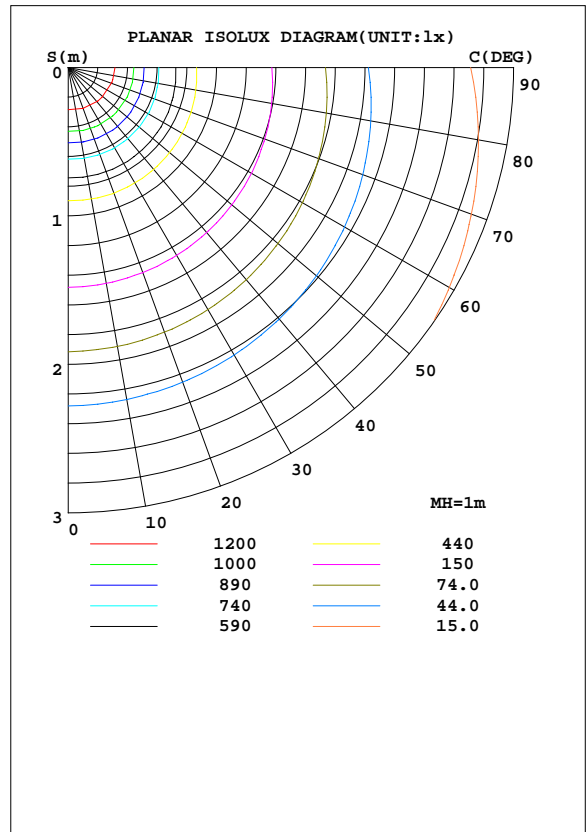
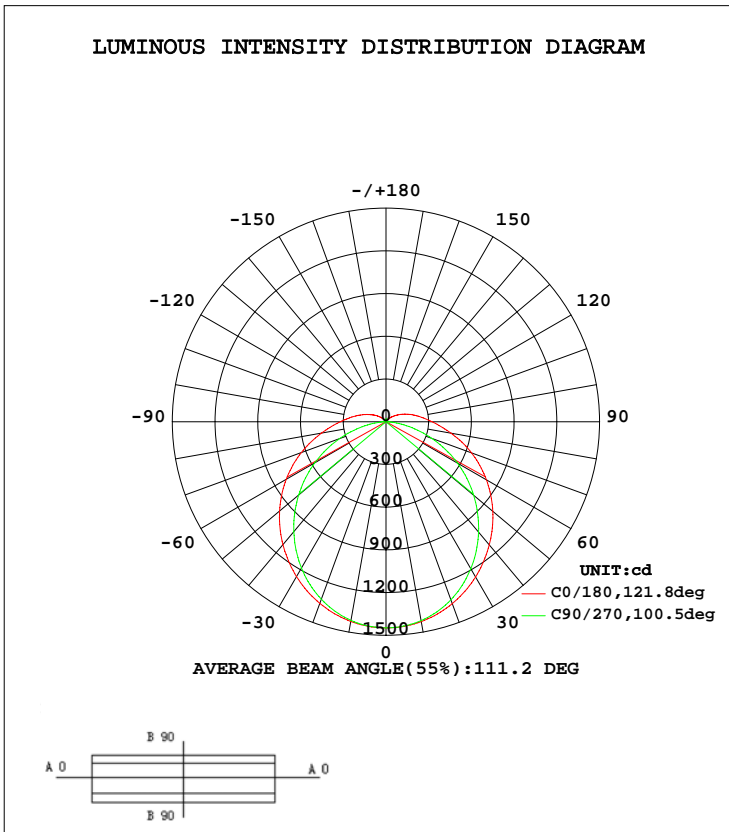


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.3V I:0.3361A P:40.10W PF:0.9919 Lamp Flux:5055.34x1 lm		
NAME: LED Vapor Tight Fixture	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: KiLi-LED Lighting Limited	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 126.06 lm/W			
MODEL	VFRB040	I <sub>max</sub> (cd)	1448	S/MH(C0/180)	1.29
NOMINAL POWER(W)	40	LOR(%)	100.0	S/MH(C90/270)	1.22
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	5055.3	η UP, DN(C0-180)	4.1, 45.8
NOMINAL FLUX(lm)	5055.34	CIE CLASS	DIRECT	η UP, DN(C180-360)	4.1, 46.0
LAMPS INSIDE	1	η up(%)	8.2	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120.3	η down(%)	91.8	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:32DEG  
 Operators:1  
 Test Date:2018-09-27

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: %  
 Test Distance:9.190m [K=0.9902]  
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum,lamp
10	1424	1430	1416	1419	1425	1420	1419	1423	0- 10	137.0	137.0	2.71,2.71
20	1358	1365	1327	1341	1360	1350	1332	1346	10- 20	392.4	529.4	10.5,10.5
30	1257	1257	1187	1220	1259	1243	1192	1226	20- 30	596.0	1125	22.3,22.3
40	1126	1106	1007	1064	1128	1099	1012	1073	30- 40	723.7	1849	36.6,36.6
50	975.4	925.2	800.2	887.8	979.1	924.4	804.1	896.8	40- 50	763.6	2613	51.7,51.7
60	809.0	734.0	577.5	703.3	814.3	733.3	579.0	711.5	50- 60	718.6	3331	65.9,65.9
70	632.1	541.6	347.7	518.2	639.2	540.4	343.9	524.9	60- 70	601.8	3933	77.8,77.8
80	458.8	358.7	132.2	343.2	463.9	359.4	127.9	349.4	70- 80	436.7	4370	86.4,86.4
90	321.3	223.9	17.84	213.4	323.8	221.2	13.66	216.6	80- 90	272.0	4642	91.8,91.8
100	225.5	142.8	12.49	137.6	229.6	142.2	6.819	137.2	90-100	172.3	4814	95.2,95.2
110	150.8	82.75	10.17	83.45	156.8	86.07	7.658	77.32	100-110	109.6	4924	97.4,97.4
120	92.96	38.61	9.734	45.08	98.31	46.27	8.637	32.93	110-120	61.90	4986	98.6,98.6
130	51.56	16.53	10.18	21.12	53.98	21.44	9.656	14.20	120-130	30.92	5017	99.2,99.2
140	22.46	13.55	12.67	17.53	24.05	17.31	11.40	11.49	130-140	15.25	5032	99.5,99.5
150	18.51	13.92	15.42	17.40	18.26	16.60	13.65	11.75	140-150	9.806	5042	99.7,99.7
160	16.52	14.93	17.50	17.96	16.62	16.63	15.89	13.47	150-160	7.335	5049	99.9,99.9
170	16.26	16.89	18.65	18.42	16.58	17.56	17.80	16.12	160-170	4.722	5054	100,100
180	14.31	18.19	19.15	18.43	14.41	18.15	19.16	18.36	170-180	1.679	5055	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

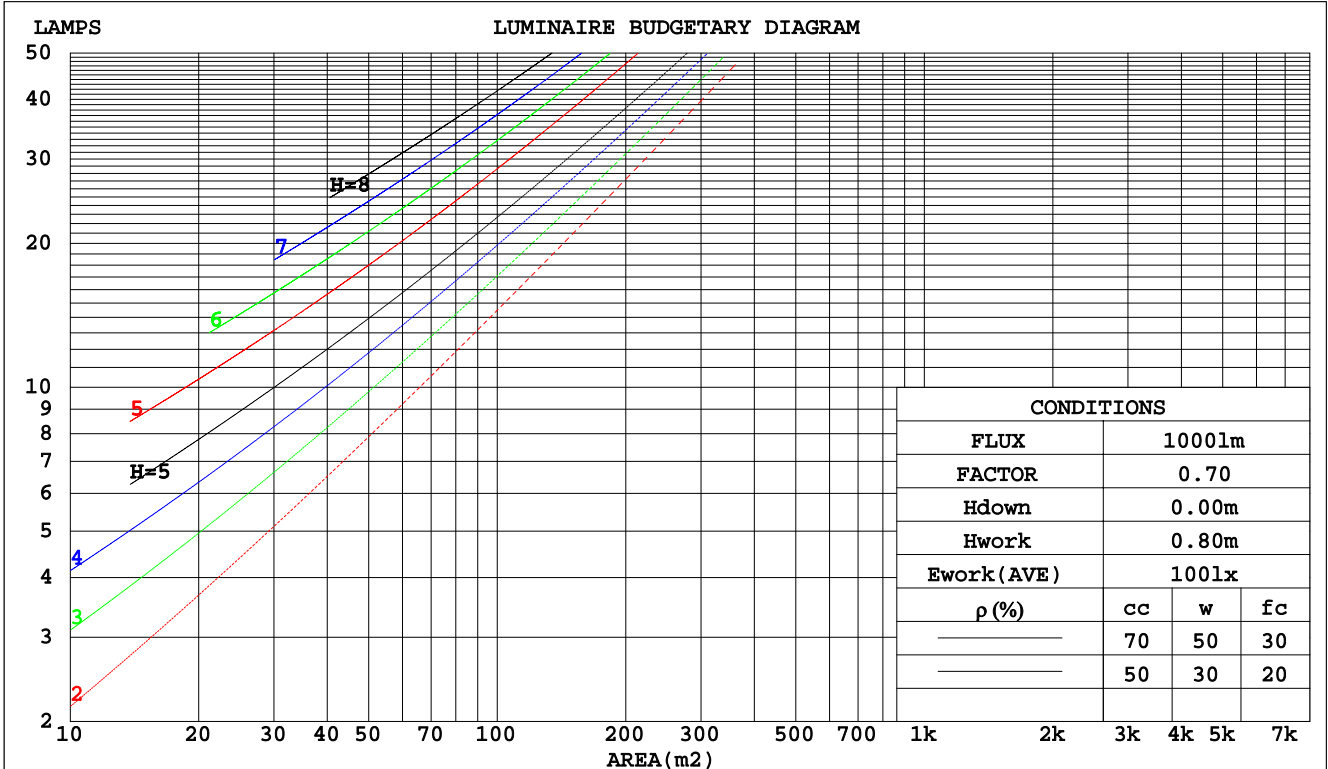
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:32DEG  
 Operators:1  
 Test Date:2018-09-27

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:%  
 Test Distance:9.190m [K=0.9902]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:120.3V I:0.3361A P:40.10W PF:0.9919 Lamp Flux:5055.34x1 lm		
NAME: LED Vapor Tight Fixture	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: KiLi-LED Lighting Limited	SUR.:	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															
	Coefficients of Utilization(CU)															
0.0	1.17	1.17	1.17	1.13	1.13	1.13	1.07	1.07	1.07	1.00	1.00	1.00	.95	.95	.95	.92
1.0	.99	.95	.90	.96	.92	.88	.91	.87	.84	.85	.82	.79	.80	.78	.76	.73
2.0	.86	.78	.72	.83	.76	.70	.78	.72	.68	.74	.69	.65	.69	.66	.62	.59
3.0	.75	.66	.59	.73	.65	.58	.68	.62	.56	.64	.59	.54	.61	.56	.52	.49
4.0	.66	.57	.50	.64	.55	.49	.60	.53	.47	.57	.51	.46	.54	.49	.44	.42
5.0	.59	.49	.42	.57	.48	.42	.54	.46	.41	.51	.45	.39	.48	.43	.38	.36
6.0	.53	.44	.37	.51	.43	.36	.49	.41	.35	.46	.40	.34	.44	.38	.33	.31
7.0	.48	.39	.32	.46	.38	.32	.44	.37	.31	.42	.35	.30	.40	.34	.30	.27
8.0	.43	.35	.29	.42	.34	.28	.40	.33	.28	.38	.32	.27	.37	.31	.26	.24
9.0	.40	.31	.26	.39	.31	.26	.37	.30	.25	.35	.29	.24	.34	.28	.24	.22
10.0	.37	.29	.23	.36	.28	.23	.34	.27	.23	.33	.27	.22	.31	.26	.22	.20



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 32DEG  
 Operators: 1  
 Test Date: 2018-09-27

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: %  
 Test Distance: 9.190m [K=0.9902]  
 Remarks:

WEC AND CCEC

Test:U:120.3V I:0.3361A P:40.10W PF:0.9919 Lamp Flux:5055.34x1 lm		
NAME: LED Vapor Tight Fixture	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: KiLi-LED Lighting Limited	SUR.:	PROTECTION ANGLE:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.356	.203	.064	.347	.198	.063	.329	.188	.060	.312	.180	.058	.297	.172	.055	
2.0	.318	.174	.053	.309	.170	.052	.293	.163	.051	.278	.156	.049	.264	.149	.047	
3.0	.286	.152	.046	.279	.149	.045	.264	.143	.044	.251	.137	.042	.238	.132	.041	
4.0	.260	.135	.040	.253	.133	.039	.240	.127	.038	.228	.122	.037	.217	.118	.036	
5.0	.238	.121	.035	.232	.119	.035	.220	.115	.034	.209	.110	.033	.199	.106	.032	
6.0	.219	.110	.031	.214	.108	.031	.203	.104	.030	.193	.100	.029	.184	.097	.029	
7.0	.203	.100	.028	.198	.099	.028	.188	.095	.027	.179	.092	.027	.171	.089	.026	
8.0	.189	.092	.026	.184	.091	.026	.175	.088	.025	.167	.085	.024	.159	.082	.024	
9.0	.176	.085	.024	.172	.084	.024	.164	.081	.023	.157	.078	.022	.149	.076	.022	
10.0	.165	.079	.022	.161	.078	.022	.154	.075	.021	.147	.073	.021	.141	.071	.020	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.253	.253	.253	.216	.216	.216	.147	.147	.147	.085	.085	.085	.027	.027	.027	
1.0	.246	.219	.194	.211	.188	.167	.144	.129	.115	.083	.075	.067	.027	.024	.022	
2.0	.239	.195	.158	.205	.168	.137	.140	.116	.095	.081	.068	.056	.026	.022	.018	
3.0	.231	.178	.136	.198	.154	.118	.136	.107	.082	.079	.062	.049	.025	.020	.016	
4.0	.223	.165	.121	.192	.143	.105	.132	.099	.074	.076	.058	.044	.025	.019	.014	
5.0	.216	.155	.110	.185	.134	.096	.128	.094	.068	.074	.055	.040	.024	.018	.013	
6.0	.208	.147	.103	.179	.127	.089	.124	.089	.063	.072	.052	.038	.023	.017	.012	
7.0	.201	.140	.097	.173	.121	.085	.120	.085	.060	.070	.050	.036	.022	.016	.012	
8.0	.195	.134	.093	.168	.117	.081	.116	.082	.057	.067	.048	.034	.022	.016	.011	
9.0	.189	.129	.090	.162	.112	.078	.113	.079	.056	.066	.047	.033	.021	.015	.011	
10.0	.183	.125	.087	.158	.109	.076	.109	.077	.054	.064	.045	.032	.021	.015	.011	

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:32DEG  
 Operators:1  
 Test Date:2018-09-27

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:%  
 Test Distance:9.190m [K=0.9902]  
 Remarks:

Uncorrected UGR Table

Test:U:120.3V I:0.3361A P:40.10W PF:0.9919 Lamp Flux:5055.34x1 lm										
NAME: LED Vapor Tight Fixture					TYPE:			WEIGHT:		
DIM.:					SPEC.:			SERIAL No.:		
MFR.: KiLi-LED Lighting Limited					SUR.:			PROTECTION ANGLE:		
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	37.9	39.4	38.3	39.7	40.1	37.0	38.5	37.4	38.8	39.2
3H	40.1	41.5	40.5	41.8	42.3	38.5	39.8	38.9	40.2	40.6
4H	41.2	42.5	41.7	42.9	43.4	39.0	40.3	39.5	40.7	41.2
6H	42.5	43.7	42.9	44.1	44.5	39.4	40.6	39.9	41.1	41.5
8H	43.1	44.3	43.6	44.7	45.2	39.5	40.7	40.0	41.1	41.6
12H	43.9	45.0	44.3	45.4	45.9	39.6	40.7	40.1	41.2	41.6
4H 2H	38.6	39.8	39.0	40.2	40.7	37.9	39.2	38.3	39.6	40.0
3H	40.9	42.1	41.4	42.5	43.0	39.6	40.7	40.1	41.2	41.7
4H	42.2	43.3	42.7	43.7	44.3	40.3	41.4	40.8	41.9	42.4
6H	43.6	44.6	44.2	45.1	45.6	40.9	41.8	41.4	42.3	42.9
8H	44.4	45.3	44.9	45.8	46.3	41.1	42.0	41.6	42.5	43.0
12H	45.3	46.1	45.8	46.6	47.2	41.2	42.0	41.8	42.5	43.1
8H 4H	42.6	43.5	43.1	44.0	44.5	41.0	41.9	41.6	42.4	43.0
6H	44.2	45.0	44.8	45.5	46.1	41.9	42.6	42.5	43.2	43.8
8H	45.2	45.8	45.8	46.4	47.0	42.3	42.9	42.8	43.5	44.1
12H	46.3	46.9	46.9	47.4	48.1	42.5	43.1	43.1	43.7	44.3
12H 4H	42.6	43.4	43.2	43.9	44.5	41.2	42.0	41.7	42.5	43.1
6H	44.4	45.0	44.9	45.6	46.2	42.2	42.9	42.8	43.4	44.1
8H	45.4	46.0	46.0	46.6	47.2	42.7	43.3	43.3	43.9	44.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 5055 lm Total Lamp Luminous Flux.(8log(F/F0) = 5.6)

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:32DEG  
 Operators:1  
 Test Date:2018-09-27

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:%  
 Test Distance:9.190m [K=0.9902]  
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:120.3V I:0.3361A P:40.10W PF:0.9919 Lamp Flux:5055.34x1 lm		
NAME: LED Vapor Tight Fixture	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: KiLi-LED Lighting Limited	SUR.:	PROTECTION ANGLE:

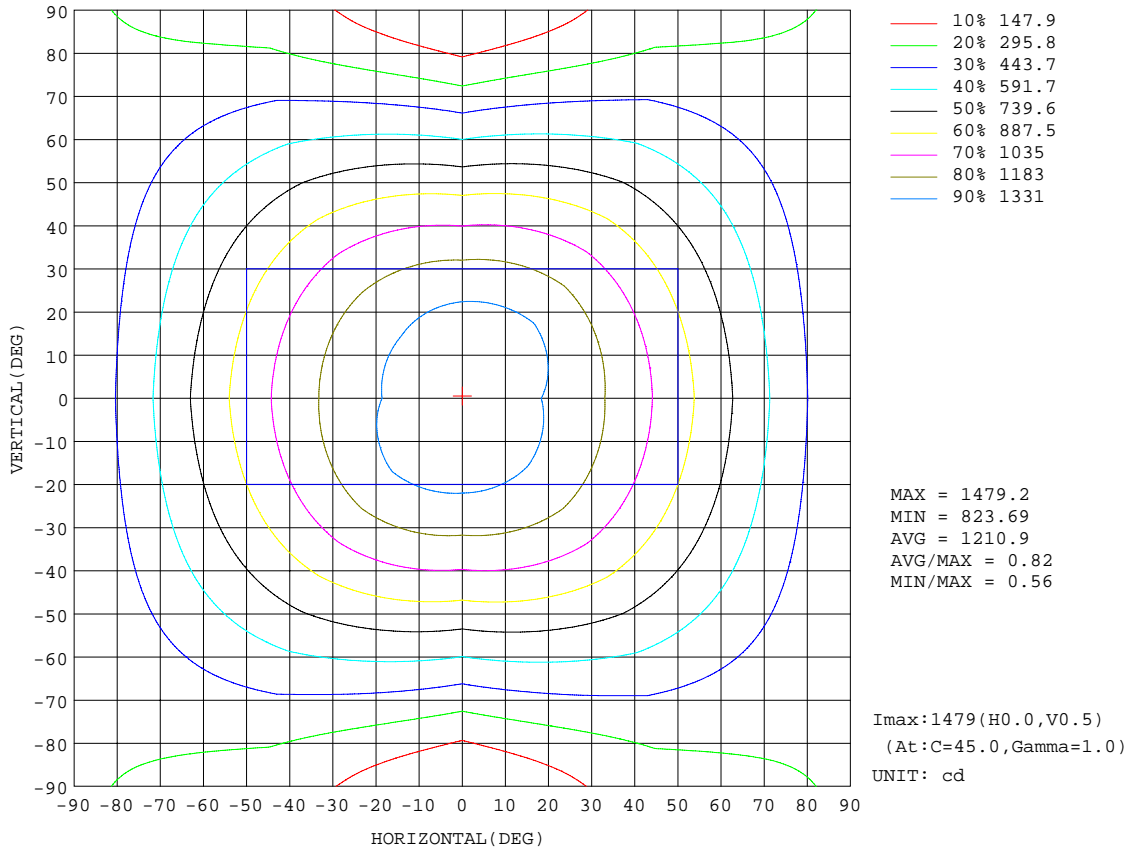
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	53	41	33	52	40	33	50	40	33	26
0.80	62	50	42	61	49	42	59	48	41	34
1.00	70	58	50	69	57	50	66	58	49	41
1.25	77	65	57	75	64	57	72	63	56	47
1.50	82	71	63	80	70	62	76	67	61	52
2.00	89	79	72	87	78	71	82	75	69	59
2.50	93	84	77	91	82	76	86	79	73	63
3.00	97	89	82	94	87	81	89	83	78	67
4.00	101	94	89	98	92	87	93	88	83	72
5.00	104	98	93	101	95	91	95	91	87	75
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:32DEG  
 Operators:1  
 Test Date:2018-09-27

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:%  
 Test Distance:9.190m [K=0.9902]  
 Remarks:

ISOCANDELA DIAGRAM

Test:U:120.3V I:0.3361A P:40.10W PF:0.9919 Lamp Flux:5055.34x1 lm		
NAME: LED Vapor Tight Fixture	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: KiLi-LED Lighting Limited	SUR.:	PROTECTION ANGLE:

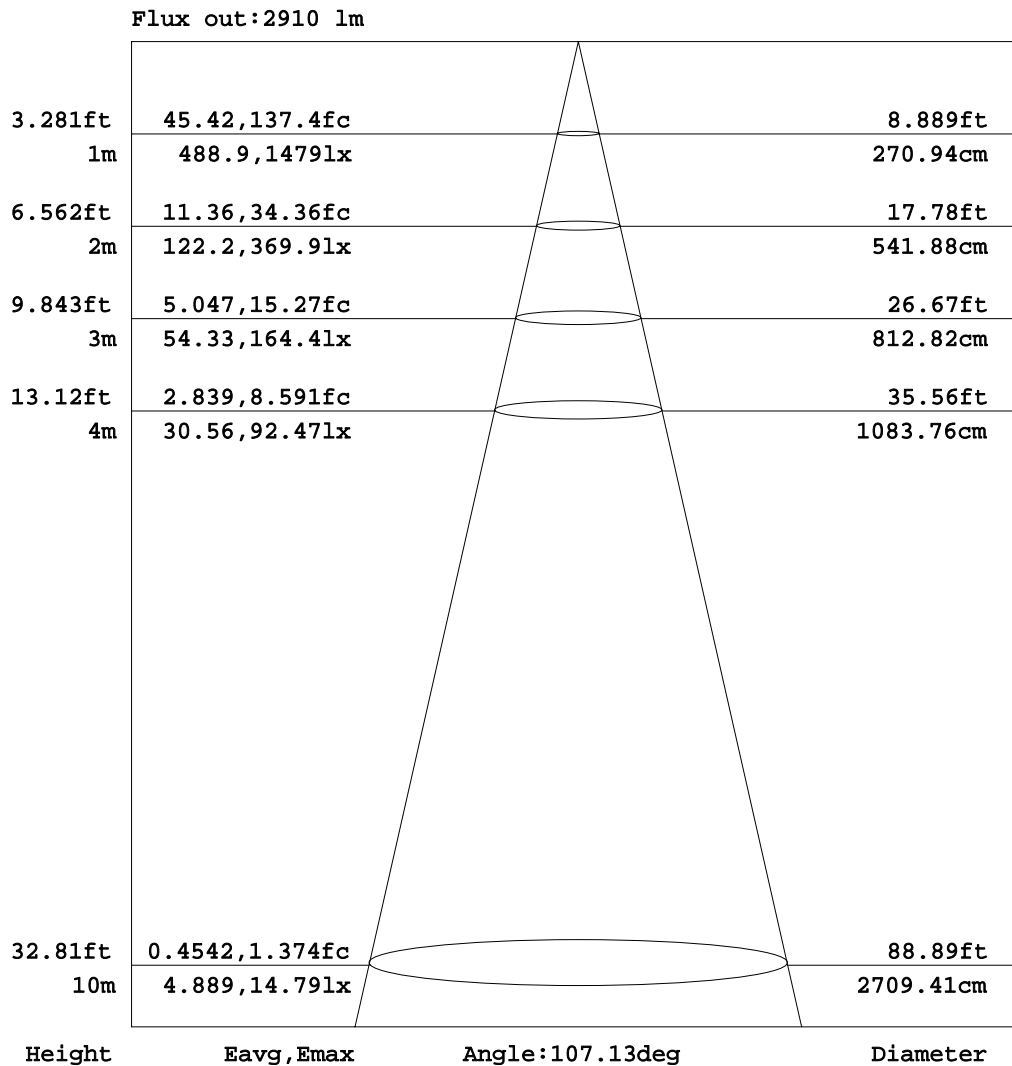


C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 32DEG  
 Operators: 1  
 Test Date: 2018-09-27

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: %  
 Test Distance: 9.190m [K=0.9902]  
 Remarks:

AAI Figure

Test:U:120.3V I:0.3361A P:40.10W PF:0.9919 Lamp Flux:5055.34x1 lm		
NAME: LED Vapor Tight Fixture	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: KiLi-LED Lighting Limited	SUR.:	PROTECTION ANGLE:



Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

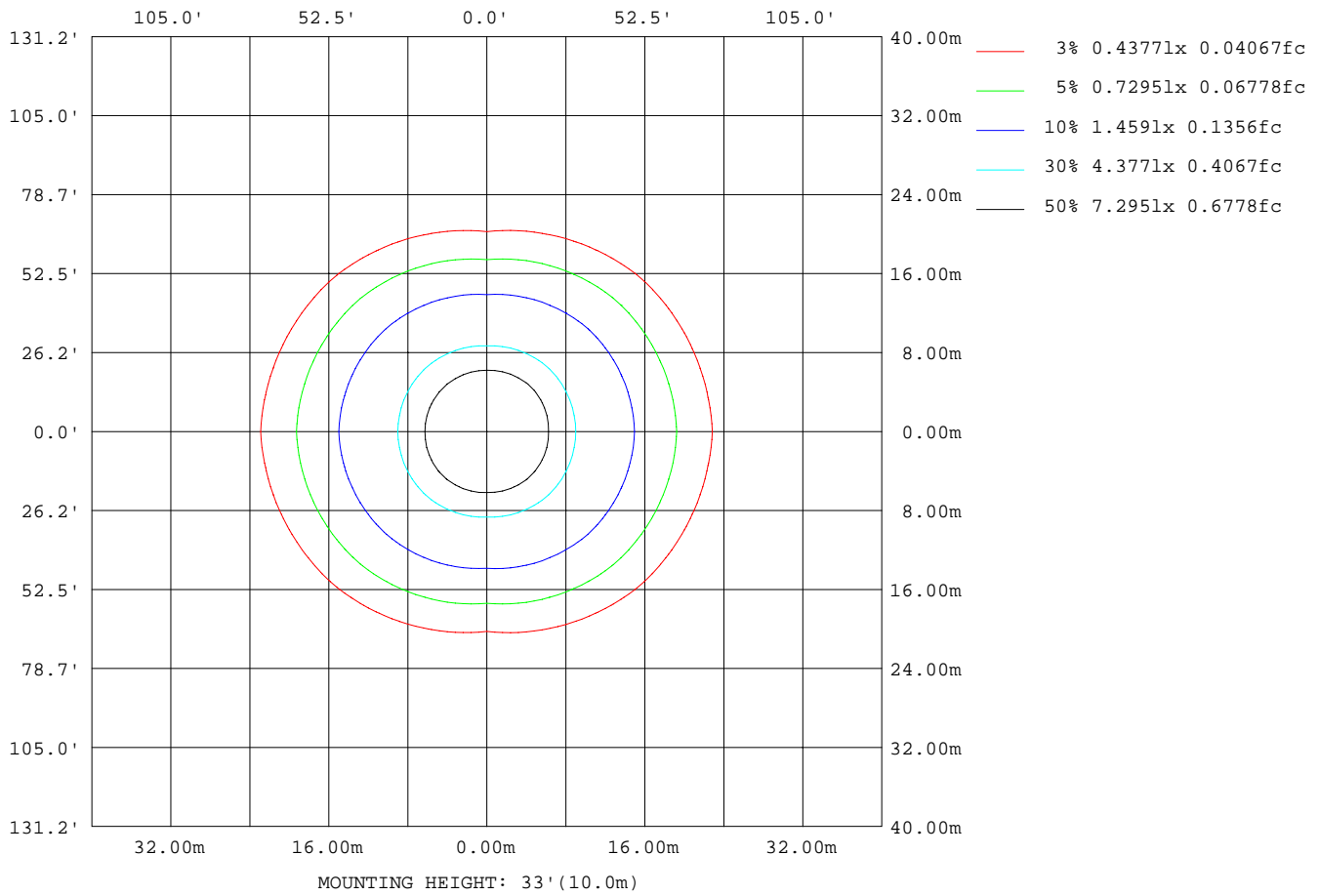
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:32DEG  
 Operators:1  
 Test Date:2018-09-27

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:%  
 Test Distance:9.190m [K=0.9902]  
 Remarks:



**ISOLUX DIAGRAM**

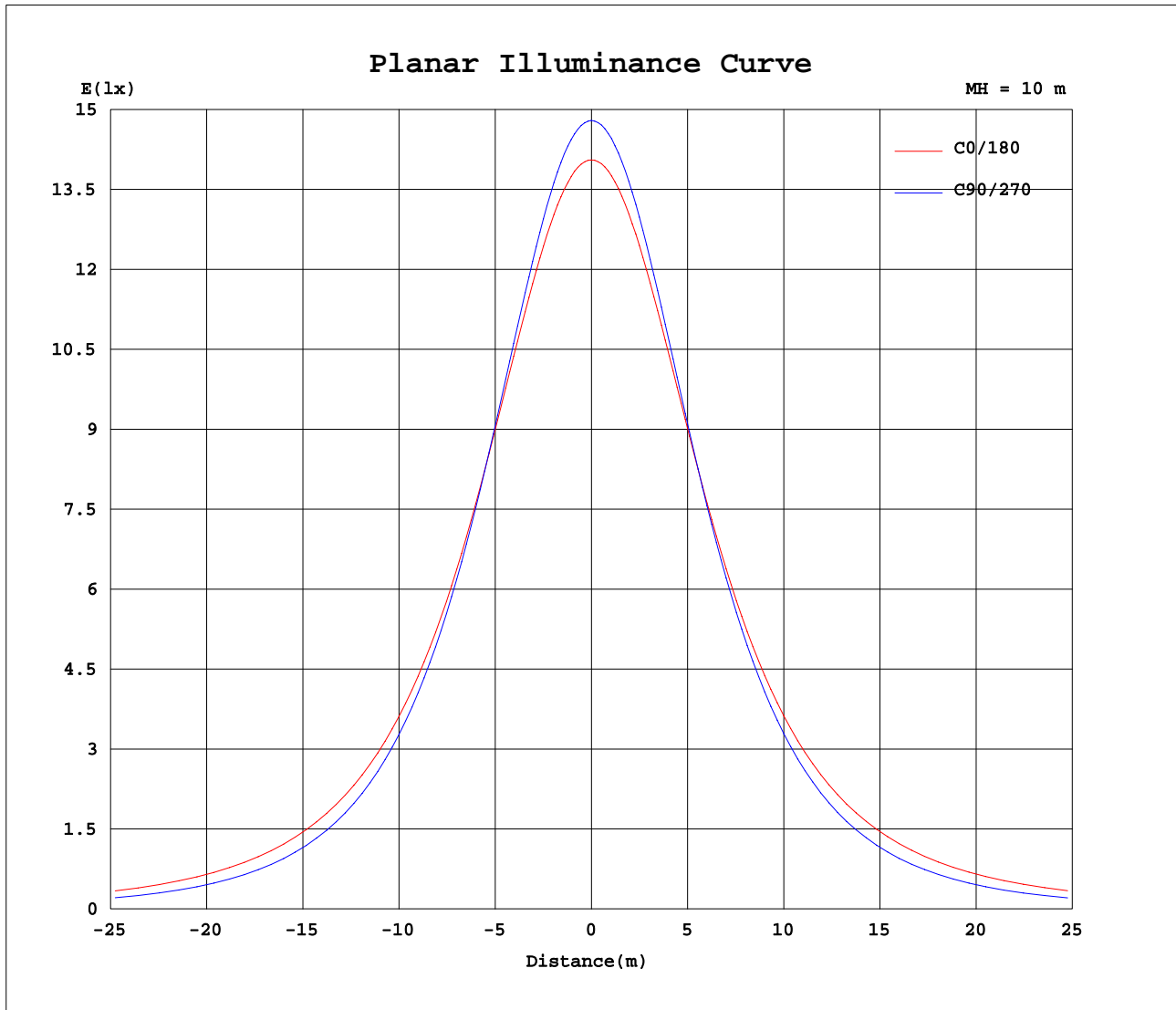
Test:U:120.3V I:0.3361A P:40.10W PF:0.9919 Lamp Flux:5055.34x1 lm		
NAME: LED Vapor Tight Fixture	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: KiLi-LED Lighting Limited	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 32DEG  
 Operators: 1  
 Test Date: 2018-09-27

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: %  
 Test Distance: 9.190m [K=0.9902]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 32DEG  
 Operators: 1  
 Test Date: 2018-09-27

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: %  
 Test Distance: 9.190m [K=0.9902]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.3V I:0.3361A P:40.10W PF:0.9919 Lamp Flux:5055.34x1 lm		
NAME: LED Vapor Tight Fixture	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: KiLi-LED Lighting Limited	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG)\γ (DEG)	0	45	90	135	180	225	270	315											
0	1448	1448	1448	1448	1448	1448	1448	1448											
5	1442	1444	1440	1440	1443	1439	1440	1442											
10	1424	1430	1416	1419	1425	1420	1419	1423											
15	1396	1403	1379	1386	1397	1391	1382	1391											
20	1358	1365	1327	1341	1360	1350	1332	1346											
25	1311	1316	1262	1285	1313	1301	1267	1291											
30	1257	1257	1187	1220	1259	1243	1192	1226											
35	1194	1187	1101	1146	1196	1175	1106	1153											
40	1126	1106	1007	1064	1128	1099	1012	1073											
45	1053	1018	906	978	1056	1014	910	986											
50	975	925	800	888	979	924	804	897											
55	894	830	691	796	898	830	693	805											
60	809	734	578	703	814	733	579	711											
65	722	637	463	610	727	636	460	618											
70	632	542	348	518	639	540	344	525											
75	544	446	235	427	552	447	231	435											
80	459	359	132	343	464	359	128	349											
85	384	283	52.3	270	387	282	47.8	275											
90	321	224	17.8	213	324	221	13.7	217											
95	269	180	14.0	172	272	178	7.76	174											
100	226	143	12.5	138	230	142	6.82	137											
105	186	111	11.3	108	191	112	7.09	106											
110	151	82.7	10.2	83.4	157	86.1	7.66	77.3											
115	119	56.8	9.67	62.1	126	64.1	7.89	51.3											
120	93.0	38.6	9.73	45.1	98.3	46.3	8.64	32.9											
125	70.2	25.7	9.87	31.6	74.1	32.3	9.15	20.0											
130	51.6	16.5	10.2	21.1	54.0	21.4	9.66	14.2											
135	35.0	14.1	10.9	17.9	37.6	17.8	10.2	12.1											
140	22.5	13.6	12.7	17.5	24.1	17.3	11.4	11.5											
145	19.3	13.8	14.0	17.5	19.0	17.1	12.6	10.9											
150	18.5	13.9	15.4	17.4	18.3	16.6	13.6	11.8											
155	17.3	14.2	16.5	17.4	17.4	16.3	14.9	12.6											
160	16.5	14.9	17.5	18.0	16.6	16.6	15.9	13.5											
165	16.1	15.6	18.1	18.3	16.5	17.1	16.9	14.7											
170	16.3	16.9	18.7	18.4	16.6	17.6	17.8	16.1											
175	16.4	17.8	18.9	18.4	16.6	17.8	18.5	17.3											
180	14.3	18.2	19.2	18.4	14.4	18.2	19.2	18.4											

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:32DEG  
 Operators:1  
 Test Date:2018-09-27

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:%  
 Test Distance:9.190m [K=0.9902]  
 Remarks: