	0.1	569.33	1600
409	Ti3**13-***-0608-*****-**	06	08	48	57	0.318	0.1	569.33	3200
410	Ti3**13-***-1301-*****-**	13	01	13	19	0.108	0.1	711.66	500
411	Ti3**13-***-1302-*****-**	13	02	26	38	0.215	0.1	711.66	1000
412	Ti3**13-***-1303-*****-**	13	03	39	56	0.316	0.1	697.43	1470
413	Ti3**13-***-1304-*****-**	13	04	52	57	0.318	0.1	526.63	1480
414	Ti3**16-***-0601-*****-**	06	01	6	9	0.035	0.1	711.66	500
415	Ti3**16-***-0701-*****-**	07	01	7	10	0.041	0.1	711.66	500
416	Ti3**16-***-0801-*****-**	08	01	8	12	0.047	0.1	711.66	500
417	Ti3**16-***-1201-*****-**	12	01	12	18	0.070	0.1	711.66	500
418	Ti3**16-***-0602-*****-**	06	02	12	18	0.070	0.1	711.66	1000
419	Ti3**16-***-1202-*****-**	12	02	24	35	0.141	0.1	711.66	1000
420	Ti3**16-***-0604-*****-**	06	04	24	35	0.141	0.1	711.66	2000
421	Ti3**16-***-1203-*****-**	12	03	36	53	0.211	0.1	711.66	1500
422	Ti3**16-***-0606-*****-**	06	06	36	53	0.211	0.1	711.66	3000
423	Ti3**16-***-1204-*****-**	12	04	48	71	0.282	0.1	711.66	2000

424	Ti3**16-***-0608-*****-**	06	08	48	71	0.282	0.1	711.66	4000
425	Ti3**16-***-1301-*****-**	13	01	13	19	0.076	0.1	711.66	500
426	Ti3**16-***-1302-*****-**	13	02	26	38	0.153	0.1	711.66	1000
427	Ti3**16-***-1303-*****-**	13	03	39	58	0.229	0.1	711.66	1500
428	Ti3**16-***-1304-*****-**	13	04	52	77	0.305	0.1	711.66	2000
429	Ti3**18-***-1203-*****-**	12	03	36	53	0.167	0.1	711.66	1500
430	Ti3**18-***-0606-*****-**	06	06	36	53	0.167	0.1	711.66	3000
431	Ti3**18-***-1204-*****-**	12	04	48	71	0.222	0.1	711.66	2000
432	Ti3**18-***-0608-*****-**	06	08	48	71	0.222	0.1	711.66	4000
433	Ti3**18-***-1205-*****-**	12	05	60	89	0.278	0.1	711.66	2500
434	Ti3**18-***-1206-*****-**	12	06	72	102	0.320	0.1	683.20	2880
435	Ti3**18-***-1207-*****-**	12	07	84	102	0.319	0.1	583.56	2870
436	Ti3**18-***-1208-*****-**	12	08	96	102	0.320	0.1	512.40	2880
437	Ti3**18-***-1209-*****-**	12	09	108	102	0.320	0.1	455.46	2880
438	Ti3**18-***-1210-*****-**	12	10	120	101	0.317	0.1	405.65	2850
439	Ti3**18-***-1303-*****-**	13	03	39	58	0.181	0.1	711.66	1500
440	Ti3**18-***-1304-*****-**	13	04	52	77	0.241	0.1	711.66	2000
441	Ti3**18-***-1305-*****-**	13	05	65	96	0.301	0.1	711.66	2500
442	Ti3**18-***-1306-*****-**	13	06	78	101	0.318	0.1	626.26	2640
443	Ti3**18-***-1307-*****-**	13	07	91	102	0.320	0.1	540.86	2660
444	Ti3**18-***-1308-*****-**	13	08	104	101	0.318	0.1	469.70	2640
445	Ti3**18-***-1309-*****-**	13	09	117	100	0.314	0.1	412.76	2610
446	Ti3**19-***-1203-*****-**	12	03	36	53	0.147	0.1	711.66	1500
447	Ti3**19-***-0606-*****-**	06	06	36	53	0.147	0.1	711.66	3000
448	Ti3**19-***-1204-*****-**	12	04	48	71	0.196	0.1	711.66	2000
449	Ti3**19-***-0608-*****-**	06	08	48	71	0.196	0.1	711.66	4000
450	Ti3**19-***-1205-*****-**	12	05	60	89	0.245	0.1	711.66	2500
451	Ti3**19-***-1206-*****-**	12	06	72	106	0.294	0.1	711.66	3000
452	Ti3**19-***-1207-*****-**	12	07	84	114	0.316	0.1	654.73	3220
453	Ti3**19-***-1208-*****-**	12	08	96	113	0.314	0.1	569.33	3200
454	Ti3**19-***-1209-*****-**	12	09	108	115	0.318	0.1	512.40	3240
455	Ti3**19-***-1210-*****-**	12	10	120	113	0.314	0.1	455.46	3200
456	Ti3**19-***-1211-*****-**	12	11	132	113	0.313	0.1	412.76	3190
457	Ti3**19-***-1212-*****-**	12	12	144	115	0.318	0.1	384.30	3240
458	Ti3**19-***-1213-*****-**	12	13	156	115	0.319	0.1	355.83	3250
459	Ti3**19-***-1214-*****-**	12	14	168	114	0.316	0.1	327.37	3220
460	Ti3**19-***-1215-*****-**	12	15	180	114	0.316	0.1	306.02	3225
461	Ti3**19-***-1303-*****-**	13	03	39	58	0.159	0.1	711.66	1500
462	Ti3**19-***-1304-*****-**	13	04	52	77	0.212	0.1	711.66	2000

463	Ti3**19-***-1305-*****-**	13	05	65	96	0.266	0.1	711.66	2500
464	Ti3**19-***-1306-*****-**	13	06	78	115	0.319	0.1	711.66	3000
465	Ti3**19-***-1307-*****-**	13	07	91	115	0.320	0.1	612.03	3010
466	Ti3**19-***-1308-*****-**	13	08	104	114	0.314	0.1	526.63	2960
467	Ti3**19-***-1309-*****-**	13	09	117	114	0.316	0.1	469.70	2970
468	Ti3**19-***-1310-*****-**	13	10	130	115	0.319	0.1	427.00	3000
469	Ti3**19-***-1311-*****-**	13	11	143	114	0.316	0.1	384.30	2970
470	Ti3**19-***-1312-*****-**	13	12	156	115	0.319	0.1	355.83	3000
471	Ti3**19-***-1313-*****-**	13	13	169	115	0.318	0.1	327.37	2990
472	Ti3**24-***-1205-*****-**	12	05	60	89	0.156	0.1	711.66	2500
473	Ti3**24-***-1206-*****-**	12	06	72	106	0.187	0.1	711.66	3000
474	Ti3**24-***-1207-*****-**	12	07	84	124	0.218	0.1	711.66	3500
475	Ti3**24-***-1208-*****-**	12	08	96	142	0.249	0.1	711.66	4000
476	Ti3**24-***-1209-*****-**	12	09	108	159	0.280	0.1	711.66	4500
477	Ti3**24-***-1210-*****-**	12	10	120	177	0.311	0.1	711.66	5000
478	Ti3**24-***-1211-*****-**	12	11	132	179	0.315	0.1	654.73	5060
479	Ti3**24-***-1212-*****-**	12	12	144	178	0.314	0.1	597.80	5040
480	Ti3**24-***-1213-*****-**	12	13	156	179	0.316	0.1	555.10	5070
481	Ti3**24-***-1214-*****-**	12	14	168	178	0.314	0.1	512.40	5040
482	Ti3**24-***-1215-*****-**	12	15	180	181	0.317	0.1	483.93	5100
483	Ti3**24-***-1216-*****-**	12	16	192	181	0.319	0.1	455.46	5120
484	Ti3**24-***-1217-*****-**	12	17	204	181	0.317	0.1	427.00	5100
485	Ti3**24-***-1218-*****-**	12	18	216	178	0.314	0.1	398.53	5040
486	Ti3**24-***-1305-*****-**	13	05	65	96	0.169	0.1	711.66	2500
487	Ti3**24-***-1306-*****-**	13	06	78	115	0.202	0.1	711.66	3000
488	Ti3**24-***-1307-*****-**	13	07	91	134	0.236	0.1	711.66	3500
489	Ti3**24-***-1308-*****-**	13	08	104	153	0.270	0.1	711.66	4000
490	Ti3**24-***-1309-*****-**	13	09	117	173	0.303	0.1	711.66	4500
491	Ti3**24-***-1310-*****-**	13	10	130	180	0.317	0.1	668.96	4700
492	Ti3**24-***-1311-*****-**	13	11	143	181	0.319	0.1	612.03	4730
493	Ti3**24-***-1312-*****-**	13	12	156	179	0.316	0.1	555.10	4680
494	Ti3**24-***-1313-*****-**	13	13	169	179	0.316	0.1	512.40	4680
495	Ti3**24-***-1314-*****-**	13	14	182	177	0.311	0.1	469.70	4620
496	Ti3**24-***-1315-*****-**	13	15	195	178	0.314	0.1	441.23	4650
497	Ti3**24-***-1316-*****-**	13	16	208	178	0.313	0.1	412.76	4640
498	Ti3**28-***-1208-*****-**	12	08	96	142	0.181	0.1	711.66	4000
499	Ti3**28-***-1209-*****-**	12	09	108	159	0.203	0.1	711.66	4500
500	Ti3**28-***-1210-*****-**	12	10	120	177	0.226	0.1	711.66	5000
501	Ti3**28-***-1211-*****-**	12	11	132	195	0.248	0.1	711.66	5500

502	Ti3**28-***-1212-*****-**	12	12	144	212	0.271	0.1	711.66	6000
503	Ti3**28-***-1213-*****-**	12	13	156	230	0.293	0.1	711.66	6500
504	Ti3**28-***-1214-*****-**	12	14	168	248	0.316	0.1	711.66	7000
505	Ti3**28-***-1215-*****-**	12	15	180	250	0.318	0.1	668.96	7050
506	Ti3**28-***-1216-*****-**	12	16	192	249	0.318	0.1	626.26	7040
507	Ti3**28-***-1217-*****-**	12	17	204	247	0.315	0.1	583.56	6970
508	Ti3**28-***-1218-*****-**	12	18	216	249	0.317	0.1	555.10	7020
509	Ti3**28-***-1308-*****-**	13	08	104	153	0.196	0.1	711.66	4000
510	Ti3**28-***-1309-*****-**	13	09	117	173	0.220	0.1	711.66	4500
511	Ti3**28-***-1310-*****-**	13	10	130	192	0.245	0.1	711.66	5000
512	Ti3**28-***-1311-*****-**	13	11	143	211	0.269	0.1	711.66	5500
513	Ti3**28-***-1312-*****-**	13	12	156	230	0.293	0.1	711.66	6000
514	Ti3**28-***-1313-*****-**	13	13	169	249	0.318	0.1	711.66	6500
515	Ti3**28-***-1314-*****-**	13	14	182	247	0.315	0.1	654.73	6440
516	Ti3**28-***-1315-*****-**	13	15	195	247	0.316	0.1	612.03	6450
517	Ti3**28-***-1316-*****-**	13	16	208	245	0.313	0.1	569.33	6400
518	Ti3**28-***-1812-*****-**	18	12	216	249	0.317	0.1	555.10	4680

Identifiers Information:

Code rule 1:

Ti1**13-***-1301-*** **-**

1 2 3 4 5

1.Product light emitting surface size,can be from: 01~99;
2.Power,can be from: 001~999;
3.Internal code,can be from: A22,A25,A27,…,ZZZ;
4.Internal code,can be from: 65/70/75/80/85/90/95/97/98;
5.Internal code,can be from: 00~99.

Code rule 2:

TW883L-010-1201*** **-1201*** **-***

1 2 3 4 5

1.Internal code,can be from: A22,A25,A27,…,ZZZ;
2.Internal code,can be from: 65/70/75/80/85/90/95/97/98;
3.Internal code,can be from: A22,A25,A27,…,ZZZ;
4.Internal code,can be from: 65/70/75/80/85/90/95/97/98;
5.Internal code,can be from: 000~999.

Code rule 3:

HV183E-24-005-0703-*** **-***

1 2 3

1.Internal code,can be from: A22,A25,A27,…,ZZZ;
2.Internal code,can be from: 65/70/75/80/85/90/95/97/98;
3.Internal code,can be from: 000~999.

EUT Characteristics	
Total input power(W):	251
Average current density per LED die(mA/mm^2):	712.44
Average Power density per LED die(W/mm^2):	2.102
Representative CRI(Ra) of the tested sample set: (Indicate whether the reported value is the mean or median value of the sample set, or per unit)	90
Minimum die edge to die edge spacing(mm)	0.1
Note: testing was conducted in accordance with the testing method outlined in ANSI/IES LM-80-21.	

Apparatus			
BEST ID#	Name	Cal date	Cal Due date
B128	Oven	December 12, 2025	December 11, 2026
B131	AC Source	May 18, 2025	May 17, 2026
B159	Spectrum radiometer	N/A	N/A
B168	DC Source	May 18, 2025	May 17, 2026
B125	Integrating Sphere	Calibrated before measurement	N/A
B196	Integrating Sphere Temperature Control	December 12, 2025	December 11, 2026
B080	Multimeter	Calibrated before measurement	N/A
B078	Standard Light Source	October 23, 2020	Every 50 hours life
B230	Temperature and Humidity Meter	December 8, 2025	December 7, 2026
B186	Digital CC DC Power Supply	December 12, 2025	December 11, 2026
B189	AC Source	N/A	N/A
B178	Spectroradiometer	Calibrated before measurement	N/A
B174	Integral Sphere	Calibrated before measurement	N/A
B087	Digital Power Meter	December 17, 2025	December 16, 2026
B161	Temperature Meter	December 12, 2025	December 11, 2026
B184	Aux Lamp DC Source	N/A	N/A
B118	Second Meter	December 16, 2025	December 15, 2026

Uncertainty	
Temperature	±0.4℃
Humidity	±2.6%
AC Voltage	±0.11%
AC Current	±0.14%
Power≥1W	±0.20%
Power＜1W	±0.02 W
luminous flux(φ)	±1.6%
DC Voltage	±0.1%
DC Current	±0.1%
Life Time	±0.2 h

End of report