

BOLD: Birmingham Object Lighting Database

Lighting positions

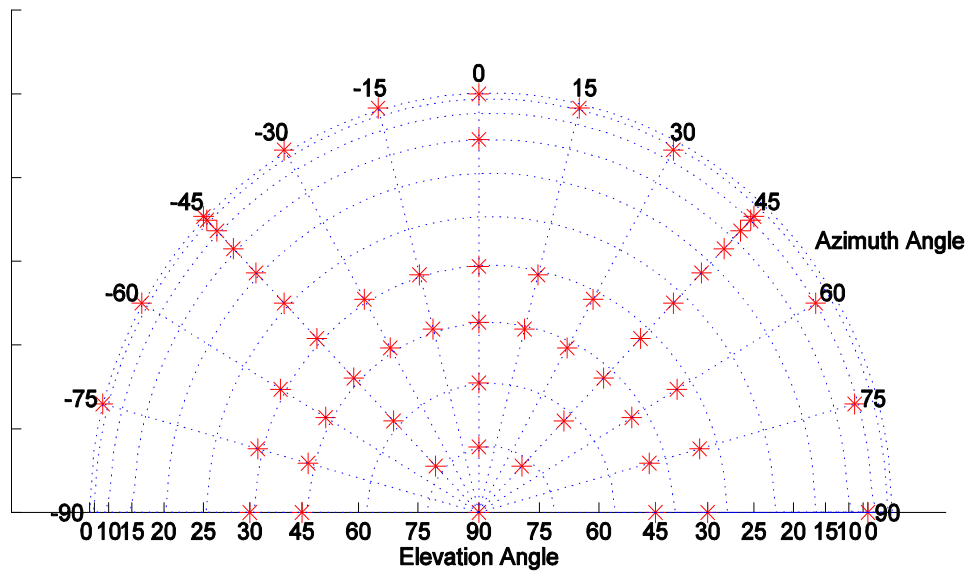
Object and surface photographs

Objects and surfaces were photographed in BULB, a 1m diameter integrating sphere. This provided a diffuse light via the walls of the sphere and point source lights at designated locations.



For each object these were 56 images taken with different spot lights, 56 more with the same spot lights and the diffuse light on and 1 with diffuse only. Spot light positions are shown below.

The cameras were placed either side of 0 Azimuth, Zero elevation.



Elevation and Azimuth combinations. Note 0 degrees azimuth is listed in the database as west. West and east correspond to left and right of the line of sight respectively but are used instead of 'left' and 'right' which are used to denote the camera positions.

Elevations 0:
Azimuths 90W – 0W – 75E in 15 degree steps.

Elevations 30 and 45:
Azimuths 90W – 0W – 90E in 15 degree steps.

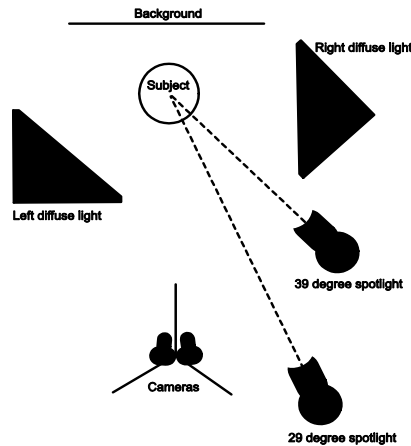
Elevations 15, 60 and 75:
Azimuths 45W, 0W and 45E

Elevations 5, 10, 20, and 25
Azimuths 45E and 45W

Elevation 90
Azimuth 0W

Face photographs

Faces were photographed in a dark student with 2 'softbox' diffuse lights and two spot lights. The spot lights were tungsten filaments and the softboxes were florescent tubes with tungsten gel filters. The room layout is shown below.



Lighting options were as follows.

Diffuse = left, right, both or none.

Lighting used for frontal poses

Left, right and both diffuse, left diffuse with spot and spot only at the following azimuths and elevations.

Azimuth 29E or 39E

Elevations 0, 4.5, 9, 13.5, 18, 22.5 and 27 degrees

Lighting used for portrait poses

Left and both diffuse, left diffuse with spot and spot only at the following azimuths and elevations.

Azimuth 29E

Elevations 0, 4.5, 9, 13.5, 18, 22.5 and 27 degrees

External photographs

External images were taken on sunny days with the sun as a spotlight and the sky as a diffuse light. Sun positions were calculated based on the position of the sun at the time of the photograph (estimated from latitude and longitude estimates the date and time of day), the compass heading of the camera line of sight and the slant (declination) of the camera. The relative sun positions are very approximate, vary from image to image and are listed below.

Sun positions for external photography

Absolute							Relative		
Image	Latitude	Longitude	Sun Azimuth	Sun Elevation	Camera Heading	Camera Declination (slant)	Relative Azimuth	Relative Elevation	'East' = right or 'West' = left of camera viewpoint
1	52.4495	1.932664	189.14	38.3	187	50	92	88	East
2	52.44929	1.93315	192.94	38.06	206	50	91	80	West
3	52.44953	1.933289	197	37.55	174	50	90	72	East
4	52.44944	1.933558	200.08	37.06	82	50	45	6	East
5	52.44867	1.935144	203.12	36.5	324	50	44	4	West
6	52.45029	1.934717	146.02	32.11	276	50	41	-4	West
7	52.44985	1.934717	148.83	33.43	3	50	30	-10	East
8	52.44877	1.935294	152.28	34.32	242	50	65	21	West
9	52.44989	1.930917	206.29	12.84	98	-5	73	14	East
10	52.44989	1.930917	207.43	12.5	98	-5	72	14	East
11	52.44989	1.930917	208.57	12.14	98	-5	71	14	East
12	52.44999	1.932544	211.27	11.23	88	-10	60	17	East
13	53.11665	1.932294	212.55	10.18	88	-12	59	17	East
14	52.44972	1.929772	214.83	9.9	94	-25	67	22	East
15	52.44931	1.929617	216.14	9.36	-2	-10	43	17	West
16	52.44931	1.929617	216.8	9.09	-2	-10	43	17	West
17	52.44931	1.929617	217.45	8.82	-2	-10	44	16	West
18	52.44872	1.929692	219.16	8.07	148	-15	110	3	East
19	52.44872	1.929692	219.59	7.87	148	-15	110	3	East
20	52.44862	1.929556	220.67	7.38	148	3	107	8	East
21	52.44955	1.932683	178.15	15.34	179	50	115	65	West
22	52.44907	1.932833	181.03	15.36	188	25	139	40	West
23	52.44881	1.931758	182.95	15.31	22	23	20	-6	East

24	52.44881	1.931758	184.62	15.24	22	4	20	11	East
25	52.44847	1.930783	186.78	15.11	64	30	54	-2	East
26	52.44847	1.930783	188.69	14.94	64	6	55	11	East
27	52.44849	1.930317	190.59	14.74	64	28	51	-3	East
28	52.44849	1.930317	191.78	14.59	64	5	52	11	East
29	52.44849	1.930317	192.49	14.49	64	5	52	11	East
30	52.44849	1.930317	193.2	14.39	64	5	51	11	East
31	52.44849	1.930317	194.14	14.24	64	25	48	-2	East
32	52.44847	1.930264	194.85	14.13	64	13	48	5	East
33	52.45093	1.930958	218.66	6.85	48	5	9	2	East
34	52.45099	1.930022	219.51	6.47	12	10	27	-2	West
35	52.45003	1.933311	221.61	5.48	92	20	51	-7	East
36	52.45011	1.933042	167.74	13.33	-2	15	10	-1	East
37	52.45011	1.933042	168.44	13.42	-2	25	15	-11	East
38	52.45109	1.932794	169.61	13.57	94	0	104	14	East
39	52.4514	1.931528	173.13	13.91	298	15	53	5	West
40	52.4514	1.931528	174.31	13.99	268	0	86	14	West
41	52.45121	1.931339	175.97	14.08	96	30	91	17	East
42	52.45121	1.931339	177.86	14.15	96	23	92	16	East
43	52.45114	1.931308	179.75	14.17	233	18	118	24	West
44	52.45114	1.931308	180.93	14.17	233	25	116	28	West
45	52.44876	1.9316	166.58	13.11	40	-20	62	24	East
46	52.44876	1.9316	167.52	13.25	40	-25	64	27	East
47	52.44865	1.930086	168.92	13.44	-2	-30	44	43	East
48	52.44865	1.930086	169.39	13.49	-2	-30	44	43	East
49	52.44865	1.930086	169.85	13.55	-2	-30	44	43	East
50	52.44847	1.929497	171.73	13.74	36	-7	49	19	East
51	52.44847	1.929497	172.2	13.79	36	-15	52	24	East

52	52.44856	1.929514	173.61	13.9	156	35	128	47	East
53	52.44971	1.932258	206.09	13.82	-2	20	28	-4	West
54	52.44986	1.930644	207.25	13.48	148	-5	121	11	East
55	52.44986	1.930644	208.4	13.12	148	11	115	18	East
56	52.44986	1.930644	208.86	12.98	148	5	117	15	East
57	52.44986	1.930644	209.77	12.68	76	5	46	9	East
58	52.44986	1.930644	210.23	12.53	76	5	46	9	East
59	52.44986	1.930644	210.68	12.37	112	10	79	11	East
60	52.44977	1.929631	212.04	11.9	100	0	68	12	East
61	52.44977	1.929631	212.71	11.65	100	-30	77	21	East
62	52.44977	1.929631	213.61	11.32	61	-15	38	25	East
63	52.44864	1.930453	214.73	10.89	338	-15	62	19	West
64	52.44864	1.930453	215.39	10.63	338	-25	66	23	West
65	52.44864	1.930453	216.5	10.18	338	5	58	8	West
66	52.44864	1.930453	216.94	10	338	25	58	-3	West
67	52.44864	1.930453	218.47	9.35	334	2	64	8	West
68	52.45055	1.933494	159.5	15.45	20	2	42	14	East
69	52.45055	1.933494	160.21	15.61	20	5	40	12	East
70	52.45044	1.935636	161.88	15.96	14	-15	44	28	East
71	52.45044	1.935636	162.6	16.1	14	-23	50	35	East
72	52.45044	1.935636	163.08	16.19	14	-25	51	37	East
73	52.45044	1.935636	164.04	16.36	78	-12	97	15	East
74	52.45051	1.936347	166.22	16.71	142	30	128	43	East
75	52.45034	1.936436	167.43	16.89	220	-5	127	14	West
76	52.45034	1.936436	168.41	17.01	238	0	109	17	West
77	52.45132	1.935147	170.36	17.24	18	15	27	4	East
78	52.45132	1.935147	171.1	17.31	28	5	38	13	East
79	52.45149	1.934236	173.56	17.52	344	0	20	18	West

80	52.45149	1.934236	174.29	17.57	344	-5	25	22	West
81	52.45151	1.934236	175.03	17.61	278	-15	83	20	West
82	52.45151	1.934236	176.51	17.68	303	5	54	15	West
83	52.45056	1.932847	135.46	34.04	318	8	26	26	East
84	52.45056	1.932847	137.11	34.68	318	20	15	15	East
85	52.45056	1.932847	138.77	35.29	318	15	20	20	West
86	52.45056	1.932847	139.61	35.58	318	15	21	21	West
87	52.44888	1.932753	142.46	36.54	220	5	97	37	West
88	52.44888	1.932753	143.91	37	220	-3	103	36	West
89	52.44888	1.932753	144.78	37.26	276	16	48	26	West
90	52.44888	1.932753	145.66	37.52	342	0	40	38	East
91	52.44888	1.932753	147.45	38.03	342	0	40	38	East
92	52.44973	1.929167	152.31	39.25	348	0	42	39	East
93	52.44973	1.929167	153.86	39.59	28	30	45	19	East
94	52.44973	1.929167	154.8	39.79	28	30	44	19	East
95	52.45138	1.927853	157.01	40.22	38	0	68	40	East
96	52.45138	1.927853	158.6	40.51	38	10	60	35	East
97	52.45138	1.927853	159.88	40.72	28	0	60	41	East
98	52.45138	1.927853	161.17	40.92	321	-10	54	50	West
99	52.45138	1.927853	162.14	41.07	321	-13	57	53	West