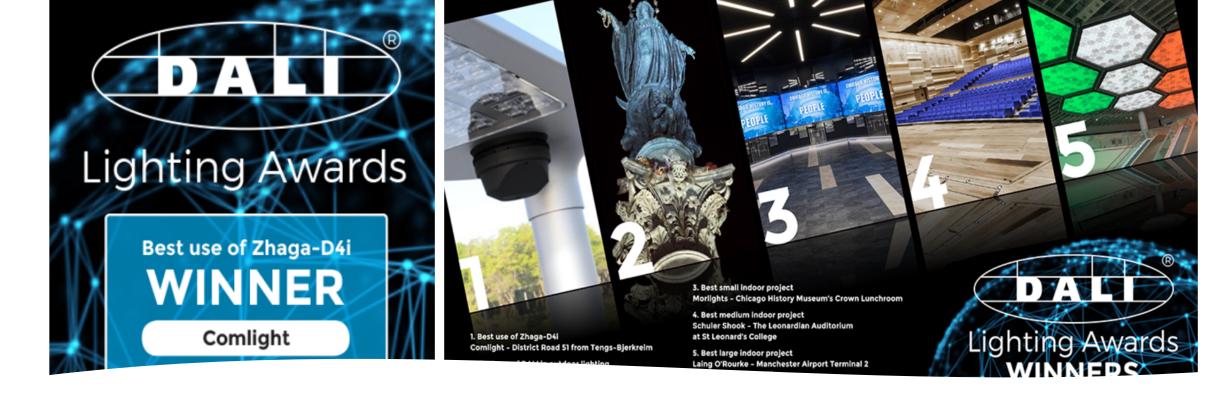


Comlight Motion Sensing Lighting Control

Hillerød Installations

2 February 2021 Jan Olav Endrerud Comlight AS





Comlight wins DALI Awards

Comlight won the Best use of Zhaga-D4i category in the first ever DALI Lighting Awards on 27 January 2021. The Zhaga-D4i ecosystem enables smart, future-proof LED luminaires with IoT connectivity, and sensors with wireless communication can easily be added to luminaires providing plug-and play interoperability.

Between Tengs and Bjerkreim in Norway, Comlight has equipped 275 Signify luminaries with Eagle Eye Zhaga motion detection light controllers. The system uses radio communication to pass light-on messages to the next luminaries, providing full light for road users for maximum safety and minimal energy consumption. Furthermore, the solution reduces light pollution and thus minimize negative impacts from artificial lighting.

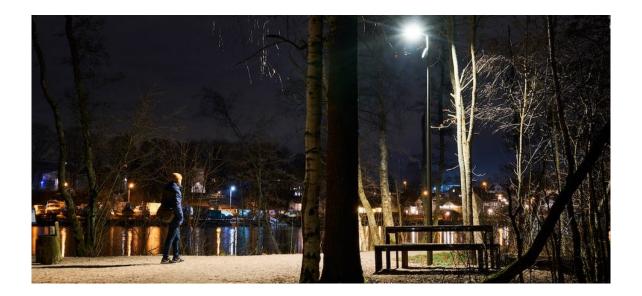
The jury's comments:

The judges felt this was an excellent example of Zhaga-D4i in practice, with some great benefits include fast installation of the controller; only 1.5 to 2 minutes is required per luminaire, instead of 15 minutes for the pole-mount version. High energy saving is achieved, typically 70% at night even on this district road, and the system also provides statistical and energy data, which is made available to the cloud-based backend system.



Motion Sensing Lighting Control

- Provides full light when and where needed
- Robust radar-based motion detection, that works in all conditions and for pedestrians, cyclists and vehicles
- Well-tested in numerous installations in all weather conditions
- Unique "light-wave" using radio communication between poles
- Autonomous operation, with no single point of failure even in case of break in communication or missing power in part of installation
- Up to 80% dimming down time during night (in some cases 90% or more)
- Twist&lock installation on Zhaga-luminaries, takes just a minute!
- Flexible installation with Eagle Eye 3.0 Pole-mount alternative



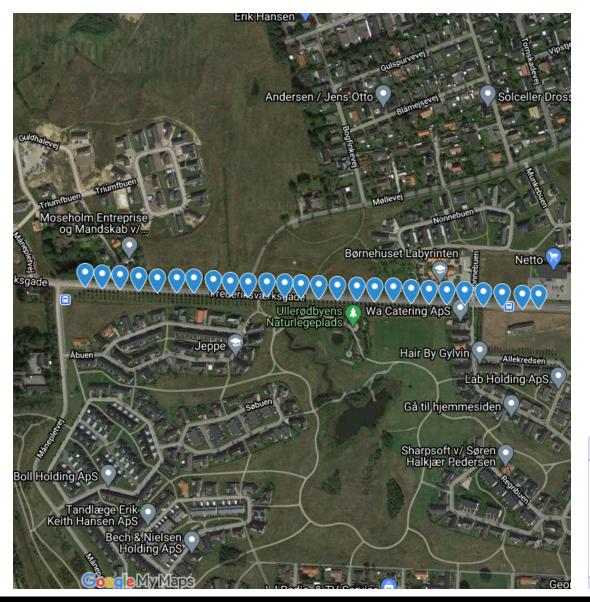
Unique Selling Point

- Save Energy
- Reduce negative environmental impacts & light pollution
- Provide Full Light and Maximum Safety when there is activity



Fredriksværkgade (26 Comlight Zhaga units)







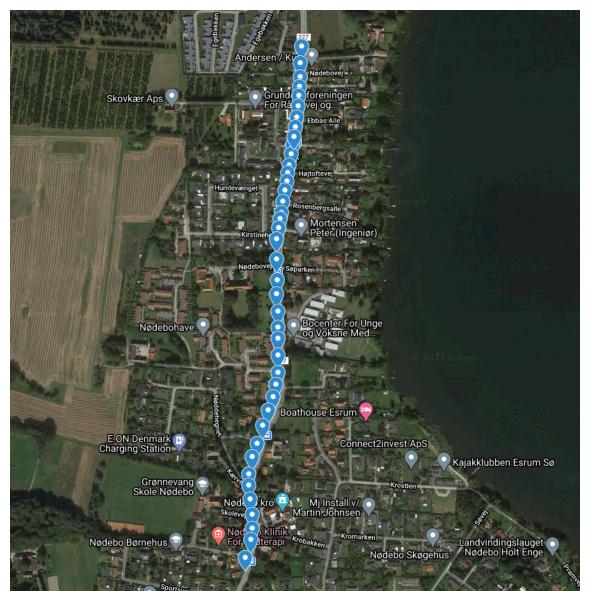


26 x Comlight Zhaga controllers. Average dim levels individual controllers 44-57% **Average dim level installation 51%**

Average of pctLow	Colum	I																								
Row Labels	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
30/11/2020 - 06/12/2020	52%	51%	51%	52%	53%	52%	54%	55%	55%	55%	57%	57%	57%	57%	57%	57%	57%	57%	57%	56%	56%	57%	57%	58%	58%	60%
07/12/2020 - 13/12/2020	47%	46%	45%	48%	48%	48%	49%	51%	51%	52%	53%	54%	53%	53%	53%	52%	52%	52%	52%	53%	53%	53%	54%	54%	55%	56%
14/12/2020 - 20/12/2020	47%	46%	45%	47%	48%	48%	49%	49%	50%	51%	52%	53%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	53%	53%	54%	55%
21/12/2020 - 27/12/2020	52%	51%	49%	51%	51%	51%	52%	53%	54%	54%	55%	56%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	56%	56%	57%	58%
28/12/2020 - 03/01/2021	42%	41%	38%	39%	39%	39%	40%	41%	43%	43%	45%	45%	45%	45%	44%	44%	44%	44%	44%	45%	45%	44%	45%	44%	46%	49%
04/01/2021 - 10/01/2021	45%	44%	43%	46%	46%	47%	48%	50%	50%	51%	55%	56%	55%	55%	55%	55%	55%	54%	55%	55%	55%	55%	56%	56%	57%	59%
11/01/2021 - 17/01/2021	46%	45%	42%	45%	45%	46%	47%	49%	49%	50%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	54%	55%
18/01/2021 - 24/01/2021	43%	43%	41%	44%	44%	44%	45%	47%	47%	47%	50%	51%	51%	50%	50%	50%	50%	49%	50%	50%	50%	51%	52%	53%	54%	56%
25/01/2021 - 31/01/2021	49%	48%	46%	49%	49%	49%	50%	53%	53%	53%	54%	55%	55%	54%	55%	55%	55%	54%	55%	55%	55%	55%	56%	56%	57%	59%
01/02/2021 - 02/02/2021	52%	51%	49%	52%	52%	52%	53%	55%	56%	57%	58%	59%	59%	58%	59%	59%	59%	58%	58%	59%	59%	59%	61%	61%	62%	64%
Average dim time	47%	46%	44%	47%	47%	47%	48%	50%	50%	51%	53%	53%	53%	53%	53%	53%	53%	52%	52%	53%	53%	53%	53%	54%	55%	57%

Nødebovej



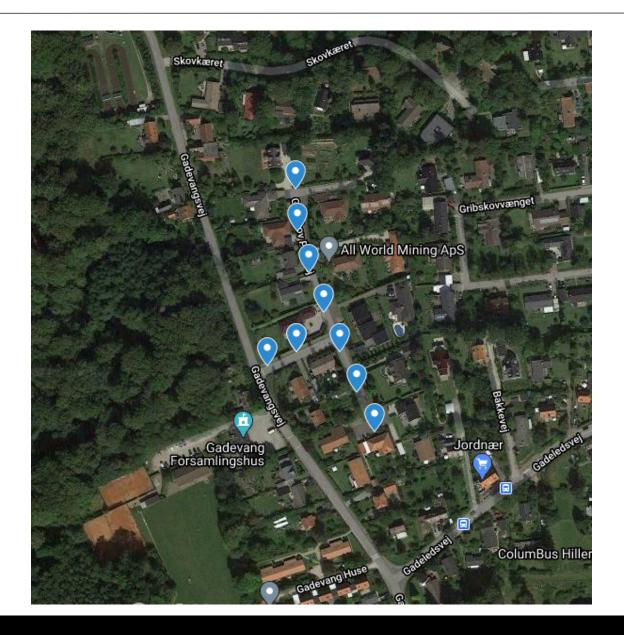


40 x Comlight Eagle Eye (pole mount) controllers. Average dim levels individual controllers 25-46% **Average dim level installation 34%**

Average of pctLow	Column Labels																																					
Row Labels		2	3	4	5	6	7	8	9	10	11 1	2 1	3 14	15	16	17	18 1	.9 20	0 21	22	23	24	25	26	27 28	29	30	31	32	33	34	35	36	37	38	39	40	41
13/04/2020 - 19/04/2020	57%	54%	52%	64%	63%	62%	61%	58%	55% 5	7% 56	38	% 389	6 33%	49%	39%	57% 4	15% 36	% 36%	6 35%	49%	51%	36%	49% 4	49%	19% 51%													
20/04/2020 - 26/04/2020	66%	64%	62%	61%	60%	58%	56%	56%	56% 5	5% 55	56	% 579	6 57%	56%	55%	55% 5	55% 55	% 54%	6 56%	56%	55%	56%	57% 5	57% !	58% 59%													
27/04/2020 - 03/05/2020	65%	60%	58%	58%	57%	55%	58%	50%	49% 5	0% 35	5% 34 ⁹	% 359	35%	35%	35%	51% 3	38% 41	% 46%	6 46%	46%	47%	43%	44%	44%	15% 46%													
04/05/2020 - 10/05/2020	65%	63%	61%	61%	61%	59%	59%	57%	56% 5	5% 31	% 33	% 349	6 34%	34%	34%	40% 3	36% 38	% 41%	6 36%	37%	41%	37%	37% 3	36% !	51% 54%													
11/05/2020 - 17/05/2020	61%	60%	58%	61%	61%	59%	58%	49%	48% 4	8% 48	3% 31	% 339	6 33%	33%	33%	53% 3	35% 33	% 31%	6 31%	33%	46%	43%	47%	46%	18% 50%													
18/05/2020 - 24/05/2020	54%	51%	47%	45%	44%	42%	42%	40%	40% 4	1% 4:	26	% 289	6 27%	28%	27%	40% 3	32% 32	% 31%	6 32%	32%	40%	37%	40% 4	41%	40% 46%													
25/05/2020 - 31/05/2020	65%	63%	61%	59%	59%	57%	56%	55%	55% 5	5% 53	43	% 449	6 42%	42%	42%	50% 4	17% 46	% 43%	6 47%	47%	49%	49%	50% 5	50% 3	53% 55%													
01/06/2020 - 07/06/2020	51%	47%	44%	43%	41%	39%	40%	35%	36% 3	5% 31	% 27	% 299	6 29%	29%	30%	45% 4	14% 43	% 42%	6 42%	43%	44%	40%	41% 4	41%	11% 42%													
08/06/2020 - 14/06/2020	61%	60%	57%	59%	57%	55%	55%	47%	48% 4	8% 49	% 46	% 539	6 54%	54%	54%	59% 5	58% 57	% 57%	6 58%	57%	58%	57%	57% 5	56% !	57% 58%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
15/06/2020 - 21/06/2020	57%	55%	52%	54%	54%	52%	52%	50%	50% 5	0% 50	0% 44	% 459	6 44%	45%	44%	51% 5	50% 50	% 49%	6 50%	50%	51%	49%	49% 4	49% 4	48% 48%	50%	47%	48%	48%	46%	47%	50%	50%	51%	56%	51%	53%	54%
22/06/2020 - 28/06/2020	44%	41%	38%	37%	41%	39%	38%	37%	35% 3	5% 34	% 29	% 309	6 29%	28%	28%	32% 3	32% 33	% 32%	6 34%	35%	35%	34%	35% 3	35% 3	36% 36%	37%	36%	38%	38%	35%	35%	36%	35%	36%	43%	40%	42%	44%
29/06/2020 - 05/07/2020	42%	39%	37%	38%	38%	35%	35%	31%	29% 2	9% 28	3% 17	% 179	6 16%	16%	17%	30% 2	22% 21	% 21%	6 21%	21%	27%	25%	26% 2	24%	23% 22%	25%	21%	22%	24%	22%	22%	24%	27%	25%	33%	24%	22%	28%
06/07/2020 - 12/07/2020	50%	48%	47%	53%	53%	51%	49%	36%	36% 3	4% 33	14	% 149	6 14%	14%	14%	39% 2	26% 26	% 25%	6 26%	27%	41%	35%	35% 3	34% 3	34% 35%	42%	22%	23%	22%	18%	19%	25%	24%	25%	48%	26%	23%	24%
13/07/2020 - 19/07/2020	48%	45%	43%	45%	45%	42%	42%	39%	39% 3	9% 38	3% 31	% 329	6 32%	32%	32%	41% 3	37% 37	% 37%	6 38%	38%	43%	42%	40% 3	39% 3	39% 38%	40%	35%	35%	35%	34%	34%	35%	35%	36%	48%	37%	39%	40%
20/07/2020 - 26/07/2020	50%	47%	45%	47%	47%	44%	43%	39%	37% 3	9% 38	3% 24	% 249	6 23%	24%	23%	38% 3	30% 30	% 31%	6 31%	33%	41%	37%	37% 3	36% 3	35% 35%	40%	27%	27%	25%	16%	16%	20%	20%	21%	44%	26%	27%	28%
27/07/2020 - 02/08/2020	37%	33%	31%	40%	41%	40%	43%	33%	32% 3	3% 35	% 15	% 169	6 15%	15%	16%	36% 2	25% 27	% 29%	6 29%	30%	45%	36%	36% 3	34% 3	33% 32%	43%	28%	28%	29%	28%	29%	35%	34%	35%	51%	14%	15%	15%
03/08/2020 - 09/08/2020	39%	35%	32%	32%	33%	32%	33%	34%	35% 3	5% 36	5% 36	% 379	6 36%	36%	37%	38% 3	37% 38	% 38%	6 38%	37%	38%	37%	37% 3	37% 3	36% 35%	35%	33%	32%	32%	32%	34%	32%	32%	34%	37%	32%	35%	38%
10/08/2020 - 16/08/2020	39%	33%	28%	28%	29%	28%	29%	27%	26% 2	5% 25	% 24	% 269	6 27%	28%	29%	34% 3	34% 34	% 35%	6 35%	36%	37%	34%	33% 3	33% 3	30% 29%	28%	28%	25%	24%	26%	27%	26%	25%	26%	27%	22%	24%	28%
17/08/2020 - 23/08/2020	49%	46%	42%	41%	41%	39%	38%	39%	39% 4	0% 4:	41	% 419	6 40%	40%	40%	41% 4	10% 40	% 40%	6 40%	41%	42%	42%	41% 4	40% 3	36% 37%	36%	35%	34%	36%	35%	35%	35%	34%	36%	39%	32%	36%	40%
24/08/2020 - 30/08/2020	51%	48%	45%	45%	44%	41%	41%	38%	36% 3	5% 31	% 32	% 349	6 33%	33%	32%	40% 3	37% 37	% 36%	6 38%	38%	41%	39%	38% 3	37% 3	37% 36%	39%	34%	34%	34%	34%	34%	37%	37%	38%	45%	36%	38%	41%
31/08/2020 - 06/09/2020	50%	48%	46%	45%	45%	43%	42%	38%	36% 3	5% 35	% 34	% 389	6 38%	39%	39%	42% 4	10% 39	% 37%	6 38%	38%	39%	39%	40% 4	40% 3	38% 38%	39%	37%	38%	38%	38%	38%	40%	40%	41%	45%	39%	41%	42%
07/09/2020 - 13/09/2020	47%	45%	44%	46%	46%	44%	43%	37%	31% 3	2% 33	3% 25	% 279	6 29%	29%	29%	41% 2	28% 28	% 27%	6 28%	28%	40%	36%	34% 3	34% 3	32% 32%	39%	27%	27%	27%	25%	25%	29%	30%	31%	47%	20%	21%	22%
14/09/2020 - 20/09/2020	49%	47%	46%	47%	47%	45%	44%	39%	37% 3	5% 31	% 35	% 379	6 38%	38%	38%	42% 3	36% 36	% 36%	6 37%	37%	41%	41%	41% 4	40% 3	39% 39%	39%	33%	33%	34%	35%	35%	39%	39%	40%	47%	38%	40%	42%
21/09/2020 - 27/09/2020	43%	41%	40%	46%	46%	43%	42%	34%	33% 3	3% 35	% 34	% 409	6 41%	41%	41%	43% 4	10% 40	% 39%	6 39%	39%	40%	39%	39% 3	39% 3	38% 37%	39%	37%	37%	38%	39%	39%	42%	42%	42%	45%	35%	36%	37%
28/09/2020 - 04/10/2020	32%	35%	29%	46%	45%	44%	42%	20%	19% 1	9% 20	0% 18	% 219	6 21%	21%	21%	37% 3	34% 32	% 32%	6 32%	33%	34%	25%	24% 2	24%	24% 23%	38%	28%	29%	29%	28%	29%	37%	37%	38%	44%	20%	21%	22%
05/10/2020 - 11/10/2020	41%	39%	37%	36%	36%	34%	34%	32%	32% 3	2% 33	34	% 359	6 34%	35%	35%	34% 3	33% 33	% 34%	6 34%	34%	34%	34%	33% 3	33% 3	33% 33%	33%	32%	33%	32%	33%	34%	34%	34%	34%	37%	31%	33%	33%
12/10/2020 - 18/10/2020	33%	32%	30%	42%	42%	38%	37%	27%	26% 2	5% 26	5% 25	% 329	6 32%	31%	32%	36% 2	26% 25	% 25%	6 25%	25%	32%	28%	28% 2	27% 3	27% 27%	33%	23%	23%	23%	23%	23%	28%	28%	29%	41%	24%	25%	26%
19/10/2020 - 25/10/2020	36%	34%	33%	36%	35%	33%	32%	25%	25% 2	5% 26	5% 24	% 299	6 28%	28%	28%	30% 2	22% 21	% 21%	6 21%	21%	27%	26%	24% 2	24%	22% 22%	27%	22%	23%	23%	21%	21%	22%	22%	23%	35%	13%	14%	14%
26/10/2020 - 01/11/2020	38%	36%	35%	36%	36%	35%	34%	26%	25% 2	5% 26	5% 26	% 339	6 32%	32%	32%	32% 2	25% 25	% 24%	6 24%	24%	27%	24%	24% 2	24%	23% 23%	31%	28%	28%	28%	25%	25%	26%	27%	28%	36%	15%	16%	16%
02/11/2020 - 08/11/2020	34%	32%	31%	34%	33%	33%	32%	27%	27% 2	5% 26	5% 20	% 229	6 21%	22%	22%	30% 1	16% 15	% 14%	6 14%	14%	21%	17%	17% :	17% :	17% 17%	25%	17%	17%	17%	12%	12%	12%	12%	13%	34%	11%	13%	13%
09/11/2020 - 15/11/2020	40%	38%	37%	36%	36%	35%	34%	33%	33% 3	3% 33	\$% 32	% 339	6 33%	33%	33%	33% 2	29% 27	% 27%	6 27%	27%	29%	26%	26% 2	26% 3	26% 25%	32%	29%	30%	30%	25%	25%	26%	27%	27%	36%	15%	16%	16%
16/11/2020 - 22/11/2020	35%	34%	33%	33%	32%	31%	29%	26%	25% 2	5% 25	5% 19	% 219	6 22%	23%	22%	30% 1	19% 15	% 15%	6 15%	15%	19%	17%	17% :	17% :	16% 15%	23%	14%	14%	14%	10%	10%	12%	13%	13%	33%	7%	7%	8%
23/11/2020 - 29/11/2020	39%	37%	36%	35%	36%	34%	32%	31%	30% 3	0% 3:	.% 28	% 299	6 28%	29%	28%	32% 3	31% 30	% 29%	6 30%	30%	30%	28%	29% 2	28% 3	28% 27%	30%	22%	22%	22%	20%	21%	25%	25%	25%	36%	17%	18%	18%
30/11/2020 - 06/12/2020	39%	37%	35%	34%	34%	32%	32%	30%	30% 3	0% 30	0% 28	% 299	6 28%	28%	28%	31% 3	31% 26	% 26%	6 26%	26%	26%	20%	20% :	19% :	19% 19%	28%	26%	26%	26%	27%	28%	31%	31%	31%	34%	15%	15%	16%
07/12/2020 - 13/12/2020	39%	37%	36%	36%	36%	34%	33%	28%	27% 2	7% 28	3% 22	% 239	6 23%	23%	23%	33% 3	33% 25	% 25%	6 25%	25%	25%	15%	15% 3	15% :	15% 15%	28%	23%	24%	24%	25%	25%	32%	32%	33%	36%	5%	5%	6%
14/12/2020 - 20/12/2020	41%	39%	38%	37%	36%	35%	34%	34%	33% 3	3% 33	31	% 319	6 31%	31%	31%	32% 3	31% 29	% 27%	6 26%	26%	26%	23%	25% 2	26% 3	25% 25%	30%	26%	27%	27%	29%	29%	33%	34%	33%	34%	19%	21%	229
21/12/2020 - 27/12/2020	44%	42%	41%	39%	39%	37%	36%	35%	35% 3	5% 36	5% 34	% 359	\$ 35%	35%	34%	35% 3	34% 33	% 33%	6 33%	32%	32%	30%	30% 3	30% 3	30% 30%	33%	31%	32%	32%		34%				38%			329
28/12/2020 - 03/01/2021																									19% 19%		22%	23%	23%						32%		19%	209
04/01/2021 - 10/01/2021	38%	36%	34%	39%	39%	37%	36%	28%	27% 2	7% 2	% 27	% 339	6 32%	32%	32%	33% 3	31% 27	% 27%	6 27%	27%	27%	15%	15% 3	15% :	15% 15%	25%	13%	14%	14%	15%			38%		38%	18%	19%	20%
11/01/2021 - 17/01/2021																									25% 24%		20%	21%	21%					33%	35%			
18/01/2021 - 24/01/2021																									22% 21%		25%	26%	26%	28%	29%				34%			269
25/01/2021 - 31/01/2021	43%	41%	39%	38%	38%	36%	35%	35%	33% 3	3% 33	33	% 349	6 33%	34%	34%	33% 3	33% 32	% 32%	6 32%	31%	31%	32%	32% 3	32% 3	31% 31%	32%	31%	32%	33%	35%	35%	36%	36%	37%	38%	35%	37%	39%
01/02/2021 - 02/02/2021																									34% 34%								40%		40%			39%
Average dim time	46%	44%	41%	43%	43%	41%	41%	36%	35% 3	5% 35	% 30	% 329	6 31%	32%	31%	38% 3	33% 32	% 32%	6 32%	33%	36%	33%	33% 3	33% 3	33% 33%	34%	28%	28%	28%	28%	28%	31%	32%	32%	40%	25%	26%	28%

Gribskov Parkvej







10 x Comlight Zhaga controllers.Average dim levels individualcontrollers 65-82%Average dim level installation 74%

Average of pctLow	Column Labels									
Row Labels	1	2	3	4	5	6	7	8	9	10
02/07/2020 - 08/07/2020	88%	88%	50%	50%	53%	55%	50%	83%	84%	88%
09/07/2020 - 15/07/2020	87%	87%	66%	65%	70%	73%	66%	83%	84%	88%
16/07/2020 - 22/07/2020	79%	79%	59%	58%	65%	71%	56%	66%	68%	73%
23/07/2020 - 29/07/2020	81%	81%	50%	50%	55%	59%	47%	69%	70%	75%
30/07/2020 - 05/08/2020	74%	75%	50%	51%	57%	62%	50%	69%	70%	75%
06/08/2020 - 12/08/2020	37%	38%	16%	19%	26%	34%	15%	24%	26%	33%
27/08/2020 - 02/09/2020	76%	77%	60%	65%	71%	74%	60%	69%	71%	74%
03/09/2020 - 09/09/2020	81%	81%	54%	54%	61%	63%	54%	74%	76%	82%
10/09/2020 - 16/09/2020	82%	81%	56%	53%	64%	69%	54%	69%	71%	81%
17/09/2020 - 23/09/2020	84%	83%	76%	75%	84%	91%	74%	78%	80%	87%
24/09/2020 - 30/09/2020	81%	81%	72%	73%	81%	87%	70%	75%	76%	82%
01/10/2020 - 07/10/2020	81%	81%	72%	74%	78%	84%	74%	73%	75%	77%
08/10/2020 - 14/10/2020	86%	86%	82%	84%	87%	90%	84%	87%	89%	91%
15/10/2020 - 21/10/2020	88%	88%	83%	86%	89%	92%	86%	87%	88%	91%
22/10/2020 - 28/10/2020	81%	81%	72%	74%	78%	82%	74%	80%	81%	85%
29/10/2020 - 04/11/2020	80%	81%	73%	77%	81%	85%	76%	81%	83%	86%
05/11/2020 - 11/11/2020	83%	84%	76%	80%	84%	87%	79%	83%	84%	87%
Average dim time	81%	82%	65%	66%	71%	75%	65%	76%	77%	82%