

U192 - Busslommer Color line stadion

Anleggsdel : E136 Busslommer Color line stadion

Prosjektnummer : 1350065554

Kunde : Statens Vegvesen Utbygging midt

Utført av : Rambøll

Dato : 18.08.2026

Prosjektbeskrivelse:

Belysningsplan for kjørebane, busslommer, bussholdeplass og GSV langs E136.

ÅDT - 23 100

Fartsgrense - 70km/t

Vegbredde - 13m

Belysningsklasse iht NEK600:2025 - C2/M2 - P1 og C4 for KV/parkeringsplass.

Benytter Phillips / Signify Digistreet armatur.

BPG763 LED360 DW30 for master som står på bussholdeplass (KM002 - KM003).

BPG763 LED 320 DM32 for kjørebane foran color line stadion. (KM001, KM004-KM006).

BPG761 LED84 DW52 for GSV, KV (KM007 - KM009).

BPG760 LED24 DM32 for rampe (KM009).

BPG760 LED50 DW52 for GSV og parkeringsplass. (KM010 - KM015).

BPG763 LED340 DM33 for busslomme vestgående. (KM016-KM017).

For busslomme retning østover er det valgt 12m master - HE-master, med unntak av master på bussholdeplass.

For GSV er det valgt 6m master - med unntak av KM008 som står på nedsiden av mur, denne er 7m.

For busslomme retning vestover er det valgt 12m master.

Det er ikke mulig å unngå lett overbelysning på bussholdeplass retning østgående grunnet masteplassering.

Følgende verdier er beregnet basert på laboratoriemålinger av armaturer og referanselyskilder. I praksis kan avvik forekomme.

Garantikrav for armaturdata er ekskludert.

Relux og armaturprodusentene tar intet ansvar for følgeskader og skader påført brukeren eller tredjepart.

1 Armaturdata

1.1 Philips, BGP763 LED340/730 DM33... (BGP763I-d09dfc8...)

1.1.1 Dataark

Fabrikat: Philips

BGP763I-d09dfc8e-10da-4e4a-85ab-c7315eb470cb Pole mounted luminaire (top) BGP763 LED340/730 DM33

Developed with the aim to become your long term partner, the system ready architecture of DigiStreet enables you to enjoy the benefits of connected lighting systems today and also gets the city ready for the innovations to come!. Its two sockets enable you to connect directly to the CityTouch system and is also prepared to connect you to the future innovations of IoT. Next to this, each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making maintenance and programming operations faster and easier, no matter what stage of the luminaire's lifetime. DigiStreet is also equipped with dedicated light recipes that: 1) maintain an optimal ecosystems for bats or 2) preserve a dark night sky.

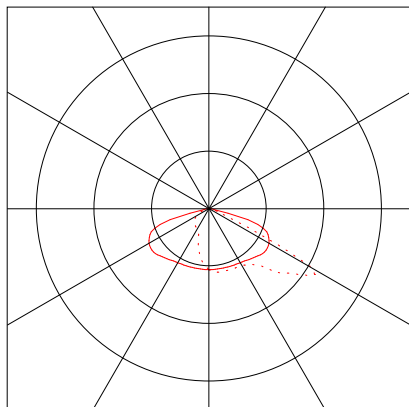
Armaturdata

Armaturvirkningsgrad : 87.4255%
Armaturens lysutbytte : 146.7 lm/W
Klassifisering : A30 ↓100.0% ↑0.0%
CIE Flux Codes : 33 71 99 100 87
UGR 4H 8H : 36.4 / 23.0
Effekt : 206.3 W
Lysfluks : 30264.1 lm

Bestykket med

Antall : 1
Betegnelse : LED340-4S/730
Farge : 3000
Lysfluks : 34617 lm
Fargegjengivelse : 70

Dimensjoner : 945 mm x 361 mm x 121 mm



1 Armaturdata

1.2 Philips, BGP763 LED360/730 DW30... (BGP763I-a30de12...)

1.2.1 Dataark

Fabrikat: Philips

BGP763I-a30de124-6491-4971-b709-b24b71c4037f Pole mounted luminaire (top) BGP763 LED360/730 DW30

Developed with the aim to become your long term partner, the system ready architecture of DigiStreet enables you to enjoy the benefits of connected lighting systems today and also gets the city ready for the innovations to come!. Its two sockets enable you to connect directly to the CityTouch system and is also prepared to connect you to the future innovations of IoT. Next to this, each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making maintenance and programming operations faster and easier, no matter what stage of the luminaire's lifetime. DigiStreet is also equipped with dedicated light recipes that: 1) maintain an optimal ecosystems for bats or 2) preserve a dark night sky.

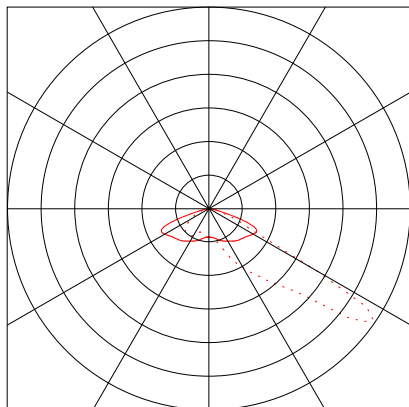
Armaturdata

Armaturvirkningsgrad : 79.9886%
Armaturens lysutbytte : 133.28 lm/W
Klassifisering : A30 ↓100.0% ↑0.0%
CIE Flux Codes : 25 69 98 100 80
UGR 4H 8H : 36.7 / 25.5
Effekt : 221.5 W
Lysfluks : 29522.2 lm

Bestykket med

Antall : 1
Betegnelse : LED360-4S/730
Farge : 3000
Lysfluks : 36908 lm
Fargegjengivelse : 70

Dimensjoner : 945 mm x 361 mm x 121 mm



1 Armaturdata

1.3 Philips, BGP763 LED320/730 DM32... (BGP763I-b2bfb3d...)

1.3.1 Dataark

Fabrikat: Philips

BGP763I-b2bfb3d6-90e1-4aea-b8f8-cd90f147cbc0 Pole mounted luminaire (top) BGP763 LED320/730 DM32

Developed with the aim to become your long term partner, the system ready architecture of DigiStreet enables you to enjoy the benefits of connected lighting systems today and also gets the city ready for the innovations to come! Its two sockets enable you to connect directly to the CityTouch system and is also prepared to connect you to the future innovations of IoT. Next to this, each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making maintenance and programming operations faster and easier, no matter what stage of the luminaire's lifetime. DigiStreet is also equipped with dedicated light recipes that: 1) maintain an optimal ecosystems for bats or 2) preserve a dark night sky.

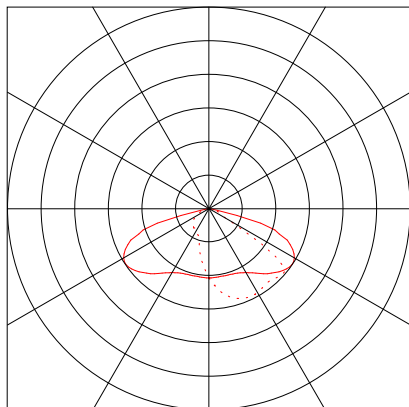
Armaturdata

Armaturvirkningsgrad	: 88.2753%
Armaturens lysutbytte	: 148.97 lm/W
Klassifisering	: A30 ↓100.0% ↑0.0%
CIE Flux Codes	: 36 75 99 100 88
UGR 4H 8H	: 37.5 / 22.2
Effekt	: 191.3 W
Lysfluks	: 28497 lm

Bestykket med

Antall	: 1
Betegnelse	: LED320-4S/730
Farge	: 3000
Lysfluks	: 32282 lm
Fargegjengivelse	: 70

Dimensjoner : 945 mm x 361 mm x 121 mm



1 Armaturdata

1.4 Philips, BGP760 LED24/730 DM32... (BGP760I-53db304a...)

1.4.1 Dataark

Fabrikat: Philips

BGP760I-53db304a-6362-42ef-8bc4-6d1e9ca2dc49 Pole mounted luminaire (top) BGP760 LED24/730 DM32

Developed with the aim to become your long term partner, the system ready architecture of DigiStreet enables you to enjoy the benefits of connected lighting systems today and also gets the city ready for the innovations to come!. Its two sockets enable you to connect directly to the CityTouch system and is also prepared to connect you to the future innovations of IoT. Next to this, each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making maintenance and programming operations faster and easier, no matter what stage of the luminaire's lifetime. DigiStreet is also equipped with dedicated light recipes that: 1) maintain an optimal ecosystems for bats or 2) preserve a dark night sky.

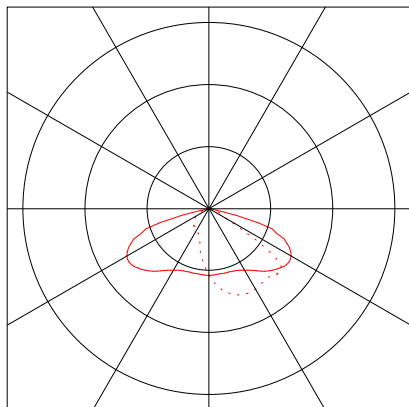
Armaturdata

Armaturvirkningsgrad : 91.9152%
Armaturens lysutbytte : 138.97 lm/W
Klassifisering : A30 ↓100.0% ↑0.0%
CIE Flux Codes : 36 75 99 100 92
UGR 4H 8H : 32.8 / 17.6
Effekt : 15.9 W
Lysfluks : 2209.6 lm

Bestykket med

Antall : 1
Betegnelse : LED24-4S/730
Farge : 3000
Lysfluks : 2404 lm
Fargegjengivelse : 70

Dimensjoner : 627 mm x 236 mm x 103 mm



1 Armaturdata

1.5 Philips, BGP761 LED50/730 DW52... (BGP761I-3e83c5d1...)

1.5.1 Dataark

Fabrikat: Philips

BGP761I-3e83c5d1-bb5e-44b3-9444-6afc04c0b208 Pole mounted luminaire (top) BGP761 LED50/730 DW52

Developed with the aim to become your long term partner, the system ready architecture of DigiStreet enables you to enjoy the benefits of connected lighting systems today and also gets the city ready for the innovations to come!. Its two sockets enable you to connect directly to the CityTouch system and is also prepared to connect you to the future innovations of IoT. Next to this, each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making maintenance and programming operations faster and easier, no matter what stage of the luminaire's lifetime. DigiStreet is also equipped with dedicated light recipes that: 1) maintain an optimal ecosystems for bats or 2) preserve a dark night sky.

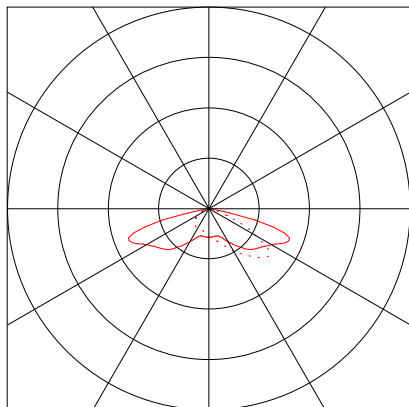
Armaturdata

Armaturvirkningsgrad : 88.9684%
Armaturens lysutbytte : 145.85 lm/W
Klassifisering : A20 ↓100.0% ↑0.0%
CIE Flux Codes : 24 61 97 100 89
UGR 4H 8H : 35.7 / 20.2
Effekt : 30.5 W
Lysfluks : 4448.4 lm

Bestykket med

Antall : 1
Betegnelse :
Farge : 3000
Lysfluks : 5000 lm
Fargegjengivelse : 70

Dimensjoner : 792 mm x 236 mm x 107 mm



1 Armaturdata

1.6 Philips, BGP761 LED84/730 DW52... (BGP761I-f4022a4d...)

1.6.1 Dataark

Fabrikat: Philips

BGP761I-f4022a4d-1d09-46ec-a67d-02dabf058dfc Pole mounted luminaire (top) BGP761 LED84/730 DW52

Developed with the aim to become your long term partner, the system ready architecture of DigiStreet enables you to enjoy the benefits of connected lighting systems today and also gets the city ready for the innovations to come!. Its two sockets enable you to connect directly to the CityTouch system and is also prepared to connect you to the future innovations of IoT. Next to this, each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making maintenance and programming operations faster and easier, no matter what stage of the luminaire's lifetime. DigiStreet is also equipped with dedicated light recipes that: 1) maintain an optimal ecosystems for bats or 2) preserve a dark night sky.

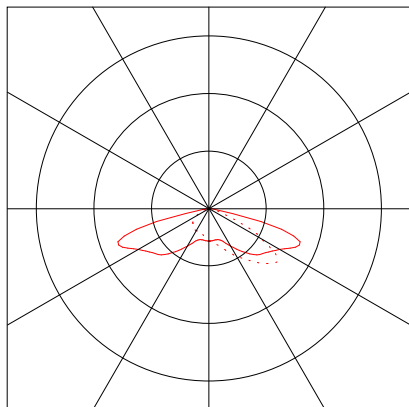
Armaturdata

Armaturvirkningsgrad : 87.9687%
Armaturens lysutbytte : 139.42 lm/W
Klassifisering : A20 ↓100.0% ↑0.0%
CIE Flux Codes : 24 61 97 100 88
UGR 4H 8H : 37.4 / 21.9
Effekt : 53 W
Lysfluks : 7389.4 lm

Bestykket med

Antall : 1
Betegnelse :
Farge : 3000
Lysfluks : 8400 lm
Fargegjengivelse : 70

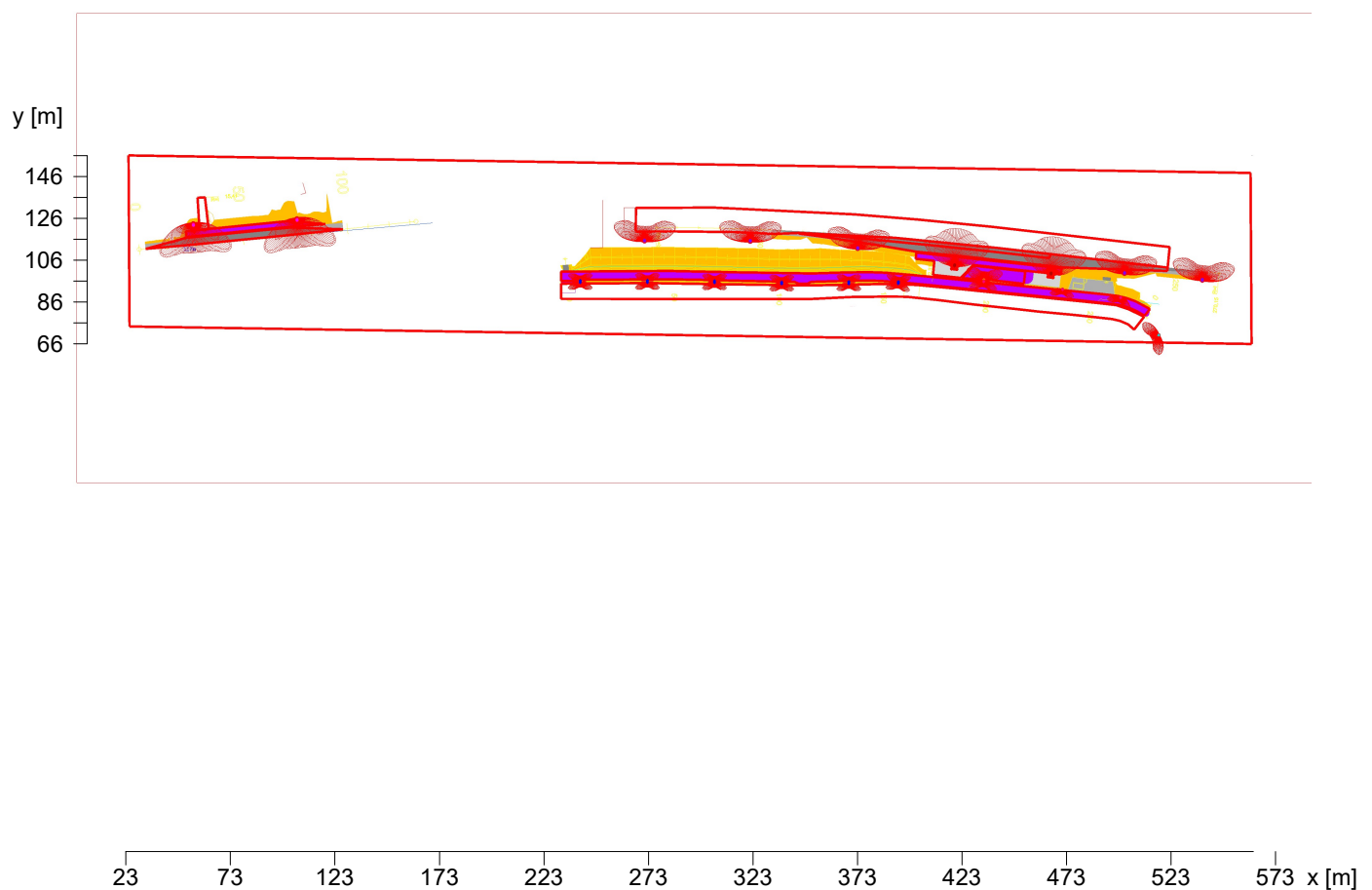
Dimensjoner : 792 mm x 236 mm x 107 mm



2 Beregning med master på holdeplass

2.1 Beskrivelse, Beregning med master på holdeplass

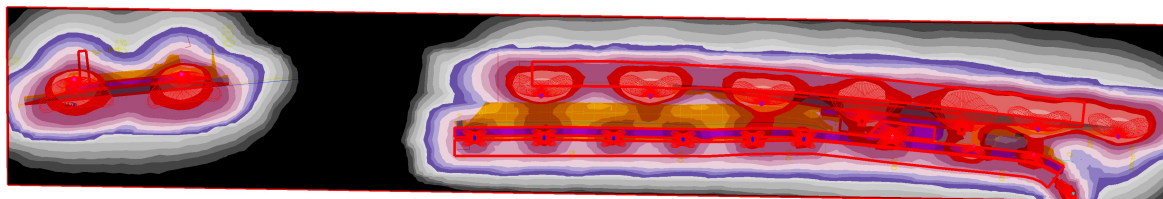
2.1.1 Planvisning



2 Beregning med master på holdeplass

2.2 Sammendrag, Beregning med master på holdeplass

2.2.1 Resultatoversikt, Evalueringsområde 1



23 73 123 173 223 273 323 373 423 473 523 573 x [m]



0 0.10.150.20.30.50.75 1 1.5 2 3 5 7.5 10 15 20 30 50 75 1001502003005007501000150200300500750

Belysningsstyrke [lx]

Generell

Anvendt beregningsalgoritme
Vedlikeholdsfaktor

Midlere indirekteandel
0.80

Total lamp luminous flux
Luminaire luminous flux
Totaleffekt
Totaleffekt per areal (43824.05 m²)

398086.00 lm
345279.31 lm
2391.4 W
0.05 W/m² (0.89 W/m²/100lx)

Evalueringsområde 1

Referanseplan 1.1

$\bar{E}_m$
 E_{min}
 $E_{min}/\bar{E}_m (U_o)$
 $E_{min}/E_{max} (U_d)$
 Posisjon

Horisontal
 6.16 lx
 0 lx
 0.00
 0.00
 0.00 m

Type Ant.\Prod.

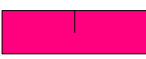
2 1 x **Philips**
 Bestillingsnr. : BGP760I-93e42708-febe-4cef-ae1e-f962b1d19597
 Armaturnavn : BGP760 LED60/730 DM32
 Bestykning : 1 x LED60-4S/730 38.4 W / 6022 lm

5 2 x **Philips**
 Bestillingsnr. : BGP763I-d09dfc8e-10da-4e4a-85ab-c7315eb470cb
 Armaturnavn : BGP763 LED340/730 DM33
 Bestykning : 1 x LED340-4S/730 206.3 W / 34617 lm

2 Beregning med master på holdeplass

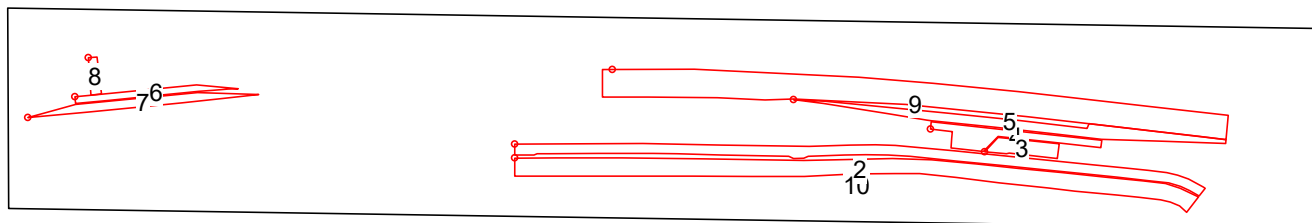
2.2 Sammendrag, Beregning med master på holdeplass

2.2.1 Resultatoversikt, Evalueringsområde 1

6	2 x	Bestillingsnr.	: BGP763I-a30de124-6491-4971-b709-b24b71c4037f
		Armaturnavn	: BGP763 LED360/730 DW30
		Bestykning	: 1 x LED360-4S/730 221.5 W / 36908 lm
8	5 x	Bestillingsnr.	: BGP763I-b2bfb3d6-90e1-4aea-b8f8-cd90f147cbc0
		Armaturnavn	: BGP763 LED320/730 DM32
		Bestykning	: 1 x LED320-4S/730 191.3 W / 32282 lm
9	1 x	Bestillingsnr.	: BGP760I-53db304a-6362-42ef-8bc4-6d1e9ca2dc49
		Armaturnavn	: BGP760 LED24/730 DM32
		Bestykning	: 1 x LED24-4S/730 15.9 W / 2404 lm
10	12 x	Bestillingsnr.	: BGP761I-3e83c5d1-bb5e-44b3-9444-6afc04c0b208
		Armaturnavn	: BGP761 LED50/730 DW52
		Bestykning	: 1 x 30.5 W / 5000 lm
11	3 x	Bestillingsnr.	: BGP761I-f4022a4d-1d09-46ec-a67d-02dabf058dfc
		Armaturnavn	: BGP761 LED84/730 DW52
		Bestykning	: 1 x 53 W / 8400 lm

2.2 Sammendrag, Beregning med master på holdeplass

2.2.2 Sammendrag for utendørscene, Beregning med master på holdeplass



Generell

Anvendt beregningsalgoritme
Vedlikeholdsfaktor

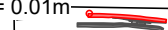
Midlere indirekteandel
0.80

Beregningsfelter

9 Kjørebane

Belysningsstyrke
 $\bar{E}_m$ E_{min}
 20 lx **✓** 8.74 lx
 C2 ≥ 20.0 lx

Beregningsfelt: 255.18m x 28.67m (404 x 45 Punkter), Høyde = 0.01m
 U_o U_d
 0.44 **✓** 0.20
 ≥ 0.40



5 Busslomme østgående

Belysningsstyrke
 $\bar{E}_m$ E_{min}
 24 lx **✓** 11.1 lx
 C2 ≥ 20.0 lx

Beregningsfelt: 176.3m x 17.86m (319 x 32 Punkter), Høyde = 0.00m
 U_o U_d
 0.45 **✓** 0.23
 ≥ 0.40



3 Rampe

Belysningsstyrke
 $\bar{E}_m$ E_{min}
 17.1 lx **✓** 5.36 lx **✓**
 P1 ≥ 15.0 lx ≥ 3.00 lx

Beregningsfelt: 30.32m x 8.61m (34 x 10 Punkter), Høyde = 2.00m
 U_o U_d
 0.31 0.14



4 Bussholdeplass østgående

Belysningsstyrke
 $\bar{E}_m$ E_{min}
 17.5 lx **✓** 9.25 lx **✓**
 P1 ≥ 15.0 lx ≥ 3.00 lx

Beregningsfelt: 69.71m x 12.11m (189 x 33 Punkter), Høyde = 0.00m
 U_o U_d
 0.53 0.36



2 Gangvei mot bro - østgående

Belysningsstyrke
 $\bar{E}_m$ E_{min}
 15.1 lx **✓** 5.47 lx **✓**
 P1 ≥ 15.0 lx ≥ 3.00 lx

Beregningsfelt: 281.47m x 21.35m (531 x 40 Punkter), Høyde = 1.00m
 U_o U_d
 0.36 0.15



2.2 Sammendrag, Beregning med master på holdeplass

2.2.2 Sammendrag for utendørscene, Beregning med master på holdeplass

10 Kjørebane/parkering langs color line stadion

	Belysningsstyrke		Beregningsfelt: 278.73m x 22.18m (546 x 33 Punkter), Høyde = 1.00m	
	$\bar{E}_m$	E_{min}	U_o	U_d
C4	11.4 lx	4.55 lx ✓	0.40 ✓	0.17
	≥ 10.0 lx		≥ 0.40	

6 Bussholdeplass vestgående

	Belysningsstyrke		Beregningsfelt: 3.28m x 66.66m (7 x 145 Punkter), Høyde = 0.00m	
	$\bar{E}_m$	E_{min}	U_o	U_d
P1	23 lx	8.02 lx ✓	0.35	0.19
	≥ 15.0 lx	≥ 3.00 lx		

7 Busslomme vestgående

	Belysningsstyrke		Beregningsfelt: 94.59m x 3.99m (180 x 8 Punkter), Høyde = 0.00m	
	$\bar{E}_m$	E_{min}	U_o	U_d
C2	20 lx	8.94 lx ✓	0.45 ✓	0.24
	≥ 20.0 lx		≥ 0.40	

8 Gangvei mot bro vestgående

	Belysningsstyrke		Beregningsfelt: 15.26m x 4.36m (27 x 8 Punkter), Høyde = 0.00m	
	$\bar{E}_m$	E_{min}	U_o	U_d
P1	17.1 lx	3.31 lx ✓	0.19	0.09
	≥ 15.0 lx	≥ 3.00 lx		