

DATE	PROJECT	FIRM	TYPE
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PHOTOMETRY CHARACTERISTICS

Photometric testing done by an independent lab in accordance with current IES published Procedures . Lumen measurements comply with IES LM-79 - 08. Some IES files are generated by multiplying tested IES files with a calculated lumen values . IES data is available at www.ecosenselighting.com

80 CRI

L90 5W

	10°x10°	15°x40°	ASYM
2700K			
Lumens	435	454	441
Efficacy	94	95	92
CBCP	4,476	626	397
3000K			
Lumens	478	479	465
Efficacy	100	100	97
CBCP	5,087	760	458
3500K			
Lumens	485	486	472
Efficacy	101	101	98
CBCP	4,791	771	456
4000K			
Lumens	507	508	493
Efficacy	106	106	103
CBCP	5,004	806	444

L90 9W

	10°x10°	15°x40°	ASYM
2700K			
Lumens	736	738	716
Efficacy	87	87	84
CBCP	7,269	1,170	645
3000K			
Lumens	776	778	756
Efficacy	91	92	89
CBCP	7,667	1,235	680
3500K			
Lumens	788	790	767
Efficacy	93	93	90
CBCP	7,781	1,252	691
4000K			
Lumens	823	825	801
Efficacy	97	97	94
CBCP	8,127	1,309	721

90 CRI

L90 5W

	10°x10°	15°x40°	ASYM
2700K			
Lumens	393	394	383
Efficacy	82	82	80
CBCP	3,886	720	366
3000K			
Lumens	415	416	404
Efficacy	86	87	84
CBCP	4,124	663	363
3500K			
Lumens	421	422	410
Efficacy	88	88	85
CBCP	3,420	670	272
4000K			
Lumens	440	441	428
Efficacy	92	92	89
CBCP	4,345	700	385

L90 9W

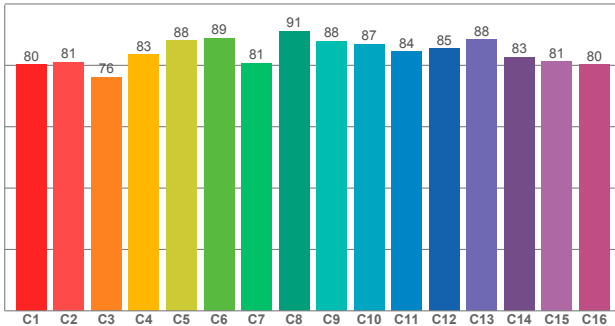
	10°x10°	15°x40°	ASYM
2700K			
Lumens	639	641	622
Efficacy	75	75	73
CBCP	6,311	1,016	560
3000K			
Lumens	674	676	656
Efficacy	79	79	77
CBCP	6,018	1,072	477
3500K			
Lumens	684	686	666
Efficacy	80	81	78
CBCP	6,371	1,088	492
4000K			
Lumens	714	716	696
Efficacy	84	84	82
CBCP	7,056	1,137	626

NOTE: Information on this Spec Sheet is subject to change, please visit the website for most updated information.

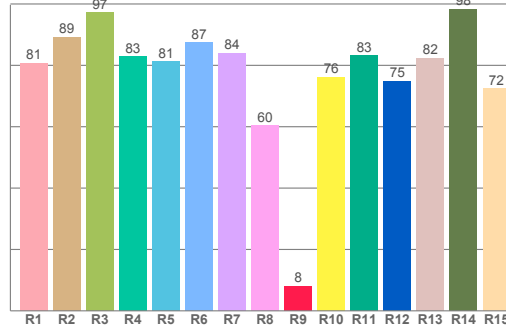
DATE	PROJECT	FIRM	TYPE
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L09-E-012-05-30-80-CV24-10X10 (5 Watt, 3000K, 80 CRI, 10X10)

TM30: 84.0



CRI: 82.8 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
80.80	89.18	97.12	82.81	81.15	87.46	83.90	60.31	8.15	76.19	83.20	74.81	82.44	98.41	72.45

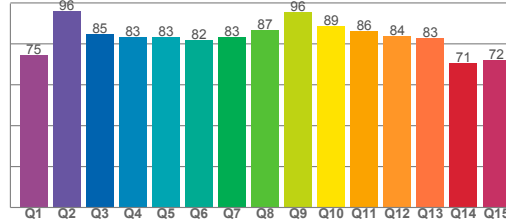
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
80.30	81.00	76.14	83.45	88.05	88.91	80.80	91.21	87.85	86.87	84.46	85.44	88.34	82.73	81.18	80.25

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
74.72	96.10	84.73	83.20	83.33	81.69	83.21	86.75	95.74	88.60	86.41	84.03	82.87	70.64	71.97

CQS: 82.0

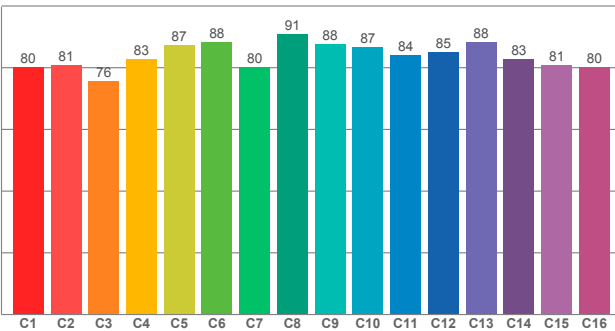


Color parameters

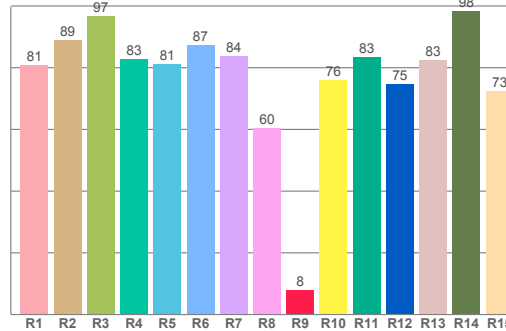
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
2954 K	82.8	8.1	84.0	98.2	82.0	0.4	0.4	0.3	0.3	0.0009

L09-E-012-05-30-80-CV24-ASYM (5 Watt, 3000K, 80 CRI, ASYM)

TM30: 83.7



CRI: 82.8 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
80.90	89.10	96.90	82.93	81.28	87.36	83.82	60.39	7.87	75.97	83.46	74.79	82.50	98.26	72.55

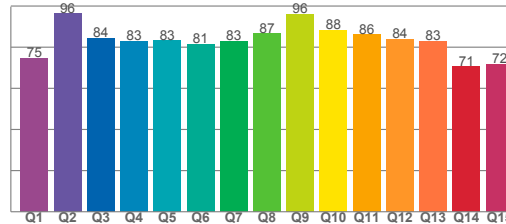
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
80.23	80.86	75.65	82.71	87.40	88.30	80.19	90.83	87.55	86.68	84.14	85.10	88.26	82.77	81.01	80.21

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
74.51	96.34	84.33	83.01	83.20	81.42	82.99	86.60	95.87	88.23	86.05	83.76	82.75	70.56	71.83

CQS: 81.8

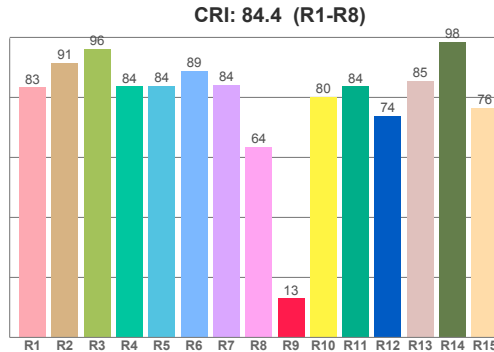
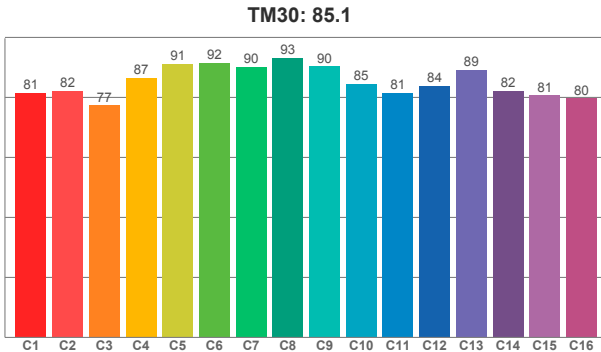


Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
2989 K	82.8	7.9	83.7	98.6	81.8	0.4	0.4	0.3	0.3	0.0005

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L09-E-012-05-35-80-CV24-ASYM (5 Watt, 3500K, 80 CRI, ASYM)



CRI R values, only R1-R8 are used to calculate final CRI value

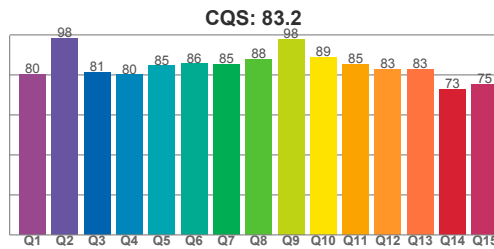
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
83.37	91.45	96.24	83.69	83.95	88.92	84.21	63.58	13.00	80.18	83.71	73.90	85.40	98.40	76.45

TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81.50	82.17	77.31	86.52	91.11	91.52	90.08	93.20	90.32	84.55	81.49	83.83	89.22	82.22	80.64	79.69

CQS Q values

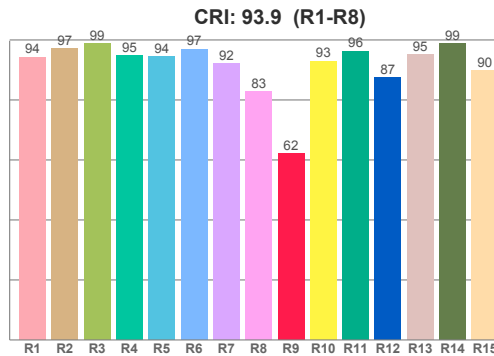
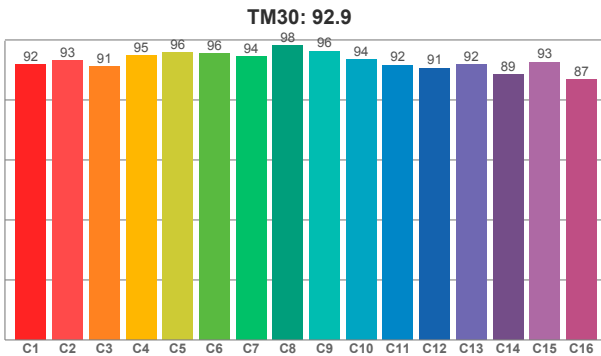
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.28	98.30	81.28	80.11	84.62	85.57	85.46	87.96	97.80	88.80	85.23	82.95	82.71	72.91	75.31



Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
3458 K	84.4	13.0	85.1	97.7	83.2	0.4	0.4	0.2	0.3	-0.0030

L09-E-012-05-27-90-CV24-ASYM (5 Watt, 2700K, 90 CRI, ASYM)



CRI R values, only R1-R8 are used to calculate final CRI value

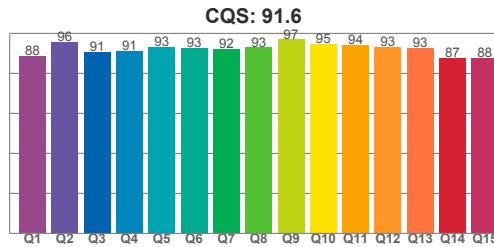
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
94.28	97.21	98.79	94.72	94.38	96.97	92.20	82.84	62.18	92.95	96.30	87.50	95.14	98.72	89.85

TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91.77	93.08	91.02	94.86	95.88	95.52	94.44	98.14	96.23	93.53	91.61	90.62	91.74	88.51	92.59	86.81

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
88.44	95.52	90.65	91.29	93.39	92.81	91.96	92.90	96.94	94.51	93.95	93.16	92.72	87.48	87.59



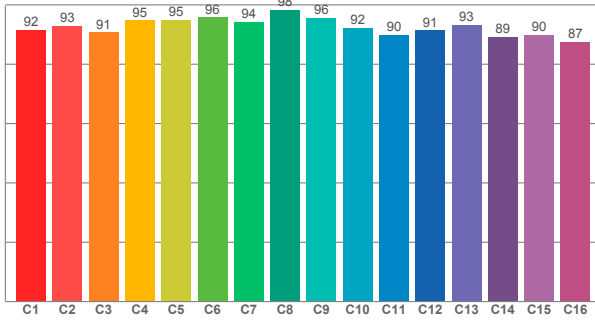
Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
2801 K	93.9	62.2	92.9	100.0	91.6	0.5	0.4	0.3	0.3	-0.0005

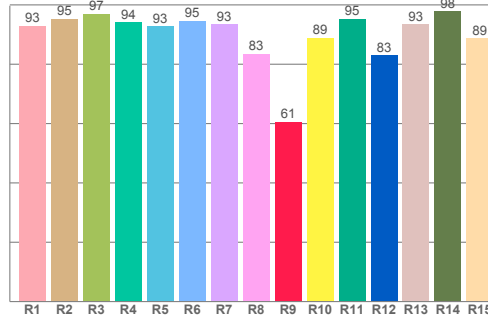
DATE	PROJECT	FIRM	TYPE
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L09-E-012-05-30-90-CV24-10X10 (5 Watt, 3000K, 90 CRI, 10X10)

TM30: 92.7



CRI: 93.0 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
92.94	95.38	97.07	94.11	92.71	94.56	93.44	83.45	60.55	88.83	95.17	82.93	93.45	97.78	88.75

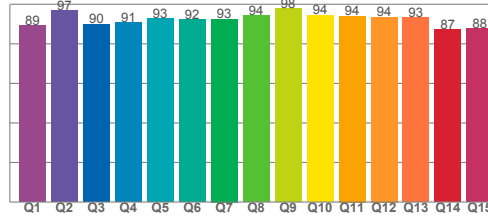
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91.53	92.93	90.67	94.74	94.95	95.80	94.36	98.23	95.63	92.20	89.96	91.40	93.14	89.23	89.96	87.49

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89.05	96.77	89.87	90.65	92.60	92.21	92.56	94.16	97.78	94.37	94.08	93.58	93.18	87.16	87.72

CQS: 91.7

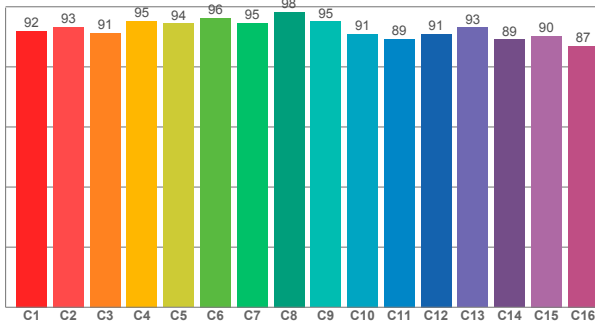


Color parameters

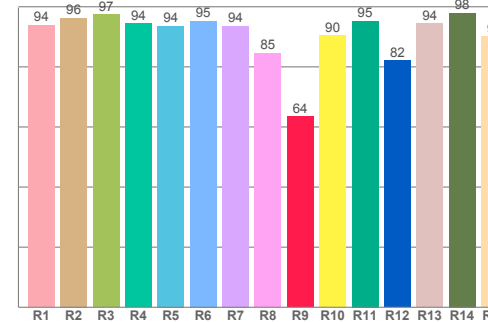
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
3102 K	93.0	60.5	92.7	99.9	91.7	0.4	0.4	0.2	0.3	0.0010

L09-E-012-05-30-90-CV24-15X40 (5 Watt, 3000K, 90 CRI, 15X40)

TM30: 92.6



CRI: 93.6 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
93.84	96.22	97.45	94.44	93.53	95.20	93.55	84.52	63.54	90.43	95.34	82.06	94.46	97.98	90.08

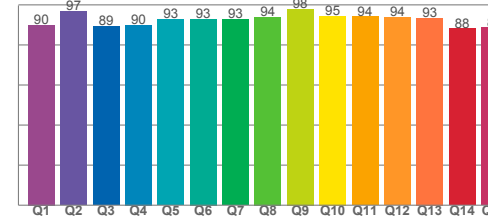
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91.90	93.34	91.21	95.23	94.47	96.25	94.58	98.25	95.13	90.99	89.28	90.99	93.12	89.03	90.26	87.01

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89.86	96.77	89.32	89.86	92.77	93.02	92.70	94.03	97.90	94.51	94.07	93.73	93.46	88.18	88.66

CQS: 92.0

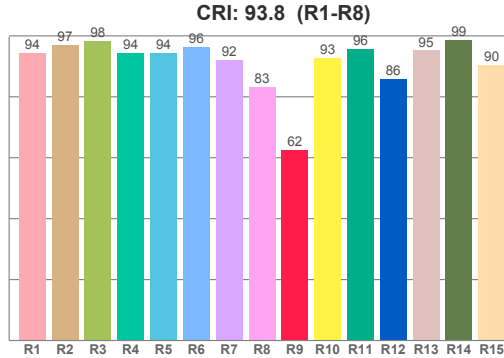
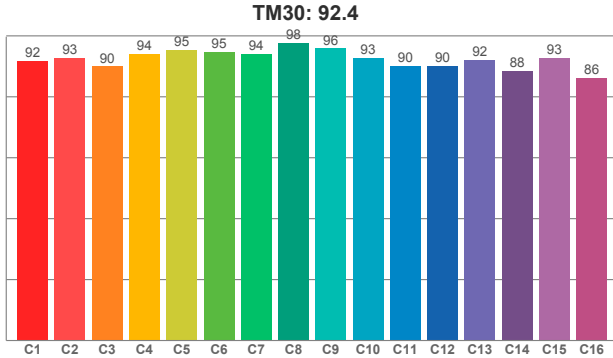


Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
3140 K	93.6	63.5	92.6	99.9	92.0	0.4	0.4	0.2	0.3	0.0003

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L09-E-012-05-30-90-CV24-ASYM (5 Watt, 3000K, 90 CRI, ASYM)



CRI R values, only R1-R8 are used to calculate final CRI value

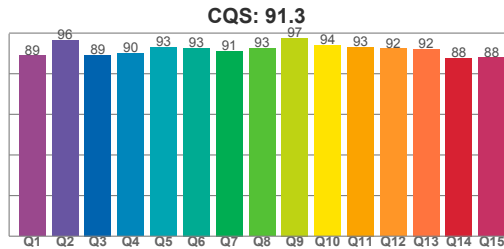
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
94.32	97.15	98.34	94.36	94.38	96.28	92.12	83.16	62.43	92.75	95.57	85.82	95.20	98.66	90.35

TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91.76	92.80	89.98	93.98	95.33	94.85	94.09	97.69	95.90	92.75	90.21	90.20	92.16	88.41	92.68	86.15

CQS Q values

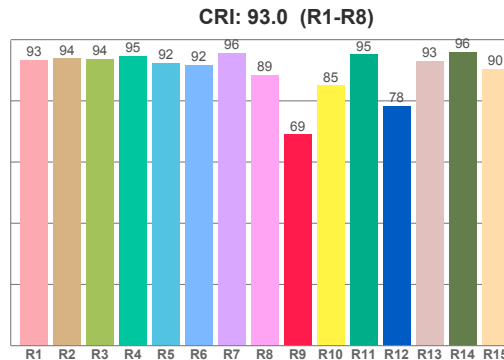
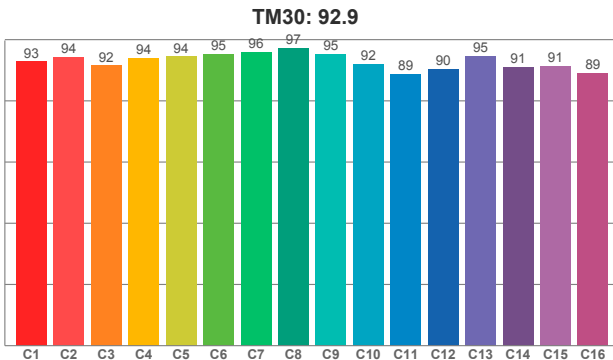
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
88.91	96.42	89.22	90.09	93.04	92.57	91.16	92.54	97.49	93.92	93.09	92.31	92.23	87.67	87.84



Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
2986 K	93.8	62.4	92.4	100.5	91.3	0.4	0.4	0.3	0.3	-0.0016

L09-E-012-05-35-90-CV24-10X10 (5 Watt, 3500K, 90 CRI, 10X10)



CRI R values, only R1-R8 are used to calculate final CRI value

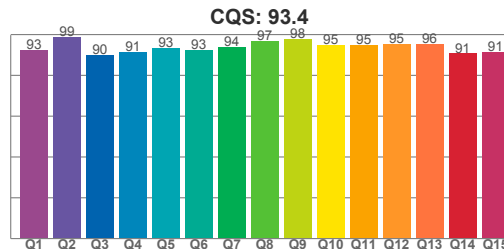
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
93.26	93.79	93.59	94.76	92.47	91.72	95.62	88.53	69.04	85.05	95.14	78.40	93.03	95.93	90.36

TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92.85	94.37	91.55	94.03	94.44	95.30	96.00	97.34	95.20	92.15	88.81	90.39	94.61	91.01	91.32	89.06

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
92.58	98.84	89.81	91.25	93.29	92.58	93.76	96.60	97.88	94.96	94.90	95.27	95.58	90.68	91.33

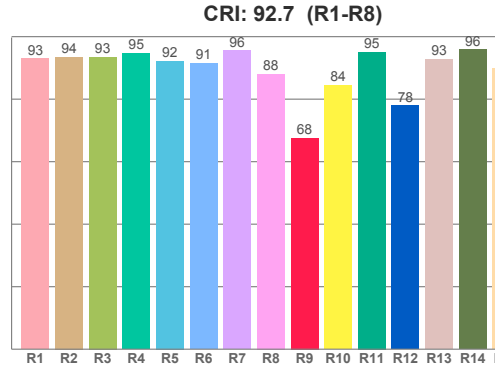
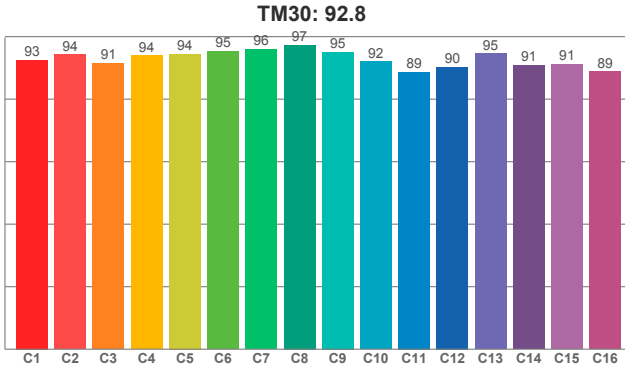


Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
3451 K	93.0	69.0	92.9	100.2	93.4	0.4	0.4	0.2	0.3	0.0028

DATE	PROJECT	FIRM	TYPE
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L09-E-012-05-35-90-CV24-ASYM (5 Watt, 3500K, 90 CRI, ASYM)



CRI R values, only R1-R8 are used to calculate final CRI value

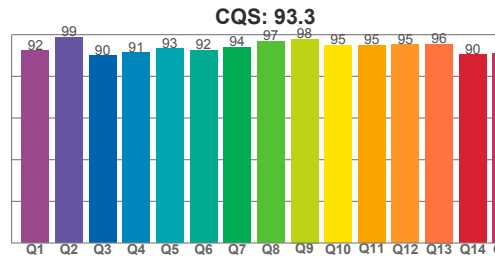
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
93.00	93.52	93.42	94.64	92.18	91.45	95.53	88.06	67.62	84.46	95.04	77.90	92.74	95.83	89.90

TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92.59	94.22	91.47	93.94	94.40	95.28	95.91	97.31	95.10	92.05	88.74	90.31	94.52	90.84	91.10	88.81

CQS Q values

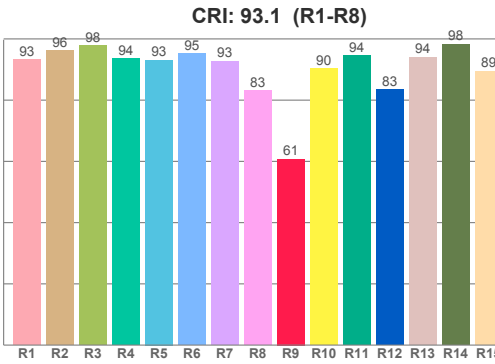
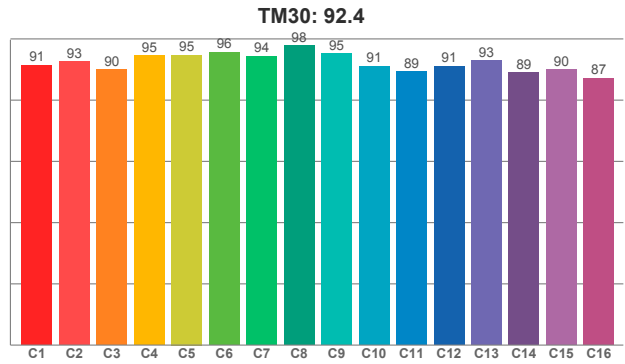
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
92.32	98.86	89.87	91.29	93.21	92.47	93.83	96.70	97.91	94.99	94.80	95.19	95.52	90.32	91.02



Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
3459 K	92.7	67.6	92.8	100.1	93.3	0.4	0.4	0.2	0.3	0.0032

L09-E-012-09-30-90-CV24-10X10 (9 Watt, 3000K, 90 CRI, 10X10)



CRI R values, only R1-R8 are used to calculate final CRI value

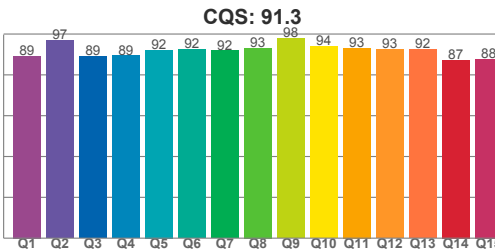
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
93.25	96.15	97.74	93.63	93.10	95.11	92.70	83.10	60.78	90.32	94.46	83.48	94.03	98.25	89.42

TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91.41	92.54	90.04	94.51	94.75	95.67	94.31	97.87	95.23	91.09	89.31	91.08	92.93	88.98	89.89	87.20

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89.21	96.90	89.02	89.36	92.20	92.44	91.87	93.21	97.84	93.88	93.10	92.57	92.41	87.27	87.77



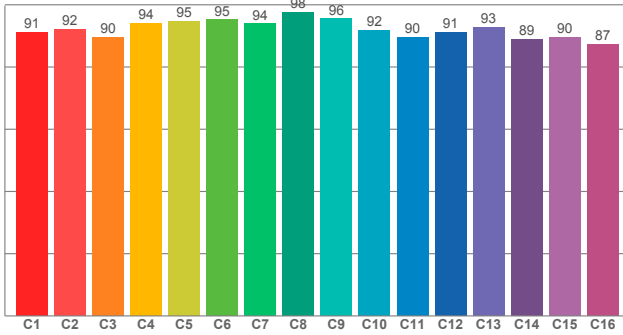
Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
3147 K	93.1	60.8	92.4	99.9	91.3	0.4	0.4	0.2	0.3	-0.0006

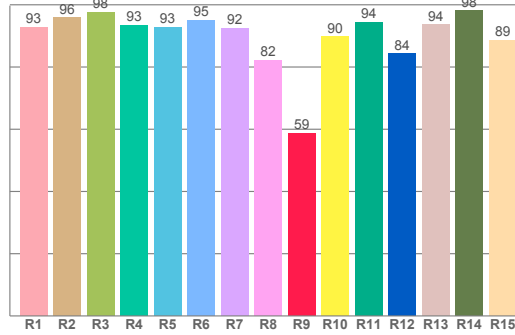
DATE	PROJECT	FIRM	TYPE
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L09-E-012-09-30-90-CV24-ASYM (9 Watt, 3000K, 90 CRI, ASYM)

TM30: 92.3



CRI: 92.8 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
92.86	95.81	97.66	93.48	92.77	94.98	92.42	82.23	58.67	89.68	94.46	84.25	93.61	98.18	88.71

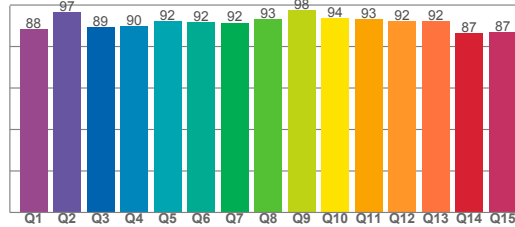
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91.12	92.21	89.56	94.11	94.77	95.19	93.90	97.66	95.52	91.80	89.64	91.12	92.73	88.87	89.51	87.29

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
88.49	96.82	89.20	89.75	92.17	91.96	91.56	93.06	97.74	93.68	93.02	92.44	92.19	86.58	87.06

CQS: 91.1

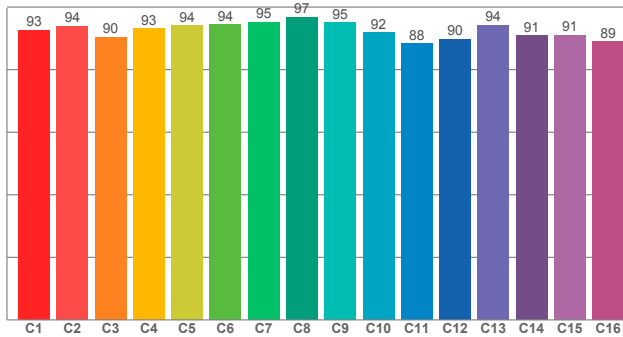


Color parameters

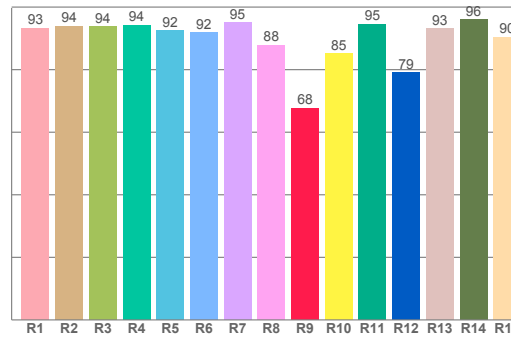
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
3107 K	92.8	58.7	92.3	100.0	91.1	0.4	0.4	0.2	0.3	-0.0004

L09-E-012-09-35-90-CV24-10X10 (9 Watt, 3500K, 90 CRI, 10X10)

TM30: 92.4



CRI: 92.7 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
93.17	93.91	93.71	94.24	92.43	91.78	94.96	87.75	67.70	85.14	94.59	79.04	93.06	95.97	90.34

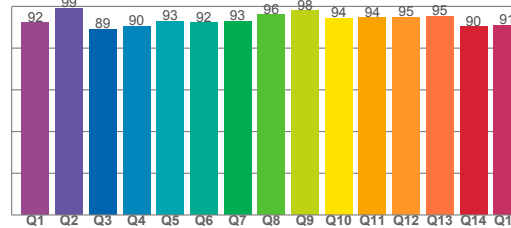
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92.61	93.84	90.36	93.03	94.05	94.43	95.26	96.82	95.04	91.84	88.34	89.76	94.24	90.81	90.98	88.97

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
92.18	99.00	88.95	90.44	92.90	92.14	92.78	95.91	97.87	94.20	94.48	94.86	95.18	90.31	90.88

CQS: 92.9

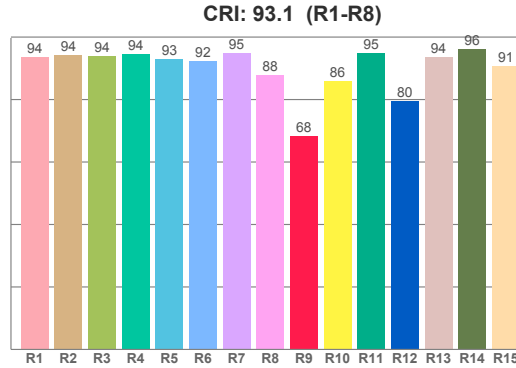
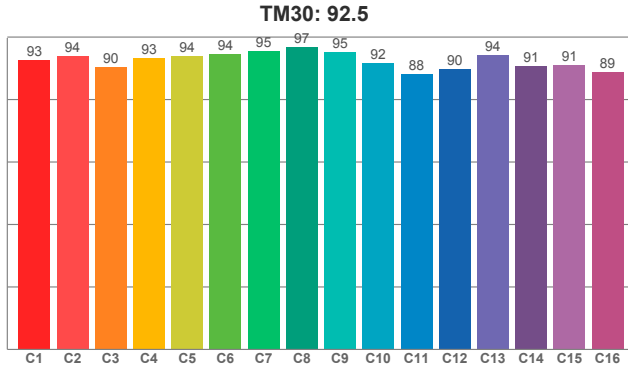


Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
3469 K	92.7	67.7	92.4	100.6	92.9	0.4	0.4	0.2	0.3	0.0017

DATE	PROJECT	FIRM	TYPE
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L09-E-012-09-35-90-CV24-ASYM (9 Watt, 3500K, 90 CRI, ASYM)



CRI R values, only R1-R8 are used to calculate final CRI value

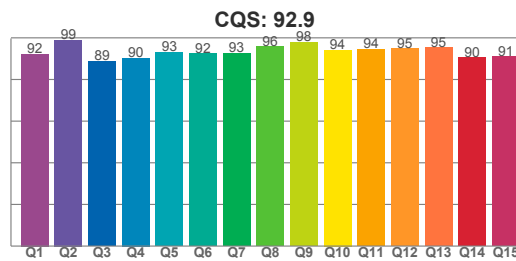
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
93.59	94.35	94.04	94.44	92.88	92.33	94.96	87.86	68.30	86.03	94.79	79.54	93.53	96.12	90.82

TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92.68	93.94	90.43	93.23	94.02	94.49	95.49	96.92	95.18	91.81	88.27	89.76	94.18	90.64	91.00	88.94

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
92.22	98.93	88.77	90.30	93.04	92.35	92.67	95.73	97.86	94.14	94.43	94.83	95.17	90.44	90.95



Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
3457 K	93.1	68.3	92.5	100.7	92.9	0.4	0.4	0.2	0.3	0.0011