

CENTRAL LINE – MARCH 2009

Average Surface (above ground) temperature results over whole monitoring period

	Outside	Middle	Door	Front	Rear	Average
EB MP	13.00 °C	22.36 °C	19.27 °C	20.48 °C	21.12 °C	19.25 °C
EB IP	14.75 °C	20.42 °C	19.36 °C	20.29 °C	20.27 °C	19.02 °C
EB EP	14.13 °C	21.15 °C	20.03 °C	21.15 °C	20.98 °C	19.49 °C
WB MP	14.32 °C	21.52 °C	19.58 °C	20.35 °C	20.67 °C	19.29 °C
WB IP	14.43 °C	20.15 °C	19.41 °C	20.27 °C	19.95 °C	18.84 °C
WB EP	12.56 °C	20.62 °C	18.62 °C	19.68 °C	19.84 °C	18.27 °C
Average	13.87 °C	21.04 °C	19.38 °C	20.37 °C	20.47 °C	19.02 °C

EB = Eastbound

WB = Westbound

IP = Inter peak

MP = morning peak

EP = evening peak

Average In-Tunnel temperature results over whole monitoring period

	Outside	Middle	Door	Front	Rear	Average
EB MP	21.31 °C	23.09 °C	22.69 °C	22.39 °C	22.00 °C	22.30 °C
EB IP	22.16 °C	21.97 °C	22.17 °C	21.52 °C	21.15 °C	21.79 °C
EB EP	22.27 °C	23.09 °C	22.96 °C	22.08 °C	21.65 °C	22.41 °C
WB MP	22.21 °C	23.20 °C	23.54 °C	22.35 °C	23.09 °C	22.88 °C
WB IP	22.36 °C	21.97 °C	22.30 °C	21.73 °C	21.54 °C	21.98 °C
WB EP	22.33 °C	22.95 °C	22.93 °C	21.86 °C	21.39 °C	22.29 °C
Average	22.11 °C	22.71 °C	22.76 °C	21.99 °C	21.80 °C	22.28 °C

Average total temperature results over whole monitoring period

	Outside	Middle	Door	Front	Rear	Average
EB MP	17.15 °C	22.73 °C	20.98 °C	21.43 °C	21.56 °C	20.77 °C
EB IP	18.27 °C	21.16 °C	20.69 °C	20.88 °C	20.69 °C	20.34 °C
EB EP	18.07 °C	22.09 °C	21.45 °C	21.60 °C	21.30 °C	20.90 °C
WB MP	18.01 °C	22.30 °C	21.43 °C	21.29 °C	21.81 °C	20.97 °C
WB IP	18.24 °C	21.03 °C	20.80 °C	20.97 °C	20.71 °C	20.35 °C
WB EP	17.75 °C	21.86 °C	20.91 °C	20.84 °C	20.67 °C	20.40 °C
Average	17.92 °C	21.86 °C	21.04 °C	21.17 °C	21.12 °C	20.62 °C

CENTRAL LINE – NOVEMBER 2008

Average Eastbound Train temperature results over whole monitoring period

Eastbound Morning Peak	Average Temp for whole line	Average for Ealing Broadway to White City	Average for Tunnel Section	Average for Stratford to Laytonstone	Average for Redbridge Tunnel	Average for Newbury Park to Hainault
Outside sensor	19.60 °C	13.16 °C	23.85 °C	18.19 °C	19.67 °C	15.29 °C
Door sensor	22.20 °C	19.99 °C	24.03 °C	22.77 °C	21.91 °C	19.05 °C
Back sensor	22.35 °C	20.50 °C	23.39 °C	23.42 °C	22.53 °C	20.50 °C
Front sensor	22.43 °C	21.53 °C	23.02 °C	23.45 °C	22.41 °C	21.29 °C

Eastbound Off-Peak	Average Temp for whole line	Average for Ealing Broadway to White City	Average for Tunnel Section	Average for Stratford to Laytonstone	Average for Redbridge Tunnel	Average for Newbury Park to Hainault
Outside sensor	20.94 °C	15.77 °C	24.95 °C	19.22 °C	20.85 °C	16.95 °C
Door sensor	23.25 °C	20.95 °C	24.79 °C	23.97 °C	23.23 °C	21.98 °C
Back sensor	23.14 °C	21.26 °C	23.75 °C	24.62 °C	23.57 °C	22.98 °C
Front sensor	23.22 °C	22.16 °C	23.58 °C	24.44 °C	23.54 °C	22.98 °C

Eastbound Evening Peak	Average Temp for whole line	Average for Ealing Broadway to White City	Average for Tunnel Section	Average for Stratford to Laytonstone	Average for Redbridge Tunnel	Average for Newbury Park to Hainault
Outside sensor	20.76 °C	15.64 °C	24.90 °C	19.95 °C	21.25 °C	17.01 °C
Door sensor	23.63 °C	20.45 °C	25.29 °C	25.12 °C	24.15 °C	22.36 °C
Back sensor	23.18 °C	21.07 °C	23.56 °C	25.11 °C	23.91 °C	23.28 °C
Front sensor	23.98 °C	21.72 °C	24.47 °C	25.82 °C	24.90 °C	24.02 °C

CENTRAL LINE – NOVEMBER 2008

Average Westbound Train temperature results over whole monitoring period

Westbound Morning Peak	Average Temp for whole line	Average for Ealing Broadway to White City	Average for Tunnel Section	Average for Stratford to Leytonstone	Average for Redbridge Tunnel	Average for Newbury Park to Hainault
Outside sensor	20.92 °C	18.38 °C	24.64 °C	16.11 °C	18.69 °C	14.70 °C
Door sensor	23.51 °C	23.77 °C	24.93 °C	20.81 °C	21.36 °C	21.30 °C
Back sensor	23.42 °C	24.46 °C	24.15 °C	21.26 °C	21.57 °C	22.25 °C
Front sensor	23.58 °C	24.77 °C	24.44 °C	21.19 °C	21.62 °C	21.77 °C

Westbound Off-Peak	Average Temp for whole line	Average for Ealing Broadway to White City	Average for Tunnel Section	Average for Stratford to Leytonstone	Average for Redbridge Tunnel	Average for Newbury Park to Hainault
Outside sensor	20.96 °C	17.53 °C	24.88 °C	16.83 °C	19.40 °C	15.59 °C
Door sensor	22.99 °C	23.27 °C	24.67 °C	20.51 °C	21.06 °C	19.80 °C
Back sensor	22.85 °C	24.05 °C	23.39 °C	21.31 °C	21.41 °C	21.55 °C
Front sensor	22.86 °C	24.39 °C	23.44 °C	21.18 °C	21.16 °C	21.28 °C

Westbound Evening Peak	Average Temp for whole line	Average for Ealing Broadway to White City	Average for Tunnel Section	Average for Stratford to Leytonstone	Average for Redbridge Tunnel	Average for Newbury Park to Hainault
Outside sensor	21.19 °C	19.18 °C	25.03 °C	16.36 °C	19.13 °C	15.42 °C
Door sensor	23.79 °C	25.26 °C	25.09 °C	21.18 °C	21.81 °C	21.91 °C
Back sensor	22.96 °C	25.24 °C	23.53 °C	21.20 °C	21.18 °C	21.82 °C
Front sensor	23.83 °C	25.90 °C	24.49 °C	21.99 °C	22.17 °C	22.52 °C

Summary of the average temperatures over the complete Central Line during the whole monitoring period

	East Bound Morning Peak	East Bound Off Peak	East Bound Evening Peak	West Bound Morning Peak	West Bound Off Peak	West Bound Evening Peak
Outside sensor	19.60°C	20.94°C	20.76 °C	20.92 °C	20.96 °C	21.19 °C
Door sensor	22.20°C	23.25°C	23.63 °C	23.51 °C	22.99 °C	23.79 °C
Back sensor	22.35°C	23.14°C	23.18 °C	23.42 °C	22.85 °C	22.96 °C
Front sensor	22.43°C	23.22°C	23.98 °C	23.58 °C	22.86 °C	23.83 °C

VICTORIA – FEB 2009 – Rolling Stock No longer in Service

Average Air Temperature for whole February period

	Outside (Tunnel)	In-car (Middle)	Door	In-car (Front)	In-car (Rear)
North Bound Morning Peak	23.76 °C	23.90 °C	24.18 °C	24.19 °C	24.26 °C
North Bound Inter Peak	25.22 °C	26.04 °C	25.98 °C	26.37 °C	26.47 °C
North Bound Evening Peak	25.12 °C	25.81 °C	25.66 °C	25.97 °C	25.84 °C
South Bound Morning Peak	24.89 °C	25.34 °C	25.22 °C	25.31 °C	25.85 °C
South Bound IP South Bound Evening Peak	25.52 °C	26.34 °C	26.02 °C	26.59 °C	26.84 °C
	25.68 °C	26.46 °C	26.22 °C	26.42 °C	26.93 °C

VICTORIA – NOV 2008 – Rolling Stock No longer in Service

Average Air Temperature for whole November period

	Outside (Tunnel)	In-car (Middle)	Door	In-car (Front)	In-car (Rear)
North Bound Morning Peak	25.90°C	26.05°C	25.79°C	25.62°C	25.75°C
North Bound IP North Bound Evening Peak	27.32°C	27.48°C	27.37°C	27.46°C	27.29°C
	27.54°C	27.93°C	27.91°C	27.92°C	27.84°C
South Bound Morning Peak	26.97°C	27.68°C	27.32°C	27.42°C	27.49°C
South Bound IP South Bound Evening Peak	27.74°C	28.30°C	28.02°C	28.08°C	28.34°C
	28.13°C	29.07°C	28.63°C	28.84°C	29.02°C

			Eastbound																Westbound					
Day	Time	Car		Shepherd's Bush	Holland Park	Nottinghill Gate	Queensway	Lancaster Gate	Marble Arch	Bond Street	Oxford Circus	Holborn	Chancery Lane	St Paul's	Bank	Liverpool Street	Bethnal Green	Mile End	Stratford	Mile End	Bethnal Green	Liverpool Street	Bank	St Paul's
Wednesday	1pm	6	Time	13:39	13:41	13:43	13:44	13:46	13:48	13:49	13:50	13:54	13:55	13:57	13:59	14:01	14:05	14:07	14:10	14:18	14:20	14:23	14:25	14:28
			Temperature	27.7	27.6	27.7	27.8	28	28.3	28.6	28.9	29.4	29.5	29.6	29.7	29.9	29.9	29.7	29.8	26.2	26.9	27.7	28	28.5
Wednesday	2pm	3	Time	14:33	14:35	14:36	14:38	14:40	14:42	14:43	14:44	14:47	14:49	14:50	14:52	14:54	14:57	15:00	15:03	15:10	15:12	15:15	15:18	15:19
			Temperature	28.6	29.1	29.6	29.9	30.3	30.8	31.2	31.4	31.9	31.9	32	32.1	32.3	32.2	32.1	32.1	28.6	29.2	29.9	30.3	30.8
Wednesday	3pm	6	Time	13:20	15:23	15:25	15:26	15:28	15:29	15:32	15:33	15:36	15:39	15:41	15:43	15:45	15:47	15:50	15:53	16:00	16:03	16:05	16:07	16:09
			Temperature	30.4	30.5	30.7	30.9	31.1	31.3	31.6	31.8	32.3	32.8	32.9	32.7	33	32.9	32.8	32.9	29.1	28.8	28.9	29.2	29.7
Wednesday	4pm	3	Time	16:28	16:30	16:31	16:33	16:35	16:37	16:38	16:40	16:43	16:45	16:46	16:49	16:51	16:55	16:57	17:00	17:13	17:16	17:19	17:21	17:23
			Temperature	27.2	27.4	28	28.4	28.9	29.3	29.8	30.3	31	31.2	31.3	31.6	31.9	32	31.8	31.8	26.5	27.4	28.4	29	29.5
Wednesday	5pm	6	Time	17:25	17:27	17:28	17:30	17:31	17:34	17:35	17:36	17:40	17:41	17:43	17:45	17:47	17:50	17:53	17:57	18:06	18:08	18:12	18:14	18:16
			Temperature	27	27.4	28	28.4	28.7	29.2	29.5	29.9	30.7	30.9	31.3	31.3	31.7	31.7	31.3	31.6	26.9	27.8	28.7	29.4	30.1
Wednesday	6pm	3	Time	18:42	18:44	18:45	18:47	18:48	18:51	18:52	18:53	18:57	18:59	19:00	19:03	19:04	19:07	19:10	19:13	19:21	19:23	19:26	19:28	19:30
			Temperature	26.5	26.8	27.1	27.5	27.9	28.4	28.8	29.1	29.9	30.2	30.5	30.8	31.1	31.4	31.6	31.7	26.9	27.2	27.6	28.1	28.6
Thursday	7am	6	Time	07:30	07:32	07:33	07:34	07:36	07:38	07:39	07:41	07:44	07:46	07:48	07:50	07:52	07:55	07:57	08:00					08:27
			Temperature	23.3	23.8	24.3	24.7	25.1	25.6	26	26.3	27.2	27.6	28	28	28.3	28.4	28.2	28.3					26.7
Thursday	8am	3	Time	08:30	08:31	08:50	08:52	08:53	09:00	09:01	09:02	09:05	09:06	09:08	09:10	09:12	09:15	09:18	09:21	09:29	09:30	09:33	09:35	09:37
			Temperature	25.1	25.1	27.6	27.7	27.8	28.2	28.5	28.7	29.2	29.4	29.6	29.6	29.7	29.5	29.3	29.3	24.5	25.1	25.7	26.2	26.9
Thursday	9am	6	Time	09:27	09:29	09:30	09:31	09:33	09:35	09:36	09:37	09:41	09:42	09:44	09:46	09:48	09:51	09:53	09:56	10:02	10:04	10:07	10:09	10:12
			Temperature	27.1	27.6	28	28.2	28.9	29.2	29.4	29.5	30.1	30.3	30.7	30.6	30.8	30.9	30.7	30.7	25.3	25.6	25.7	25.9	26.1
Thursday	10am	3	Time	10:28	10:30	10:31	10:33	10:35	10:37	10:38	10:40	10:43	10:45	10:47	10:48	10:51	10:54	10:56	11:00	10:07	11:10	11:13	11:15	11:17
			Temperature	26.4	26.3	26.3	26.6	26.8	27	27.2	27.6	28.6	29.2	29.7	30.1	30.5	30.7	30.8	30.4	25	26	26.9	27.4	27.9
Thursday	11am	6	Time	11:24	11:26	11:27	11:29	11:30	11:33	11:35	11:36	11:39	11:40	11:43	11:45	11:47	11:49	11:52	11:55	12:01	12:04	12:07	12:09	12:11
			Temperature	25.8	26.4	26.9	27.2	27.6	28.2	28.6	29	29.7	29.9	30	30	30.2	30.3	30	30.3	27.9	28.6	29.2	29.6	30
Thursday	12pm	3	Time	12:30	12:32	12:33	12:35	12:36	12:38	12:40	12:41	12:45	12:46	12:47	12:49	12:51	12:55	12:57	13:00	13:10	13:12	13:15	13:17	13:19
			Temperature	26.1	26.4	26.8	27.9	28.8	30.2	31.1	31.6	31.9	31.8	31.4	31.2	31.2	30.9	30.6	30.7	25.9	26.7	27.6	28.7	28.7
Thursday	1pm	6	Time	13:24	13:26	13:27	13:29	13:30	13:32	13:34	13:35	13:38	13:40	13:42	13:44	13:46	13:49	13:51	13:54	14:06	14:08	14:11	14:14	14:17
			Temperature	26.6	27.1	27.4	27.8	28.2	28.8	29.1	29.5	30.1	30.2	30.5	30.6	30.8	31	30.1	30.5	26.5	27.2	28.1	28.5	29.1
Thursday	2pm	3	Time	14:28	14:30	14:32	14:33	14:35	14:37	14:38	14:40	14:44	14:45	14:47	14:49	14:51	14:54	14:57	15:01	15:08	15:10	15:13	15:15	15:17
			Temperature	28.7	28.7	28.9	29.2	29.4	29.8	30.1	30.4	30.8	30.9	31	31.2	31.4	31.4	31.4	31.3	26.7	27.4	28.1	28.5	29.1
Thursday	3pm	6	Time	15:39	15:40	15:42	15:43	15:45	15:47	15:49	15:50	15:54	15:55	15:56	15:59	16:00	16:04	16:06	16:09	16:22	16:24	16:27	16:30	16:32
			Temperature	28	28.36	28.7	28.9	29.2	28.8	30.2	30.6	31.3	31.5	31.5	31.7	31.9	31.9	31.8	31.8	27.4	28.2	29.1	29.8	30.5
Thursday	4pm	3	Time	16:32	16:33	16:34	16:36	16:38	16:40	16:41	16:42	16:44	16:46	16:47	16:51	16:53	16:57	16:59	17:02	17:09	17:12	17:15	17:17	17:19
			Temperature	27.6	27.9	28.3	28.7	29.2	29.7	30.1	30.4	31.1	31.2	31.4	31.4	31.6	31.8	31.6	31.7	27.7	28.2	28.9	29.2	29.7
Thursday	5pm	6	Time	17:21	17:23	17:24	17:26	17:27	17:30	17:31	17:32	17:36	17:37	17:39	17:41	17:43	17:46	17:49	17:53	18:01	18:04	18:07	18:09	18:11
			Temperature	27.9	27.9	28	28.2	28.3	28.6	28.9	29.2	30	30.2	30.4	30.6	30.9	31	30.4	31	27.2	28	28.9	29.3	29.8
Thursday	6pm	3	Time	18:23	18:25	18:26	18:28	18:29	18:31	18:35	18:36	18:40	18:42	18:43	18:46	18:48	18:51	18:53	18:57	19:04	19:07	19:10	19:12	19:14
			Temperature	27.7	28.2	28.7	28.9	29.2	29.7	30.6	31	31.4	31.7	31.8	31.9	32.2	32.2	31.9	31.9	27.3	28.1	28.7	29.3	29.8
Friday	7am	6	Time	07:28	07:30	07:31	07:33	07:34	07:36	07:38	07:39	07:42	07:44	07:46	07:48	07:50	07:53	07:55	07:59	08:06	08:08	08:12	08:15	08:17
			Temperature	24.3	24.3	24.8	25	25.4	26	26.4	26.7	27.6	27.9	27.9	27.9	28.2	28.3	28.2	28.4	24.5	25	25.8	26.1	26.4

Friday	8am	3	Time	08:33	08:34	08:36	08:37	08:39	08:41	08:42	08:44	08:48	08:49	08:51	08:53	08:55	08:58	09:00	09:03	09:09	09:11	09:15	09:17	09:19
			Temperature	25.5	26.1	26.7	27.2	27.7	28.3	28.8	29.2	30.6	30.1	30.3	29.6	30.1	29.9	29.6	29.7	25.8	26.9	27.9	28.9	29.4
Friday	9am	6	Time	09:28	09:30	09:31	09:33	09:35	09:37	09:39	09:40	09:44	09:45	09:47	09:49	09:51	09:54	09:56	10:00	10:07	10:10	10:13	10:15	10:17
			Temperature	27.3	27.3	27.7	27.9	28.2	28.7	29	29.4	29.9	30.1	30.3	30.2	30.6	30.6	30.4	30.5	14.6	25.7	26.8	27.2	27.7
Friday	10am	3	Time	10:30	10:32	10:34	10:35	10:36	10:39	10:40	10:41	10:45	10:46	10:47	10:50	10:51	10:54	10:56	11:00	11:06	11:08	11:11	11:13	11:15
			Temperature	25.6	25.4	25.6	25.7	26	26.5	26.9	27.2	27.8	27.9	28.3	28.5	28.8	29	28.8	29	26	26.4	26.7	27	27.5
Friday	11am	6	Time	11:23	11:25	11:28	11:30	11:32	11:34	11:36	11:37	11:38	11:40	11:41	11:44	11:46	11:49	11:51	11:54	12:01	12:04	12:07	12:09	12:11
			Temperature	25.4	24.8	24.4	26.1	27	26.9	26.9	27.1	27.7	28	28.2	28.2	28.3	28.2	28.3	28.6	25.2	25.7	26.3	26.8	27.4
Friday	12pm	3	Time	12:23	12:26	12:27	12:28	12:30	12:32	12:34	12:35	12:39	12:40	12:42	12:44	12:46	12:49	12:52	12:55	13:00	13:02	13:05	13:07	13:09
			Temperature	24.3	24.3	24.6	25.1	25.5	26	26.5	26.9	27.8	28.1	28.4	28.7	29	29.1	29	29.2	25.2	25.5	26	26.5	27.3