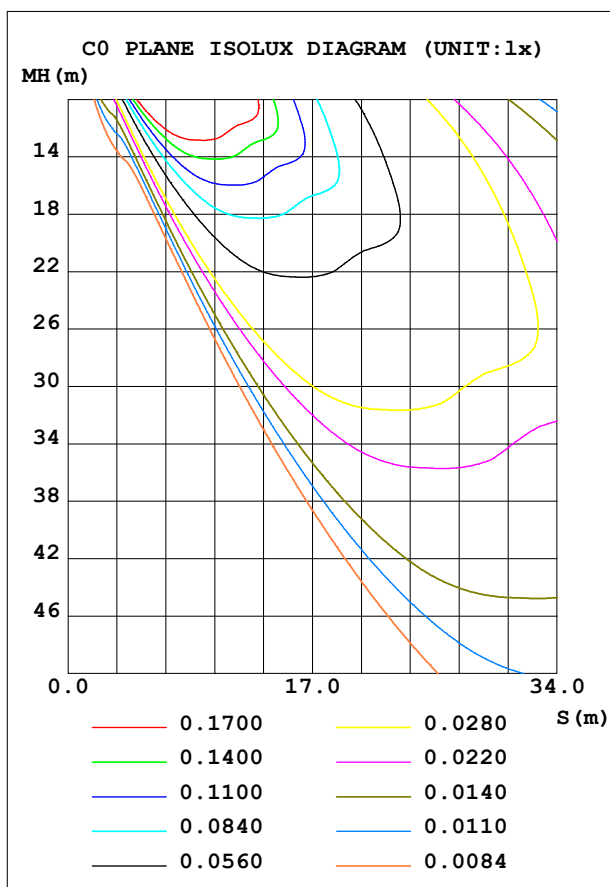
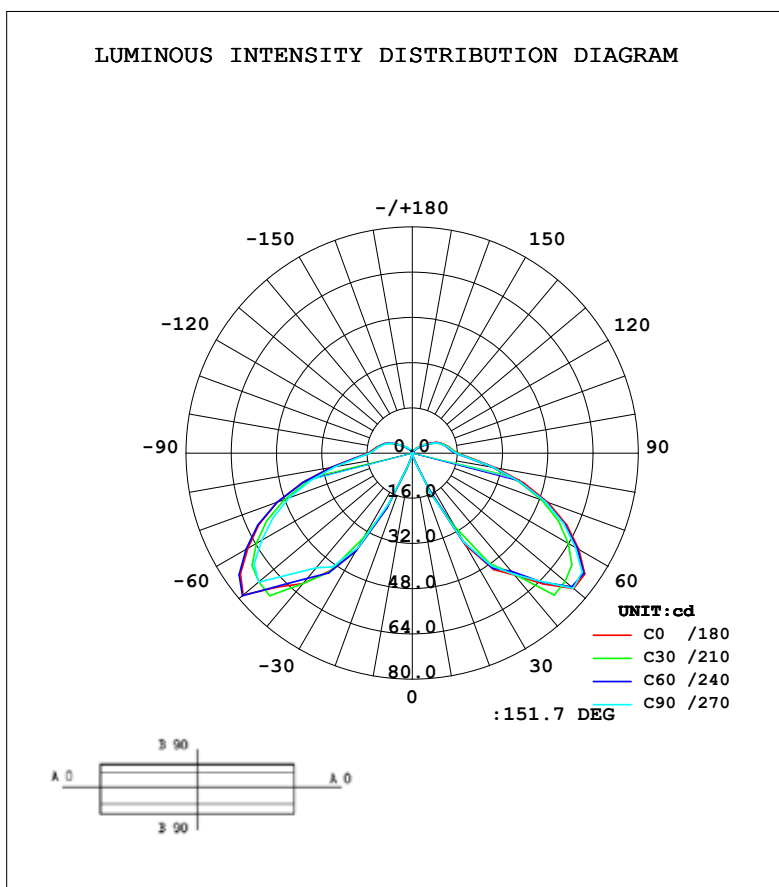


# LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.1V I:0.1877A P:20.14W PF:0.4470 Lamp Flux:322.4x1 lm		
NAME: FL88009	TYPE:	WEIGHT:
DIMENSION:	SPECIFICATION:	SERIAL No.:
MANUFACTURER: Famco	SURFACE:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL FL88009		Eff: 16.01 lm/W			
		Imax (cd)	78.42	S/MH (C0/180)	10.32
NOMINAL POWER (W)	20	EFFICIENCY (%)	100.0	S/MH (C90/270)	10.19
RATED VOLTAGE (V)	240	TOTAL FLUX (lm)	322.44	$\eta$ UP (C0-180)	6.7
NOMINAL FLUX (lm)	322.44	CIE CLASS	SEMI-D.	$\eta$ DN (C0-180)	43.1
LAMPS INSIDE	1	$\eta$ up (%)	13.5	$\eta$ UP (C180-360)	6.8
TEST VOLTAGE (V)	240.1	$\eta$ down (%)	86.5	$\eta$ DN (C180-360)	43.4



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25DEG  
 Operators:Chris Dumesny  
 Test Date:2014-10-22

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 5.0DEG  
 Test System:EVERFINE GO-2000A SYSTEM V1.0.210  
 Humidity:65%  
 Test Distance:5.000m [K=1.0000]  
 Remarks: FL88009  
 20W LED Garden Bollard Round  
 PC = LED Centre

## ZONAL FLUX DIAGRAM

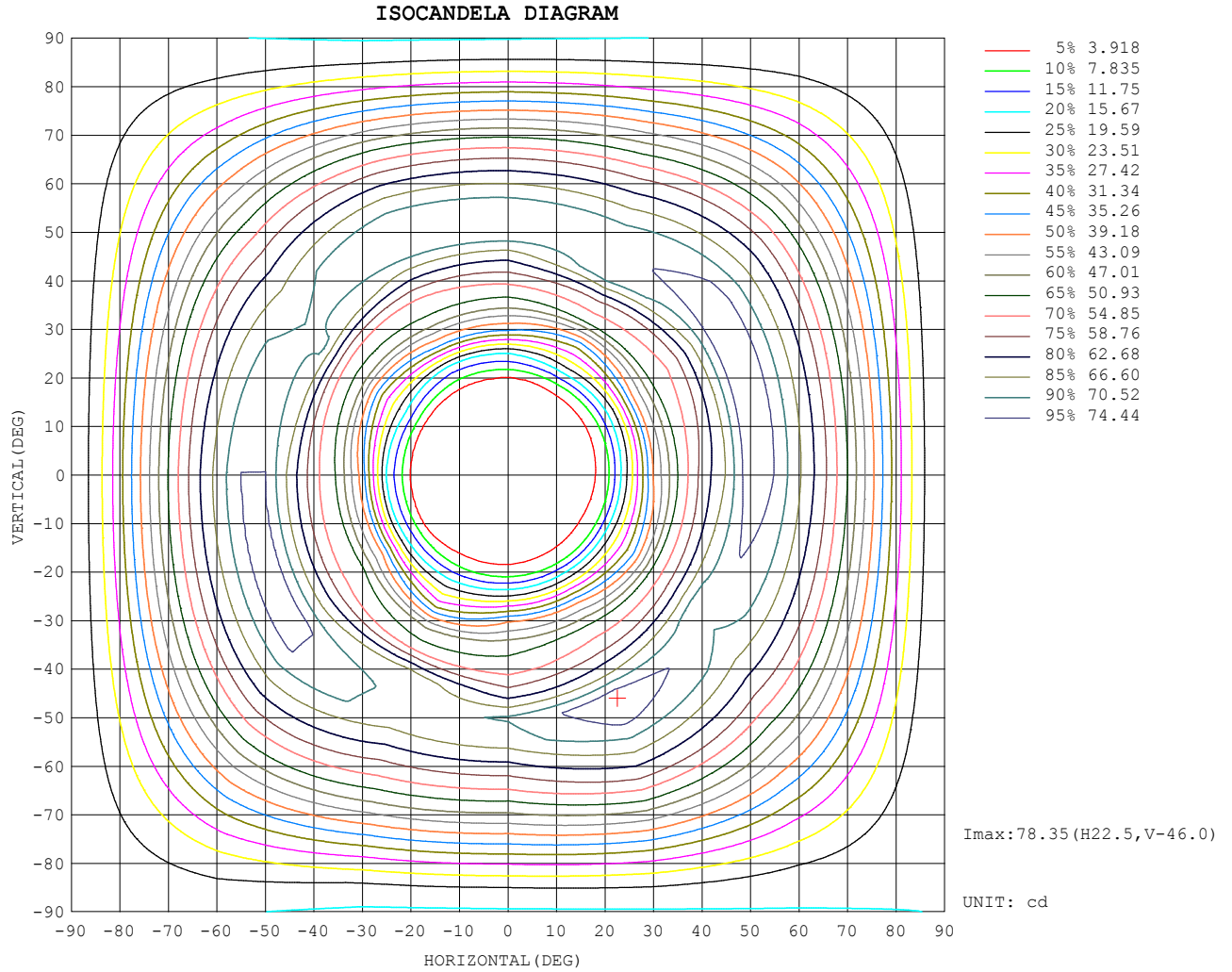
**ZONAL FLUX DIAGRAM:**

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%
10	0.8002	0.8459	0.8550	0.7018	0.6051	0.6573	0.7044	0.7591	0- 10	0.0281	0.0281	0.01
20	5.278	5.688	4.842	4.222	3.519	3.633	3.790	4.537	10- 20	0.4779	0.5060	0.16
30	39.59	37.27	38.49	33.62	37.37	32.95	36.36	35.86	20- 30	8.419	8.925	2.77
40	60.25	59.02	53.06	54.86	56.23	55.13	55.94	57.56	30- 40	31.41	40.34	12.51
50	78.17	74.67	70.94	72.13	74.50	72.12	74.32	75.19	40- 50	51.92	92.25	28.61
60	67.17	65.78	61.53	64.97	67.94	65.63	66.61	66.50	50- 60	64.78	157.0	48.70
70	50.88	49.57	46.36	49.39	51.12	49.62	50.10	50.23	60- 70	58.07	215.1	66.71
80	29.35	28.67	27.75	29.09	30.11	28.82	29.03	29.25	70- 80	41.64	256.7	79.63
90	15.74	15.27	15.15	15.48	16.08	15.50	15.41	15.75	80- 90	22.08	278.8	86.47
100	12.84	12.49	12.37	12.68	13.18	12.78	12.72	12.66	90-100	15.16	294.0	91.17
110	10.23	10.08	9.944	10.26	10.72	10.42	10.31	9.934	100-110	12.13	306.1	94.94
120	6.570	6.474	6.568	6.359	7.020	6.435	6.694	6.245	110-120	8.421	314.5	97.55
130	3.841	3.587	3.818	3.360	4.110	3.450	3.877	3.401	120-130	4.370	318.9	98.90
140	2.305	1.885	2.218	1.804	2.371	1.777	2.128	1.792	130-140	2.075	321.0	99.55
150	1.358	1.003	1.279	0.9511	1.302	0.8771	1.183	0.9414	140-150	0.8987	321.9	99.83
160	0.7494	0.6057	0.7091	0.6055	0.7268	0.5845	0.6441	0.5867	150-160	0.3661	322.3	99.94
170	0.5177	0.4645	0.4634	0.4556	0.4749	0.4702	0.4444	0.4488	160-170	0.1533	322.4	99.99
180	0.3751	0.3935	0.3802	0.3779	0.3735	0.3918	0.4047	0.3974	170-180	0.0393	322.4	100.00
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature:25DEG**  
**Operators:Chris Dumesny**  
**Test Date:2014-10-22**

**$\gamma$  Range: 0 - 180DEG**  
 **$\gamma$  Interval: 5.0DEG**  
**Test System:EVERFINE GO-2000A SYSTEM V1.0.210**  
**Humidity:65%**  
**Test Distance:5.000m [K=1.0000]**  
**Remarks: FL88009**  
**20W LED Garden Bollard Round**  
**PC = LED Centre**

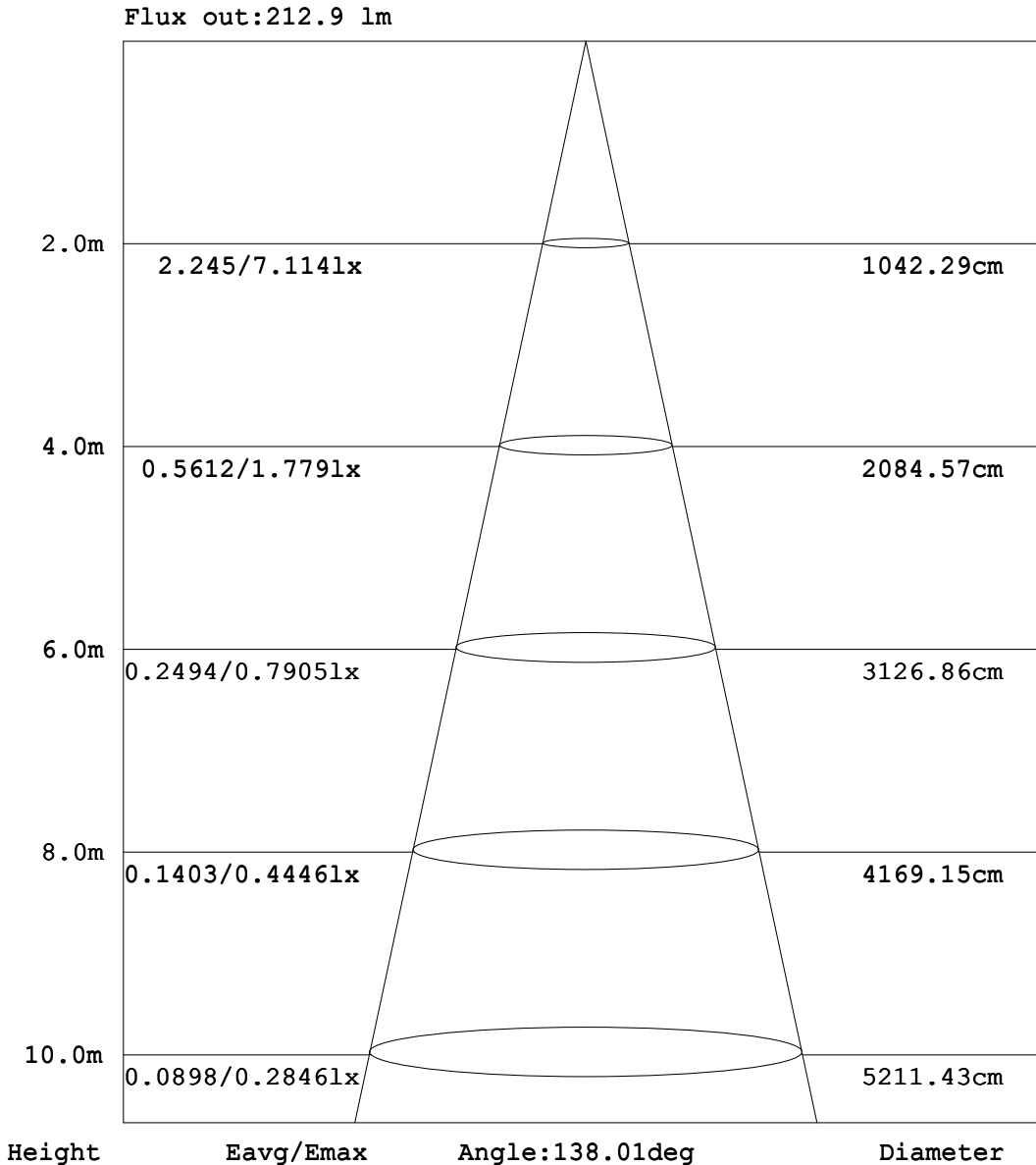
# ISOCANDELA DIAGRAM



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators: Chris Dumesny  
 Test Date: 2014-10-22

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 5.0DEG  
 Test System: EVERFINE GO-2000A SYSTEM V1.0.210  
 Humidity: 65%  
 Test Distance: 5.000m [K=1.0000]  
 Remarks: **FL88009**  
 20W LED Garden Bollard Round  
 PC = LED Centre

# AAI Figure



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

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators: Chris Dumesny  
 Test Date: 2014-10-22

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 5.0DEG  
 Test System: EVERFINE GO-2000A SYSTEM V1.0.210  
 Humidity: 65%  
 Test Distance: 5.000m [K=1.0000]  
 Remarks: FL88009  
 20W LED Garden Bollard Round  
 PC = LED Centre

# LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	0.25	0.29	0.28	0.26	0.26	0.27	0.25	0.29	0.28	0.26	0.26	0.27						
5	0.30	0.34	0.29	0.32	0.29	0.28	0.28	0.27	0.29	0.29	0.31	0.27						
10	0.80	0.86	0.84	0.86	0.73	0.67	0.61	0.64	0.67	0.70	0.73	0.79						
15	1.86	1.95	1.90	1.81	1.66	1.58	1.46	1.48	1.54	1.56	1.67	1.78						
20	5.28	5.92	5.45	4.84	4.58	3.86	3.52	3.75	3.52	3.79	4.44	4.64						
25	21.2	21.7	21.5	19.8	16.8	16.9	15.3	16.8	14.3	15.6	19.7	18.7						
30	39.6	34.5	40.0	38.5	28.7	38.5	37.4	29.9	36.0	36.4	32.5	39.2						
35	50.9	51.3	51.8	49.1	46.4	51.1	50.2	47.9	49.6	48.5	51.4	51.8						
40	60.3	60.2	57.8	53.1	54.1	55.7	56.2	55.6	54.6	55.9	59.2	55.9						
45	66.9	71.4	66.3	60.5	69.5	65.3	65.4	71.0	64.4	64.0	73.4	66.3						
50	78.2	70.9	78.4	70.9	69.3	75.0	74.5	70.6	73.6	74.3	73.0	77.4						
55	74.3	69.3	74.9	68.4	67.8	74.7	74.5	68.9	74.1	73.4	70.9	75.3						
60	67.2	63.7	67.8	61.5	61.7	68.2	67.9	63.8	67.5	66.6	64.9	68.1						
65	59.9	56.9	60.3	54.5	55.1	60.5	60.3	57.2	59.5	59.2	58.0	60.6						
70	50.9	48.2	50.9	46.4	47.3	51.5	51.1	48.9	50.4	50.1	49.1	51.4						
75	40.1	38.2	40.0	37.2	37.7	41.2	40.8	39.0	39.4	39.4	38.9	40.4						
80	29.3	28.2	29.2	27.8	27.7	30.5	30.1	28.9	28.8	29.0	28.7	29.8						
85	20.4	19.8	20.1	19.6	19.4	21.2	21.1	20.3	20.0	20.2	20.1	20.6						
90	15.7	15.3	15.2	15.1	14.9	16.1	16.1	15.8	15.2	15.4	15.7	15.8						
95	14.1	13.7	13.6	13.5	13.4	14.4	14.3	14.2	13.6	13.9	14.0	14.1						
100	12.8	12.5	12.5	12.4	12.2	13.1	13.2	13.0	12.6	12.7	12.6	12.7						
105	11.5	11.4	11.3	11.1	11.1	11.8	11.9	11.8	11.4	11.5	11.4	11.4						
110	10.2	10.0	10.2	9.94	9.96	10.6	10.7	10.5	10.3	10.3	10.1	9.82						
115	8.57	8.19	8.58	8.44	8.22	8.56	9.19	8.37	8.60	8.72	8.46	7.92						
120	6.57	6.28	6.67	6.57	6.23	6.49	7.02	6.33	6.54	6.69	6.53	5.96						
125	5.00	4.79	4.99	5.03	4.54	4.80	5.37	4.80	4.74	5.10	4.72	4.56						
130	3.84	3.64	3.53	3.82	3.10	3.62	4.11	3.61	3.29	3.88	3.27	3.53						
135	3.00	2.86	2.43	2.98	2.18	2.74	3.11	2.75	2.24	2.95	2.21	2.70						
140	2.31	2.13	1.64	2.22	1.56	2.05	2.37	2.06	1.49	2.13	1.52	2.06						
145	1.73	1.53	1.18	1.64	1.12	1.49	1.71	1.54	1.06	1.53	1.09	1.55						
150	1.36	1.19	0.82	1.28	0.79	1.11	1.30	1.07	0.68	1.18	0.69	1.19						
155	1.06	0.84	0.66	0.99	0.66	0.76	1.02	0.78	0.59	0.68	0.59	0.85						
160	0.75	0.65	0.56	0.71	0.58	0.63	0.73	0.64	0.53	0.64	0.50	0.68						
165	0.62	0.55	0.48	0.58	0.50	0.53	0.59	0.58	0.49	0.55	0.45	0.58						
170	0.52	0.47	0.45	0.46	0.46	0.45	0.47	0.49	0.45	0.44	0.42	0.47						
175	0.41	0.40	0.42	0.42	0.41	0.43	0.41	0.44	0.41	0.39	0.38	0.42						
180	0.38	0.38	0.41	0.38	0.38	0.38	0.37	0.40	0.39	0.40	0.39	0.40						

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25DEG  
 Operators: Chris Dumesny  
 Test Date: 2014-10-22

γ Range: 0 - 180DEG  
 γ Interval: 5.0DEG  
 Test System: EVERFINE GO-2000A SYSTEM V1.0.210  
 Humidity: 65%  
 Test Distance: 5.000m [K=1.0000]  
 Remarks: FL88009  
 20W LED Garden Bollard Round  
 PC = LED Centre

