

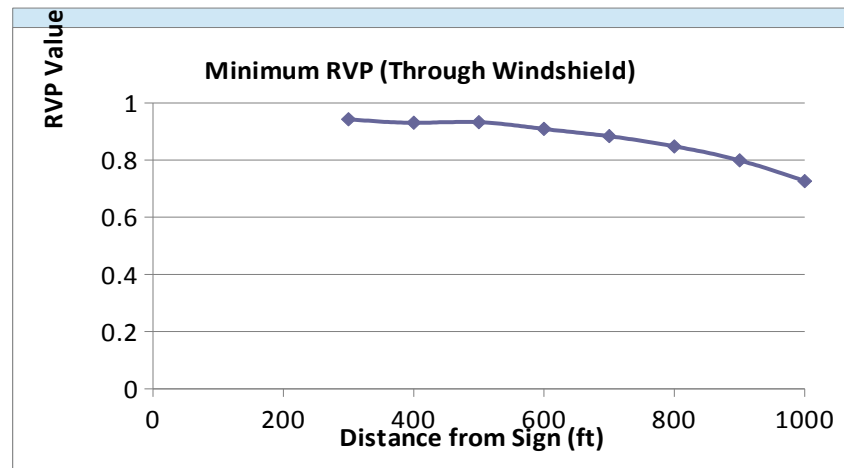
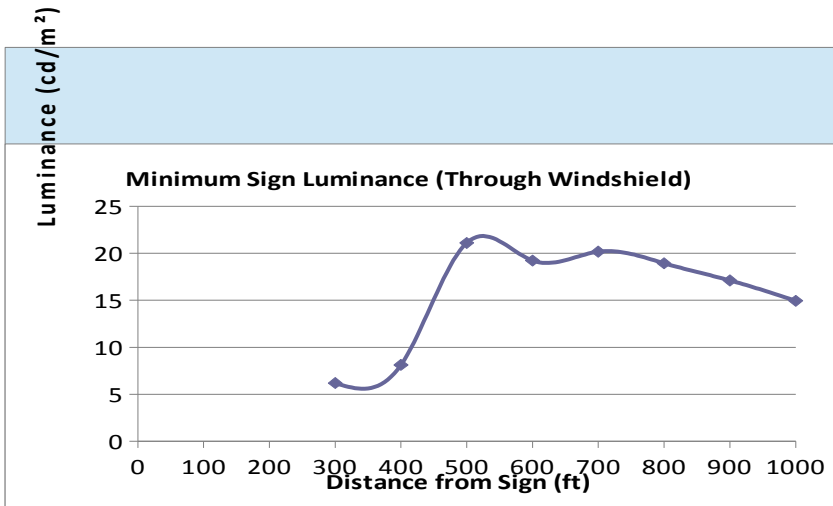
### **Disclaimer**

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**Highway Sign Photometric Calculation Spreadsheet**  
 Lighting Research Center, Rensselaer Polytechnic Institute  
 NYSOT SPR Project C-07-03

Enter values:		
Headlamp height	3.58ft	(2.13 passenger car, 2.79 SUV, 3.58 truck)
Eye height	7.67ft	(3.77 passenger car, 4.83 SUV, 7.67 truck)
Sign height	8.5ft	(21.5 overhead, 8.5 right side)
Lateral offset	16ft	(0 overhead, 16 right side)
Sign tilt	0deg	
Background color	1	(1=white, 2=yellow, 3=orange, 4=red, 5=green, 6=blue, 7=brown)
Sheeting type	B	(A, B, C, D, I, II, III, IV, V, VI, VIII, IX, XI)
Letter height	12in	
Windshield transmittance	0.8	(Default 0.8)
Driver age	60yr	(Default 60)

Distance Ahead (ft)	Entrance Angle (°)	Observation angle (°)	Headlamp Horiz. Angle (°)	Headlamp Vert. Angle (°)	Two-Headlamp Intensity (cd)	Illuminance on Sign (lx)	Reference Entrance Angle (°)	Reference Observation Angle (°)	Coefficient of Retro. (cd/lx/m <sup>2</sup> )	Minimum Luminance (cd/m <sup>2</sup> )	Minimum Relative Visual Performance
100	2.82	2.34	9.09	2.82	382	0.4109	4		#N/A	#N/A	#N/A
200	1.41	1.17	4.57	1.41	971	0.2612	4		#N/A	#N/A	#N/A
300	0.94	0.78	3.05	0.94	1579	0.1889	4	1	41	6.194	0.943
400	0.70	0.59	2.29	0.70	3681	0.2476	4	1	41	8.122	0.930
500	0.56	0.47	1.83	0.56	4538	0.1954	4	0.5	135	21.102	0.932
600	0.47	0.39	1.53	0.47	5956	0.1781	4	0.5	135	19.232	0.909
700	0.40	0.33	1.31	0.40	8504	0.1868	4	0.5	135	20.175	0.884
800	0.35	0.29	1.15	0.35	10430	0.1754	4	0.5	135	18.945	0.848
900	0.31	0.26	1.02	0.31	11926	0.1585	4	0.5	135	17.116	0.799
1000	0.28	0.23	0.92	0.28	12858	0.1384	4	0.5	135	14.947	0.726



**UMTRI (2004) Market-Weighted Low Beam Headlamp Luminous Intensity**

<b>Vert / Horz</b>	<b>-45</b>	<b>-40</b>	<b>-35</b>	<b>-30</b>	<b>-25</b>	<b>-20</b>	<b>-15</b>	<b>-10</b>
<b>0</b>	23	38	55	101	177	323	417	673
<b>0.5</b>	23	36	54	84	143	226	276	414
<b>1</b>	25	38	50	80	115	178	208	288
<b>1.5</b>	25	37	51	78	101	141	176	251
<b>2</b>	25	35	48	71	90	118	146	219
<b>2.5</b>	26	36	46	64	79	108	127	198
<b>3</b>	26	35	44	60	69	87	111	180
<b>3.5</b>	26	35	43	56	59	75	102	158
<b>4</b>	26	34	43	50	56	67	96	147
<b>4.5</b>	27	32	42	46	50	63	90	135
<b>5</b>	27	31	38	42	46	61	88	121
<b>5.5</b>	28	31	34	39	42	57	79	112
<b>6</b>	27	31	34	36	39	54	76	103
<b>6.5</b>	25	28	29	32	38	51	75	97
<b>7</b>	21	25	26	30	37	49	73	90

**Interpolated Luminous Intensity Values for Vertical Angles**

<b>Vert / Horz</b>	<b>-45</b>	<b>-40</b>	<b>-35</b>	<b>-30</b>	<b>-25</b>	<b>-20</b>	<b>-15</b>	<b>-10</b>
<b>2.82</b>	26	35	45	61	73	95	117	187
<b>1.41</b>	25	37	51	78	104	148	182	258
<b>0.94</b>	25	38	50	80	118	184	216	303
<b>0.70</b>	24	37	52	82	132	206	248	362
<b>0.56</b>	23	36	53	83	139	220	267	398
<b>0.47</b>	23	36	54	85	145	232	285	430
<b>0.40</b>	23	36	54	87	150	245	303	464
<b>0.35</b>	23	37	54	89	153	255	318	490
<b>0.31</b>	23	37	54	90	156	262	329	511
<b>0.28</b>	23	37	54	91	158	268	338	527

**Transposed Luminous Intensity Values**

<b>Horz / Vert</b>	<b>0.28</b>	<b>0.31</b>	<b>0.35</b>	<b>0.40</b>	<b>0.47</b>	<b>0.56</b>	<b>0.70</b>	<b>0.94</b>
<b>-45</b>	23	23	23	23	23	23	24	25
<b>-40</b>	37	37	37	36	36	36	37	38
<b>-35</b>	54	54	54	54	54	53	52	50
<b>-30</b>	91	90	89	87	85	83	82	80
<b>-25</b>	158	156	153	150	145	139	132	118
<b>-20</b>	268	262	255	245	232	220	206	184
<b>-15</b>	338	329	318	303	285	267	248	216
<b>-10</b>	527	511	490	464	430	398	362	303
<b>-9</b>	546	527	504	473	433	400	367	311
<b>-8</b>	575	553	526	490	442	408	379	330
<b>-7</b>	602	577	545	504	450	415	389	347
<b>-6</b>	661	630	592	542	476	435	412	372
<b>-5</b>	756	719	672	612	532	482	453	403
<b>-4.5</b>	849	808	756	689	601	542	500	430
<b>4</b>	866	827	779	717	634	575	527	447

-3.5	938	897	844	777	687	621	563	468
-3	1047	999	938	859	755	677	609	496
-2.5	1166	1109	1039	949	828	740	665	539
-2	1378	1300	1203	1077	910	792	698	540
-1.5	1745	1628	1482	1295	1045	881	768	580
-1	2511	2307	2051	1722	1284	1021	874	630
-0.5	3657	3366	3003	2536	1913	1502	1213	731
0	5069	4651	4129	3457	2562	1963	1529	805
0.5	5765	5281	4676	3897	2860	2163	1654	807
1	6562	5963	5214	4252	2968	2170	1683	871
1.5	6568	5968	5217	4252	2966	2162	1664	834
2	6977	6345	5556	4540	3187	2323	1759	820
2.5	6751	6186	5479	4571	3360	2530	1899	848
3	6083	5571	4932	4109	3013	2269	1714	789
3.5	5465	4997	4412	3660	2657	2001	1548	794
4	4076	3733	3303	2751	2015	1541	1224	696
4.5	3529	3225	2846	2358	1708	1304	1060	652
5	2735	2514	2239	1885	1413	1121	945	652
6	1842	1703	1530	1306	1009	829	726	555
7	1403	1301	1174	1010	792	663	595	480
8	1000	940	865	768	640	562	518	445
9	839	799	749	685	599	536	483	396
10	781	744	696	636	555	498	451	374
15	416	405	391	374	351	327	299	253
20	272	265	256	245	231	217	202	177
25	101	101	100	99	98	95	90	81
30	53	53	53	53	52	51	49	45
35	13	13	13	13	13	13	13	13
40	7	7	7	7	7	7	7	7
45	4	4	4	4	4	4	4	4

Distance (ft)	1000	900	800	700	600	500	400	300
Horizontal angle (°)	0.92	1.02	1.15	1.31	1.53	1.83	2.29	3.05

Interpolated Luminous Intensity	6429	5963	5215	4252	2978	2269	1840	790
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<b>-9</b>	<b>-8</b>	<b>-7</b>	<b>-6</b>	<b>-5</b>	<b>-4.5</b>	<b>-4</b>	<b>-3.5</b>	<b>-3</b>	<b>-2.5</b>
715	775	829	939	1093	1221	1213	1315	1486	1672
415	421	426	446	496	561	597	647	708	774
297	318	336	362	390	412	426	443	467	507
255	272	288	301	330	335	351	356	365	372
223	234	253	263	276	286	298	295	297	305
215	225	225	233	242	250	257	256	261	269
192	204	203	211	215	221	228	233	237	246
169	181	185	194	200	202	204	215	217	223
159	169	168	174	176	180	188	197	208	195
144	152	156	155	159	163	176	181	187	203
125	135	144	139	140	155	154	159	168	180
119	127	132	133	139	131	131	134	142	150
112	119	124	126	119	118	116	115	120	126
104	112	118	119	114	112	110	111	112	114
98	107	109	116	111	108	103	100	101	102

<b>-9</b>	<b>-8</b>	<b>-7</b>	<b>-6</b>	<b>-5</b>	<b>-4.5</b>	<b>-4</b>	<b>-3.5</b>	<b>-3</b>	<b>-2.5</b>
200	212	211	219	225	232	239	241	246	254
263	280	297	312	341	349	365	372	384	397
311	330	347	372	403	430	447	468	496	539
367	379	389	412	453	500	527	563	609	665
400	408	415	435	482	542	575	621	677	740
433	442	450	476	532	601	634	687	755	828
473	490	504	542	612	689	717	777	859	949
504	526	545	592	672	756	779	844	938	1039
527	553	577	630	719	808	827	897	999	1109
546	575	602	661	756	849	866	938	1047	1166

<b>1.41</b>	<b>2.82</b>
25	26
37	35
51	45
78	61
104	73
148	95
182	117
258	187
263	200
280	212
297	211
312	219
341	225
349	232
365	239

372	241
384	246
397	254
394	260
417	263
451	273
481	277
477	287
477	295
487	296
456	290
459	282
461	274
460	272
469	276
449	272
491	256
451	244
396	234
362	226
349	211
308	193
295	169
198	119
135	91
76	57
39	26
14	15
8	8
4	5

200	100
4.57	9.09

485	191
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<b>-2</b>	<b>-1.5</b>	<b>-1</b>	<b>-0.5</b>	<b>0</b>	<b>0.5</b>	<b>1</b>	<b>1.5</b>	<b>2</b>	<b>2.5</b>
2080	2796	4352	6272	8830	10124	11952	11972	12662	11838
835	932	1087	1633	2159	2393	2391	2387	2578	2815
500	532	567	607	619	589	662	620	578	577
370	392	425	453	446	452	448	419	432	435
332	333	348	360	376	389	395	395	389	380
270	274	291	296	317	329	330	314	300	296
254	257	262	266	269	276	277	276	272	262
229	230	233	239	250	253	244	236	234	233
200	201	203	208	211	217	218	215	216	215
210	211	208	203	199	200	198	198	198	207
185	188	183	178	182	178	177	173	177	186
159	163	159	158	169	169	174	176	175	173
131	137	143	152	148	145	148	151	153	154
117	122	126	137	136	132	128	131	130	127
104	107	115	124	123	117	112	109	109	110

<b>-2</b>	<b>-1.5</b>	<b>-1</b>	<b>-0.5</b>	<b>0</b>	<b>0.5</b>	<b>1</b>	<b>1.5</b>	<b>2</b>	<b>2.5</b>
260	263	273	277	287	295	296	290	282	274
394	417	451	481	477	477	487	456	459	461
540	580	630	731	805	807	871	834	820	848
698	768	874	1213	1529	1654	1683	1664	1759	1899
792	881	1021	1502	1963	2163	2170	2162	2323	2530
910	1045	1284	1913	2562	2860	2968	2966	3187	3360
1077	1295	1722	2536	3457	3897	4252	4252	4540	4571
1203	1482	2051	3003	4129	4676	5214	5217	5556	5479
1300	1628	2307	3366	4651	5281	5963	5968	6345	6186
1378	1745	2511	3657	5069	5765	6562	6568	6977	6751





<b>3</b>	<b>3.5</b>	<b>4</b>	<b>4.5</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
10688	9678	7168	6261	4717	3092	2319	1540	1200	1120
2520	2206	1684	1415	1201	875	694	582	560	519
551	600	560	547	576	511	451	426	373	354
440	440	424	479	423	370	342	332	294	282
369	367	365	362	345	303	294	263	237	219
295	298	291	274	276	271	264	231	207	185
259	264	261	246	225	213	204	200	185	159
234	236	240	246	223	215	191	182	172	152
214	219	228	215	222	181	174	153	145	126
196	214	215	202	192	165	162	143	136	115
195	199	203	196	173	159	152	131	122	108
181	187	192	185	169	149	157	122	114	105
155	153	149	147	146	145	121	115	103	97
130	135	137	138	138	134	129	101	94	91
111	119	121	125	120	116	108	93	88	85

<b>3</b>	<b>3.5</b>	<b>4</b>	<b>4.5</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
272	276	272	256	244	234	226	211	193	169
460	469	449	491	451	396	362	349	308	295
789	794	696	652	652	555	480	445	396	374
1714	1548	1224	1060	945	726	595	518	483	451
2269	2001	1541	1304	1121	829	663	562	536	498
3013	2657	2015	1708	1413	1009	792	640	599	555
4109	3660	2751	2358	1885	1306	1010	768	685	636
4932	4412	3303	2846	2239	1530	1174	865	749	696
5571	4997	3733	3225	2514	1703	1301	940	799	744
6083	5465	4076	3529	2735	1842	1403	1000	839	781



<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>	<b>40</b>	<b>45</b>
514	333	107	55	13	6	4
340	224	97	52	13	7	4
241	171	79	44	13	7	4
188	127	75	38	14	8	4
146	110	71	33	15	8	5
129	97	63	27	16	7	4
113	88	53	25	14	8	5
102	78	50	23	13	8	5
92	72	45	21	12	8	5
86	65	39	21	12	8	5
77	59	38	21	11	8	5
69	50	35	20	11	7	4
65	49	33	18	11	7	4
66	47	33	18	10	8	5
60	42	30	17	10	8	5

<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>	<b>40</b>	<b>45</b>
119	91	57	26	15	8	5
198	135	76	39	14	8	4
253	177	81	45	13	7	4
299	202	90	49	13	7	4
327	217	95	51	13	7	4
351	231	98	52	13	7	4
374	245	99	53	13	7	4
391	256	100	53	13	7	4
405	265	101	53	13	7	4
416	272	101	53	13	7	4



## Retroreflectivity Data by Type

Type	Type Key Value	Color	Color Key Value	Ref. Obs. Angle	Ref OA Key Value	Ref. Ent. Angle	Ref EA Key Value	Key
B	33000	1	100	4	40			33140
B	33000	1	100	4	40			33140
B	33000	1	100	4	40	1	9	33149
B	33000	1	100	4	40	1	9	33149
B	33000	1	100	4	40	0.5	5	33145
B	33000	1	100	4	40	0.5	5	33145
B	33000	1	100	4	40	0.5	5	33145
B	33000	1	100	4	40	0.5	5	33145
B	33000	1	100	4	40	0.5	5	33145
B	33000	1	100	4	40	0.5	5	33145

Key	Coeff of Retro.	Type	Type Key
1132	30	A	22000
1135	15	B	33000
1142	70	C	44000
1145	30	D	55000
1232	22	I	1000
1235	13	II	2000
1242	50	III	3000
1245	22	IV	4000
1332	7	IX	9000
1335	4	V	5000
1342	25	VI	6000
1345	13	VIII	8000
1432	6	XI	11000
1435	3		
1442	14		
1445	7.5		
1532	3.5		
1535	2.2		
1542	9		
1545	4.5		
1632	1.7		
1635	0.8		
1642	4		
1645	2		
1732	0.3		
1735	0.2		
1742	1		
1745	0.3		
2132	60		
2135	28		
2142	140		
2145	50		

2232	36
2235	20
2242	100
2245	33
2332	22
2335	12
2342	60
2345	20
2432	12
2435	6
2442	30
2445	10
2532	10
2535	6
2542	30
2545	9
2632	4
2635	2
2642	10
2645	3
2732	2
2735	1
2742	5
2745	2
3131	180
3132	150
3135	65
3141	300
3142	250
3145	95
3231	120
3232	100
3235	45
3241	200
3242	170
3245	62
3331	72
3332	60
3335	25
3341	120
3342	100
3345	30
3431	32
3432	25
3435	10
3441	54
3442	45
3445	15

3531	32
3532	25
3535	10
3541	54
3542	45
3545	15
3631	14
3632	11
3635	5
3641	24
3642	20
3645	7.5
3731	10
3732	8.5
3735	3.5
3741	14
3742	12
3745	5
4131	240
4132	170
4135	72
4141	500
4142	360
4145	150
4231	175
4232	135
4235	54
4241	380
4242	270
4245	110
4331	94
4332	68
4335	28
4341	200
4342	145
4345	60
4431	42
4432	30
4435	13
4441	90
4442	65
4445	27
4531	32
4532	25
4535	10
4541	70
4542	50
4545	21

4631	20
4632	14
4635	6
4641	42
4642	30
4645	13
4731	12
4732	8.5
4735	3.5
4741	25
4742	18
4745	7.5
5131	1100
5132	400
5135	75
5141	2000
5142	700
5145	160
5231	740
5232	270
5235	51
5241	1300
5242	470
5245	110
5331	440
5332	160
5335	30
5341	800
5342	280
5345	64
5431	200
5432	72
5435	13
5441	360
5442	120
5445	28
5531	200
5532	72
5535	13
5541	360
5542	120
5545	28
5631	88
5632	32
5635	6
5641	160
5642	56
5645	13



6131	300
6132	200
6135	85
6141	750
6142	500
6145	225
6231	210
6232	140
6235	60
6241	525
6242	350
6245	160
6331	75
6332	50
6335	21
6341	190
6342	125
6345	56
6431	42
6432	28
6435	12
6441	105
6442	70
6445	32
6531	36
6532	24
6535	10
6541	90
6542	60
6545	27
6631	27
6632	18
6635	7.7
6641	68
6642	45
6645	20
8131	460
8132	325
8135	115
8141	1000
8142	700
8145	250
8231	345
8232	245
8235	86
8241	750
8242	525
8245	190

8331	175
8332	120
8335	43
8341	375
8342	265
8345	94
8431	69
8432	49
8435	17
8441	150
8442	105
8445	38
8531	46
8532	33
8535	12
8541	100
8542	70
8545	25
8631	21
8632	15
8635	5
8641	45
8642	32
8645	11
8731	14
8732	10
8735	3.5
8741	30
8742	21
8745	7.5
9131	370
9132	215
9135	135
9139	45
9141	660
9142	380
9145	240
9149	80
9231	280
9232	162
9235	100
9239	34
9241	500
9242	285
9245	180
9249	60
9331	140
9332	82

9335	50
9339	17
9341	250
9342	145
9345	90
9349	30
9431	74
9432	43
9435	27
9439	9
9441	130
9442	76
9445	48
9449	16
9531	37
9532	22
9535	14
9539	4.5
9541	66
9542	38
9545	24
9549	8
9631	17
9632	10
9635	6
9639	2
9641	30
9642	17
9645	11
9649	3.6
11131	325
11132	220
11135	150
11139	45
11141	830
11142	580
11145	420
11149	120
11231	245
11232	165
11235	110
11239	34
11241	620
11242	435
11245	315
11249	90
11331	115
11332	77

11335	53
11339	16
11341	290
11342	200
11345	150
11349	42
11431	50
11432	33
11435	23
11439	7
11441	125
11442	87
11445	63
11449	18
11531	33
11532	22
11535	15
11539	5
11541	83
11542	58
11545	42
11549	12
11631	15
11632	10
11635	7
11639	2
11641	37
11642	26
11645	19
11649	5
11731	10
11732	7
11735	5
11739	1
11741	25
11742	17
11745	13
11749	4
22132	120
22135	50
22139	2.5
22142	240
22145	95
22149	4.5
22232	90
22235	35
22239	2
22242	180

22245	70
22249	3.5
22332	45
22335	20
22339	1
22342	90
22345	35
22349	1.8
22432	20
22435	7
22439	0.5
22442	35
22445	15
22449	0.7
22532	12
22535	4.5
22539	0.3
22542	25
22545	9.5
22549	0.5
22632	6
22635	2.5
22639	0.2
22642	12
22645	4.5
22649	0.3
22732	3.5
22735	1.5
22739	0.1
22742	7.5
22745	3
22749	0.2
33132	120
33135	45
33139	5.5
33142	335
33145	135
33149	41
33232	85
33235	35
33239	4.5
33242	250
33245	100
33249	12.5
33332	45
33335	17
33339	2.5
33342	125

33345	50
33349	6.5
33432	17
33435	7
33439	1
33442	50
33445	20
33449	2.5
33532	12
33535	4.5
33539	0.5
33542	35
33545	14
33549	1.5
33632	6
33635	2.5
33639	0.3
33642	17
33645	6.5
33649	1
33732	3.5
33735	1.5
33739	0.2
33742	10
33745	4
33749	0.5
44132	200
44135	80
44139	20
44142	580
44145	235
44149	60
44232	150
44235	60
44239	15
44242	440
44245	175
44249	45
44332	75
44335	30
44339	7.5
44342	220
44345	85
44349	20
44432	30
44435	10
44439	3
44442	85

44445	35
44449	8.5
44532	20
44535	8
44539	2
44542	60
44545	25
44549	5.5
44632	10
44635	4
44639	1
44642	30
44645	12
44649	3
44732	6
44735	2.5
44739	0.5
44742	17
44745	7
44749	1.8
55132	200
55135	160
55139	40
55142	580
55145	465
55149	120
55232	150
55235	120
55239	30
55242	440
55245	350
55249	85
55332	75
55335	60
55339	15
55342	220
55345	175
55349	45
55432	30
55435	25
55439	6
55442	85
55445	70
55449	17
55532	20
55535	16
55539	4
55542	60

55545	45
55549	10
55632	10
55635	8
55639	2
55642	30
55645	23
55649	6
55732	6
55735	5
55739	1
55742	17
55745	14
55749	3.5





























## Relative Visual Performance

Age (yr)	Size (ft <sup>2</sup> )	Distance (ft)	Target size ( $\mu$ sr)	Luminance (cd/m <sup>2</sup> )	Pupil radius (mm)	Retinal illuminance (age-corrected, Td):
60	0.518	100	51.8	#N/A	#N/A	#N/A
60	0.518	200	12.9	#N/A	#N/A	#N/A
60	0.518	300	5.8	6.19	2.10	27.5
60	0.518	400	3.2	8.12	2.06	34.7
60	0.518	500	2.1	21.10	1.93	78.6
60	0.518	600	1.4	19.23	1.94	72.6
60	0.518	700	1.1	20.18	1.93	75.6
60	0.518	800	0.8	18.95	1.94	71.7
60	0.518	900	0.6	17.12	1.95	65.7
60	0.518	1000	0.5	14.95	1.97	58.5

Target luminance contrast:	Target solid angular size (sr):	Threshold contrast:	P1:	P2:	P3:	Half-saturation constant (K):	P1:
0.80	5.175E-05	#N/A	-1.102E-01	#N/A	1.100E+00	#N/A	-5.967E-01
0.80	1.294E-05	#N/A	-5.967E-01	#N/A	1.100E+00	#N/A	-1.190E+00
0.80	5.750E-06	0.06	-9.412E-01	2.883E-01	1.100E+00	7.442E-02	-1.541E+00
0.80	3.234E-06	0.08	-1.190E+00	3.102E-01	1.100E+00	9.770E-02	-1.791E+00
0.80	2.070E-06	0.09	-1.383E+00	3.799E-01	1.100E+00	1.115E-01	-1.985E+00
0.80	1.438E-06	0.12	-1.541E+00	3.736E-01	1.100E+00	1.424E-01	-2.143E+00
0.80	1.056E-06	0.15	-1.675E+00	3.769E-01	1.100E+00	1.746E-01	-2.277E+00
0.80	8.086E-07	0.20	-1.791E+00	3.726E-01	1.100E+00	2.124E-01	-2.393E+00
0.80	6.389E-07	0.25	-1.894E+00	3.656E-01	1.100E+00	2.557E-01	-2.496E+00
0.80	5.175E-07	0.32	-1.985E+00	3.560E-01	1.100E+00	3.059E-01	-2.587E+00

P2:	Maximum response ( $R_{max}$ ):	Performance (R):	Reaction time (ms):	Visibility level:	Relative Visual Performance (RVP):
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
-4.731E-01	2.982E-03	2.693E-03	371	13.9	0.943
-3.820E-01	3.002E-03	2.625E-03	381	10.4	0.930
-1.181E-01	3.072E-03	2.635E-03	380	9.0	0.932
-1.379E-01	3.065E-03	2.513E-03	398	6.7	0.909
-1.275E-01	3.068E-03	2.395E-03	418	5.2	0.884
-1.413E-01	3.064E-03	2.246E-03	445	4.0	0.848
-1.650E-01	3.056E-03	2.069E-03	483	3.2	0.799
-1.993E-01	3.046E-03	1.852E-03	540	2.5	0.726