



LIGHTING SCIENCES CANADA LTD.

440 Phillip St., Unit 19, Waterloo, Ontario, Canada N2L 5R9
Tel: (519) 746-3140 Fax: (519) 746-3156 lsc@lightingsciences.ca

CERTIFIED TEST REPORT NO. LSC D095

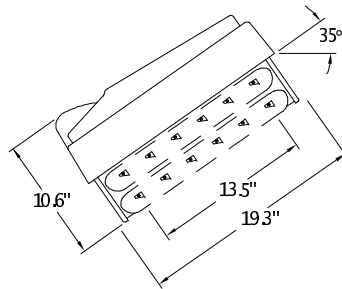
RELUME TECHNOLOGIES OUTDOOR LED LUMINAIRE CAT. NO. R-20
WITH BLACK/DIFFUSE REFLECTORS AND CLEAR LENS
24 WHITE LEDS. LUMEN OUTPUT = 3318 LMS.
(OPERATED FOR 1000 HOURS)

IESNA CUTOFF CLASSIFICATION: CUTOFF

REPORT PREPARED FOR:

THE CITY OF WELLAND
WELLAND, ONTARIO
UPON REQUEST FROM:
TABIA - GREEN TBIZ PROGRAM

CERTIFIED BY:



DATE: JAN 25, 2008

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
ABSOLUTE PHOTOMETRY TAKEN. BALLAST FACTORS HAVE BEEN APPLIED.

TESTED IN 30 PLANES LEFT SIDE, 30 PLANES RIGHT SIDE, LEFT AND RIGHT AVERAGED

VERTICAL TEST INCREMENTS ARE 2.5 DEGREES.

TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST
LUMINOUS OPENING OF LUMINAIRE.

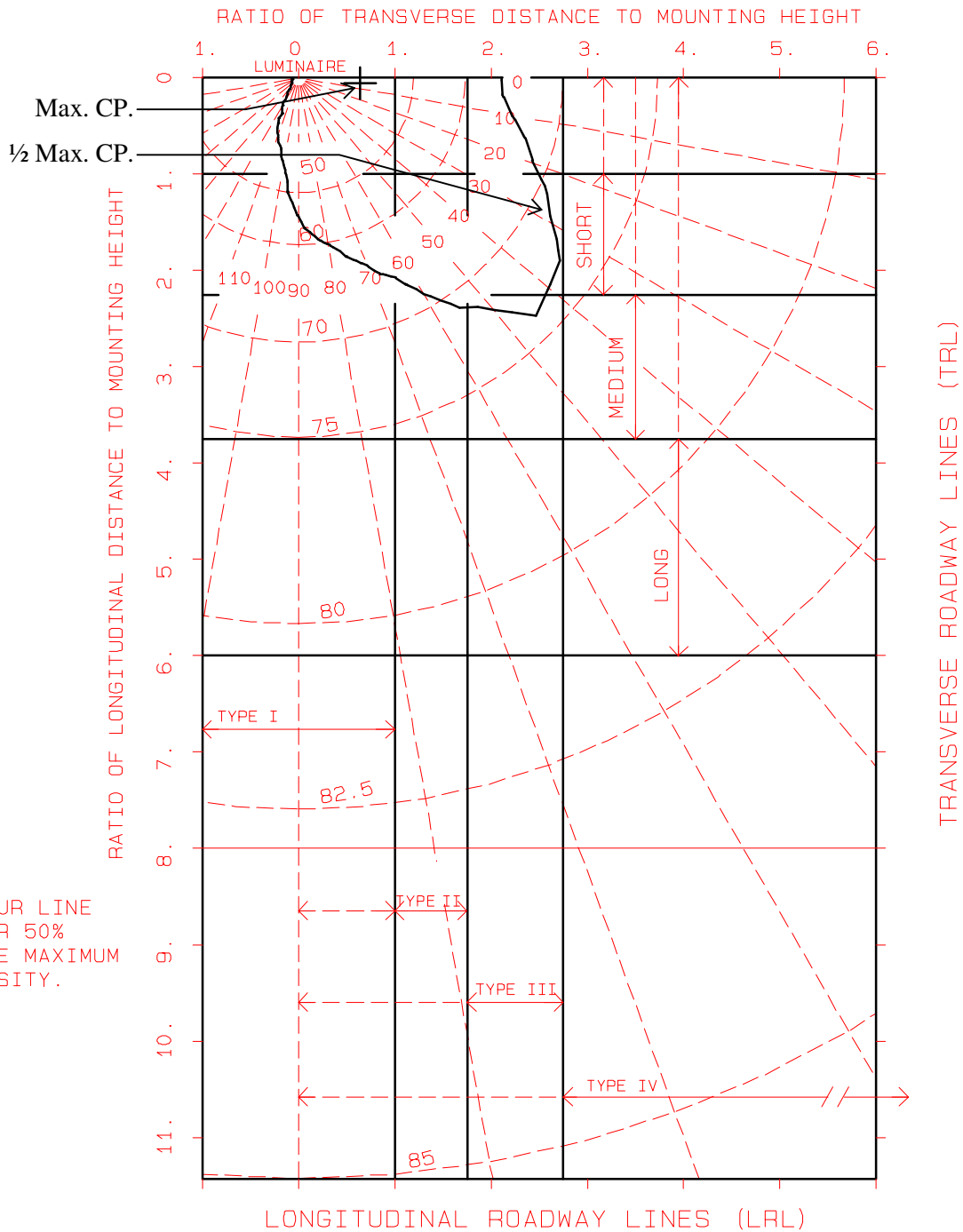
TESTED IN ACCORDANCE WITH IES RECOMMENDED PROCEDURES

LIGHTING SCIENCES CANADA LTD.

440 PHILLIP ST., UNIT 19
WATERLOO, ONTARIO

TEST REPORT NO. D095

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NOTE:
CONTOUR LINE
IS FOR 50%
OF THE MAXIMUM
INTENSITY.

IES CLASSIFICATION: TYPE III, VERY SHORT

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UTILIZATION TABLE

CO-EFFICIENT OF UTILIZATION

RATIO	HOUSE SIDE	STREET SIDE	TOTAL
.5	.164	.287	.451
1.0	.211	.511	.722
1.5	.220	.634	.854
2.0	.222	.697	.919
2.5	.223	.730	.953
3.0	.223	.747	.969
3.5	.223	.758	.980
4.0	.223	.763	.986
5.0	.223	.770	.993
TOTAL:	.223	.775	.998

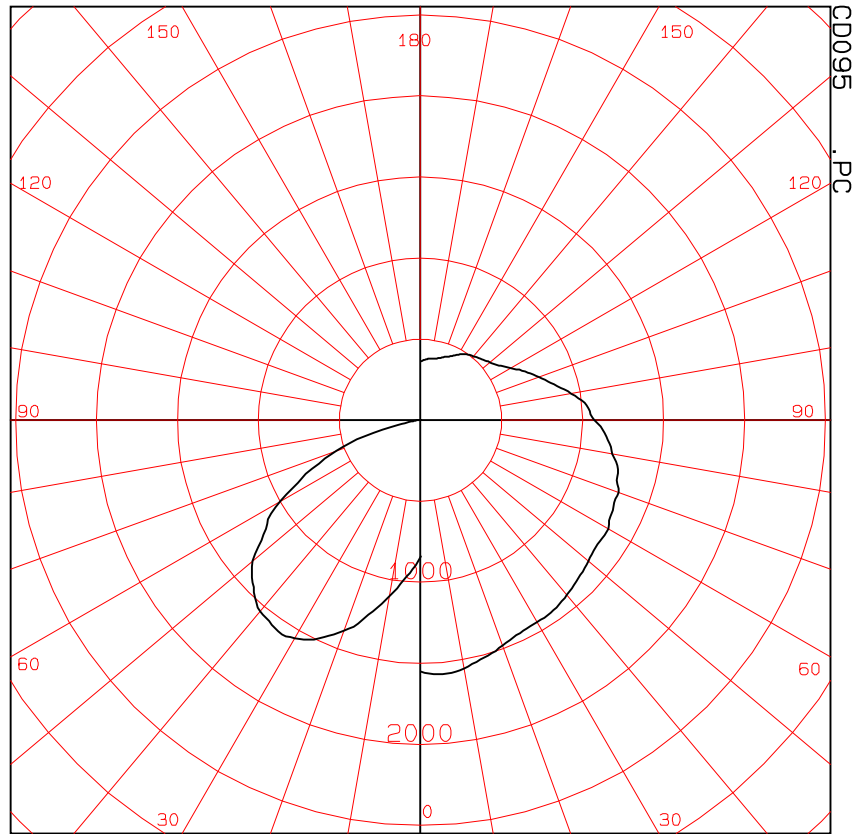
PERCENTAGE OUTPUTS

DOWNWARD:	STREET SIDE	=	77.5%
	HOUSE SIDE	=	22.3%
	TOTAL	=	99.8%
UPWARD:	STREET SIDE	=	.2%
	HOUSE SIDE	=	.0%
	TOTAL	=	.2%
TOTAL EFFICIENCY		=	100.0%

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CANDLEPOWER
IN MAX. PLANE

ANGLE	CANDLEPOWER
.0	841
5.0	966
10.0	1104
15.0	1245
20.0	1383
25.0	1486
30.0	1553
35.0	1566
40.0	1542
45.0	1458
50.0	1351
52.5	1249
55.0	1167
57.5	1108
60.0	998
62.5	869
65.0	781
67.5	658
70.0	551
72.5	435
75.0	299
77.5	165
80.0	98
82.5	52
85.0	40
87.5	29
90.0	18
95.0	12
105.0	1
115.0	0
125.0	0
135.0	0
145.0	0
155.0	0
165.0	0
175.0	0
180.0	0



CANDLEPOWER
IN MAX. CONE

ANGLE	CANDLEPOWER
.0	1550
5.0	1573
15.0	1516
25.0	1448
35.0	1432
45.0	1378
55.0	1334
60.0	1337
62.5	1315
65.0	1311
67.5	1297
70.0	1301
72.5	1270
75.0	1261
77.5	1240
80.0	1202
82.5	1183
85.0	1149
87.5	1120
90.0	1071
95.0	1029
105.0	853
115.0	711
125.0	590
135.0	533
145.0	496
155.0	437
165.0	394
175.0	378
180.0	362

MAXIMUM CANDLEPOWER: 1573
 PLANE OF MAXIMUM: 5.0
 VERTICAL ANGLE OF MAXIMUM: 32.5

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CANDLEPOWER SUMMARY

VERT. ANGLE	HORIZONTAL ANGLES - STREET SIDE									
	.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0

.0	841	841	841	841	841	841	841	841	841	841
5.0	933	966	976	953	954	959	924	907	894	875
10.0	1052	1104	1106	1082	1085	1046	1031	993	955	926
15.0	1204	1245	1249	1244	1193	1186	1148	1127	1071	1014
20.0	1344	1383	1363	1320	1306	1288	1241	1199	1135	1054
25.0	1437	1486	1436	1398	1376	1359	1299	1255	1195	1110
30.0	1522	1553	1501	1414	1408	1369	1331	1309	1255	1158
32.5**	1550	1573	1516	1448	1432	1378	1334	1311	1261	1149
35.0	1561	1566	1510	1450	1421	1350	1347	1321	1238	1164
40.0	1541	1542	1493	1450	1402	1343	1333	1286	1227	1147
45.0	1466	1458	1435	1425	1356	1340	1276	1248	1191	1072
50.0	1346	1351	1356	1358	1313	1293	1254	1195	1132	972
55.0	1181	1167	1240	1276	1269	1234	1175	1121	1029	903
60.0	1000	998	1080	1163	1194	1188	1124	1020	929	689
65.0	770	781	886	1007	1090	1106	1071	894	503	164
70.0	594	551	654	827	942	1008	874	374	78	37
75.0	330	299	318	425	637	691	392	48	30	28
80.0	106	98	95	98	88	89	42	29	15	12
85.0	39	40	35	39	32	32	19	12	15	7
90.0	22	18	15	16	14	10	11	10	6	5

VERT. ANGLE	HORIZONTAL ANGLES - HOUSE SIDE										
	90.0	95.0	105.0	115.0	125.0	135.0	145.0	155.0	165.0	175.0	180.0
.0	841	841	841	841	841	841	841	841	841	841	841
5.0	865	855	836	820	810	798	790	782	766	768	764
10.0	913	887	855	821	800	758	739	728	721	702	701
15.0	997	956	883	810	770	710	674	659	665	640	648
20.0	1022	998	891	811	727	671	627	601	586	581	575
25.0	1084	1033	908	793	686	618	569	529	515	500	490
30.0	1116	1029	896	754	638	576	511	458	429	418	408
32.5**	1071	1029	853	711	590	533	496	437	394	378	362
35.0	1074	992	826	665	536	478	436	402	373	331	318
40.0	1037	960	719	534	418	353	317	311	301	259	240
45.0	976	857	611	418	315	284	215	177	167	159	136
50.0	898	798	537	344	266	205	166	137	65	36	23
55.0	796	677	427	276	211	160	125	95	73	2	0
60.0	502	359	176	145	129	107	86	73	33	9	0
65.0	82	56	61	53	34	35	39	45	8	0	0
70.0	37	42	33	26	20	10	17	11	0	0	0
75.0	23	18	12	10	6	2	3	3	0	0	0
80.0	15	7	6	3	2	0	0	0	0	0	0
85.0	2	4	0	1	3	2	0	0	0	0	0
90.0	0	1	2	0	0	0	0	0	0	0	0

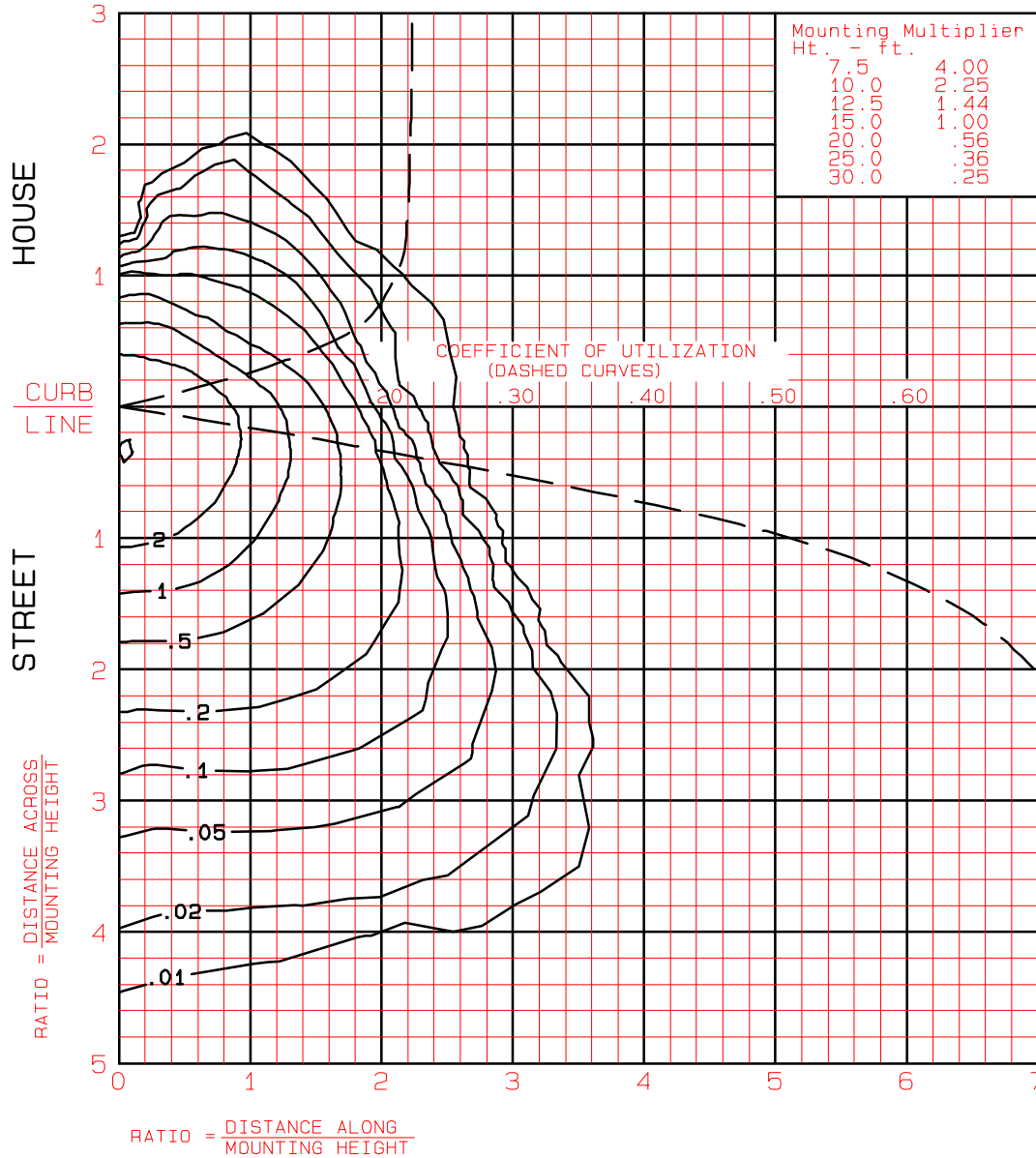
** DENOTES VERTICAL ANGLE OF MAXIMUM CONE
 **** DENOTES LATERAL ANGLE OF MAXIMUM PLANE
 CANDLEPOWER WAS MEASURED IN 2.5 DEGREE STEPS - TABULATIONS ARE AVAILABLE

ISOFOOTCANDLE

TEST REPORT NO. D095

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MOUNTING HEIGHT FOR ISOFC 15.0 FEET



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** FOOTCANDLE TABLE FOR SINGLE LUMINAIRE AT 15.0 FT. **

LATERAL RATIOS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
-3.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
-2.50	.001	.000	.002	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
-2.00	.001	.004	.011	.005	.002	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000
-1.50	.001	.044	.038	.013	.005	.003	.001	.001	.000	.000	.000	.000	.000	.000	.000
-1.00	.21	.20	.14	.054	.013	.006	.002	.001	.001	.000	.000	.000	.000	.000	.000
-.50	1.4	1.1	.47	.19	.026	.010	.004	.002	.001	.001	.000	.000	.000	.000	.000
HOUSE	CURB LINE														
STREET	3.7	3.4	1.5	.57	.074	.010	.005	.002	.001	.001	.000	.000	.000	.000	.000
.50	4.6	3.2	1.6	.68	.20	.019	.005	.003	.002	.001	.001	.000	.000	.000	.000
1.00	2.3	1.8	1.0	.56	.25	.056	.006	.003	.002	.001	.001	.000	.000	.000	.000
1.50	.85	.80	.59	.38	.22	.092	.015	.003	.002	.001	.001	.000	.000	.000	.000
2.00	.33	.33	.29	.23	.16	.086	.032	.007	.002	.001	.001	.000	.000	.000	.000
2.50	.15	.14	.14	.12	.10	.068	.031	.011	.003	.001	.001	.001	.000	.000	.000
3.00	.072	.068	.069	.063	.055	.039	.024	.010	.004	.001	.001	.000	.000	.000	.000
3.50	.035	.032	.029	.028	.025	.019	.012	.008	.003	.001	.001	.000	.000	.000	.000
4.00	.018	.015	.013	.012	.010	.009	.006	.004	.002	.001	.001	.001	.000	.000	.000
4.50	.009	.007	.006	.006	.005	.004	.003	.002	.002	.001	.001	.000	.000	.000	.000
5.00	.005	.004	.004	.003	.003	.002	.002	.002	.001	.001	.001	.000	.000	.000	.000
	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
	LONGITUDINAL MOUNTING HEIGHT RATIOS														

CORRECTION FACTORS FOR OTHER MOUNTING HEIGHTS: SEE ISOFOOTCANDLE PAGE

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CHROMATICITY MEASUREMENTS

CIE 1931-x:	0.304
CIE 1931-y:	0.328
CORRELATED COLOUR TEMPERATURE (°K):	7005
COLOUR RENDERING INDEX (%):	71.5