

## Harku valla tänavavalgustuse taristu renoveerimine

Lõik 4 - Järvekalda tee

### Projekteerija

Jonas Põlluveer

Edites OÜ

Vahtra tee 6-12, Peetri alevik,  
Rae vald, Harju maakond,  
75312;

T +372 5302 5182

jonas@edites.eu

## Contacts



Projekteerija

Jonas Põlluveer

Edites OÜ

Vahtra tee 6-12, Peetri alevik,  
Rae vald, Harju maakond,  
75312;

T +372 5302 5182

jonas@edites.eu

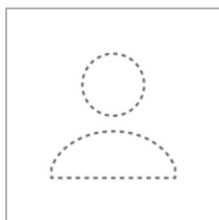
## Luminaire list

$\Phi_{\text{total}}$ 36177 lm	$P_{\text{total}}$ 306.0 W	Luminous efficacy 118.2 lm/W
-----------------------------------	-------------------------------	---------------------------------

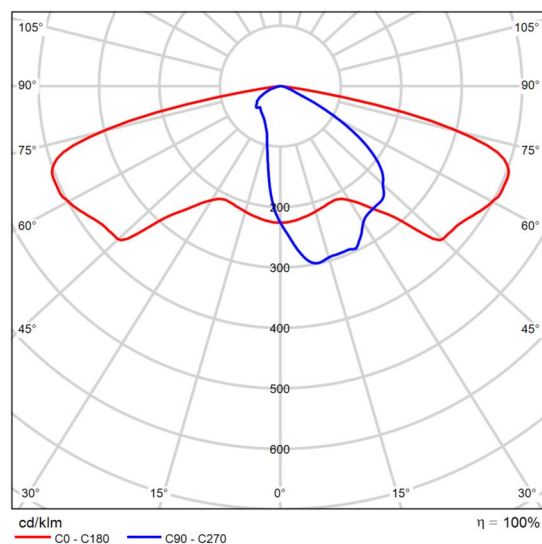
pcs.	Manufacturer	Article No.	Article name	P	$\Phi$	Luminous efficacy
7	Not yet a DIALux member	Micro Martin 10 W 4 LEDs	MRUE 010 730 L22 AA004_Bin-L_TH	10.0 W	1111 lm	111.1 lm/W
4	Not yet a DIALux member	Micro Martin 19 W 4 LEDs	MRUE 019 730 L22 AA004_Bin-L_TH	19.0 W	2085 lm	109.7 lm/W
4	Not yet a DIALux member	Micro Martin 40 W 16 LEDs	MRUE 040 730 L22 AA016_Bin-L_TH	40.0 W	5015 lm	125.4 lm/W

## Product data sheet

Not yet a DIALux member - MRUE 010 730 L22 AA004\_Bin-L\_TH



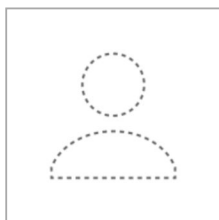
Article No.	Micro Martin 10 W 4 LEDs
P	10.0 W
$\Phi_{\text{Lamp}}$	1111 lm
$\Phi_{\text{Luminaire}}$	1111 lm
$\eta$	100.00 %
Luminous efficacy	111.1 lm/W
CCT	3000 K
CRI	70



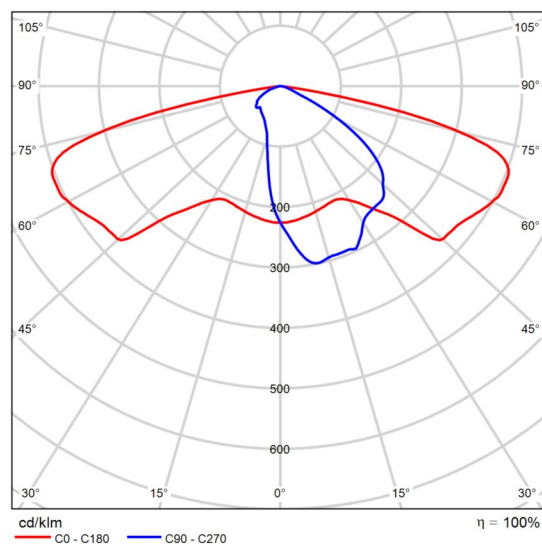
Polar LDC

## Product data sheet

Not yet a DIALux member - MRUE 019 730 L22 AA004\_Bin-L\_TH



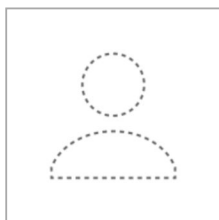
Article No.	Micro Martin 19 W 4 LEDs
P	19.0 W
$\Phi_{\text{Lamp}}$	2085 lm
$\Phi_{\text{Luminaire}}$	2085 lm
$\eta$	100.00 %
Luminous efficacy	109.7 lm/W
CCT	3000 K
CRI	70



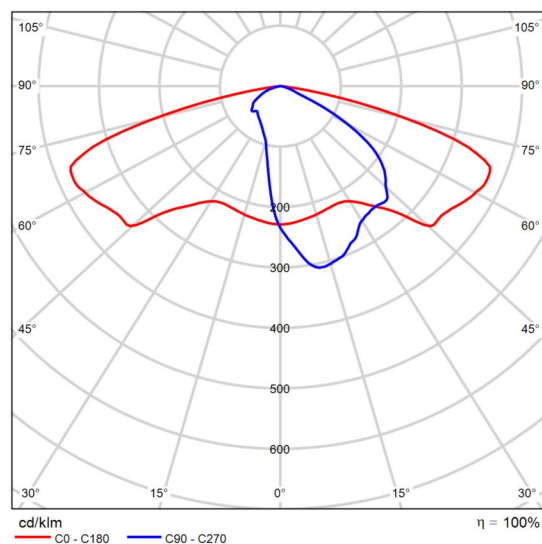
Polar LDC

## Product data sheet

Not yet a DIALux member - MRUE 040 730 L22 AA016\_Bin-L\_TH



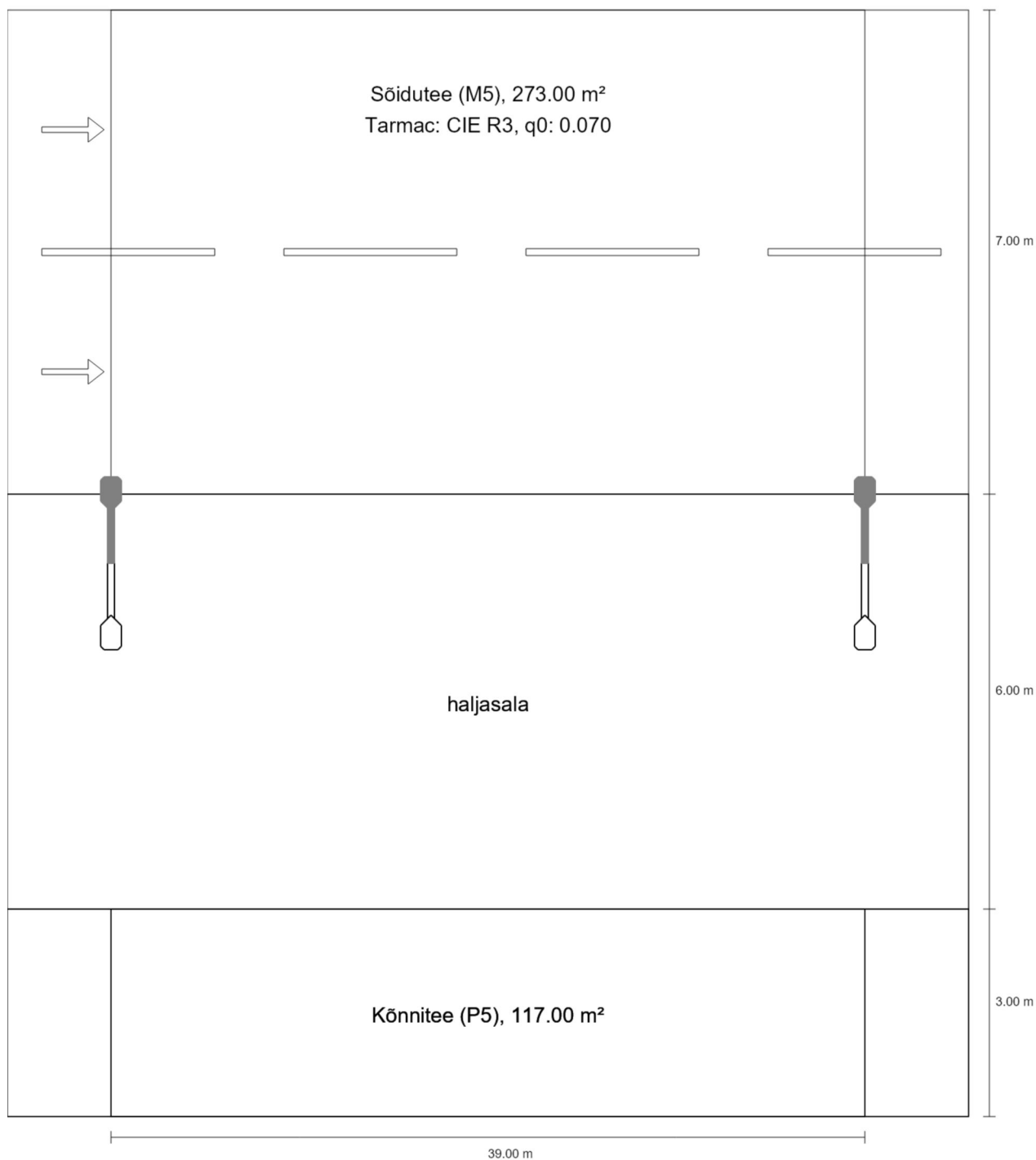
Article No.	Micro Martin 40 W 16 LEDs
P	40.0 W
$\Phi_{\text{Lamp}}$	5015 lm
$\Phi_{\text{Luminaire}}$	5015 lm
$\eta$	100.00 %
Luminous efficacy	125.4 lm/W
CCT	3000 K
CRI	70



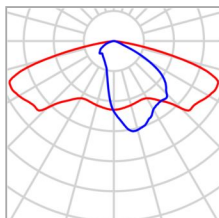
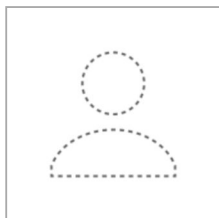
Polar LDC

Järvekalda tee

## Summary (according to EN 13201:2015)



Järvekalda tee

**Summary (according to EN 13201:2015)**

Manufacturer	Not yet a DIALux member
Article No.	Micro Martin 40 W 16 LEDs
Article name	MRUE 040 730 L22 AA016_Bin-L_TH
Fitting	1x 16 LEDs bin L

P	40.0 W
$\Phi_{\text{Lamp}}$	5015 lm
$\Phi_{\text{Luminaire}}$	5015 lm
$\eta$	100.00 %

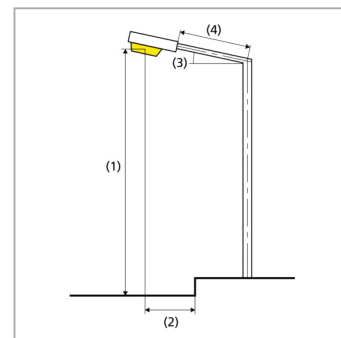


Järvekalda tee

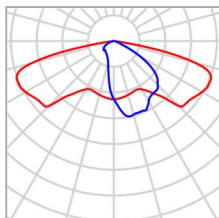
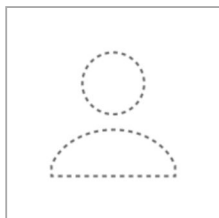
**Summary (according to EN 13201:2015)**

MRUE 040 730 L22 AA016\_Bin-L\_TH (single side bottom)

Pole distance	39.000 m
(1) Light spot height	10.000 m
(2) Light point overhang	0.000 m
(3) Boom inclination	0.0°
(4) Boom length	1.000 m
Annual operating hours	4000 h: 100.0 %, 40.0 W
Wattage / route	1040.0 W/km
ULR / ULOR	0.00 / 0.00
Max. luminous intensities Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	$\geq 70^\circ$ : 602 cd/klm $\geq 80^\circ$ : 159 cd/klm $\geq 90^\circ$ : 1.91 cd/klm
Luminous intensity class The luminous intensity values in [cd/klm] for calculation of the luminous intensity class refer to the luminaire luminous flux according to EN 13201:2015.	G*1
Glare index class	D.5
MF	0.80



Järvekalda tee

**Summary (according to EN 13201:2015)**

Manufacturer	Not yet a DIALux member
Article No.	Micro Martin 19 W 4 LEDs
Article name	MRUE 019 730 L22 AA004_Bin-L_TH
Fitting	1x 4 LEDs bin L

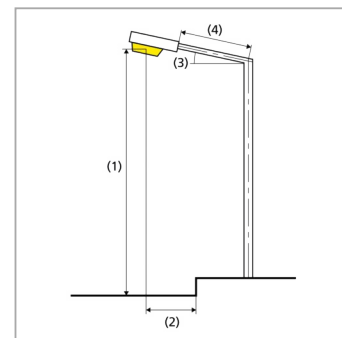
P	19.0 W
$\Phi_{\text{Lamp}}$	2085 lm
$\Phi_{\text{Luminaire}}$	2085 lm
$\eta$	100.00 %

Järvekalda tee

**Summary (according to EN 13201:2015)**

MRUE 019 730 L22 AA004\_Bin-L\_TH (single side bottom)

Pole distance	39.000 m
(1) Light spot height	10.000 m
(2) Light point overhang	0.000 m
(3) Boom inclination	0.0°
(4) Boom length	1.000 m
Annual operating hours	4000 h: 100.0 %, 19.0 W
Wattage / route	494.0 W/km
ULR / ULOR	0.00 / 0.00
Max. luminous intensities Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	$\geq 70^\circ$ : 577 cd/klm $\geq 80^\circ$ : 192 cd/klm $\geq 90^\circ$ : 2.41 cd/klm
Luminous intensity class The luminous intensity values in [cd/klm] for calculation of the luminous intensity class refer to the luminaire luminous flux according to EN 13201:2015.	G*1
Glare index class	D.6
MF	0.80



Järvekalda tee

**Summary (according to EN 13201:2015)**

Results for valuation fields

A maintenance factor of 0.80 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
Sõidutee (M5)	$L_{av}$	0.50 cd/m <sup>2</sup>	$\geq 0.50$ cd/m <sup>2</sup>	✓
	$U_o$	0.51	$\geq 0.35$	✓
	$U_l$	0.72	$\geq 0.40$	✓
	TI	10 %	$\leq 15$ %	✓
	$R_{EI}$	0.68	$\geq 0.30$	✓
Kõnnitee (P5)	$E_{av}$	3.69 lx	[3.00 - 4.50] lx	✓
	$E_{min}$	2.39 lx	$\geq 0.60$ lx	✓

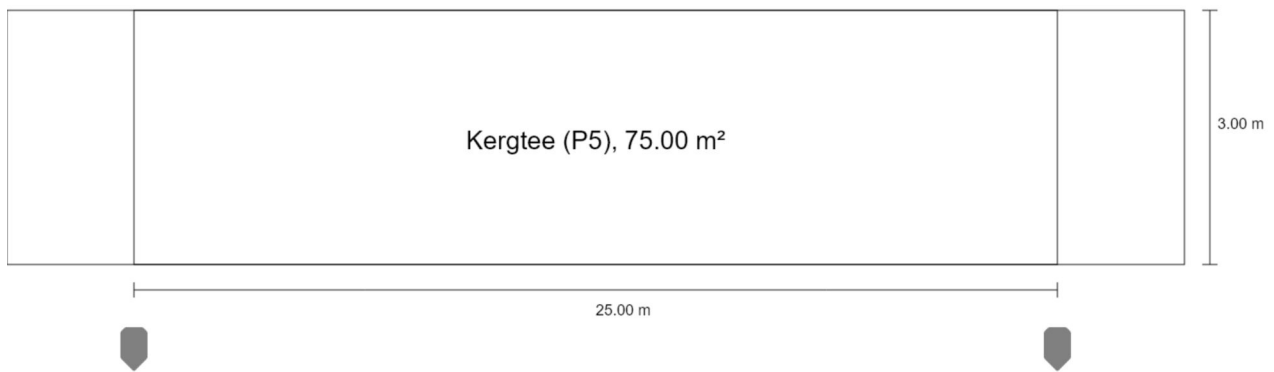
Results for energy efficiency indicators

	Symbol	Calculated	Energy Consumption
Järvekalda tee	$D_p$	0.008 W/lx*m <sup>2</sup>	–
MRUE 040 730 L22 AA016_Bin-L_TH (single side bottom)	$D_e$	0.4 kWh/m <sup>2</sup> yr	160.0 kWh/yr
MRUE 019 730 L22 AA004_Bin-L_TH (single side bottom)	$D_e$	0.2 kWh/m <sup>2</sup> yr	76.0 kWh/yr

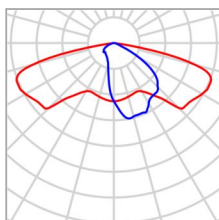
EN 13201:2015-5 does not include the case for planning with multiple luminaire arrangements. The calculation of the output values is done therefore only for the luminaire arrangement whose pole distance determines the length of the valuation fields.

Kergliiklustee eraldi valgustitega

**Summary (according to EN 13201:2015)**



Kergliiklustee eraldi valgustitega

**Summary (according to EN 13201:2015)**

Manufacturer	Not yet a DIALux member
Article No.	Micro Martin 10 W 4 LEDs
Article name	MRUE 010 730 L22 AA004_Bin-L_TH
Fitting	1x 4 LEDs bin L

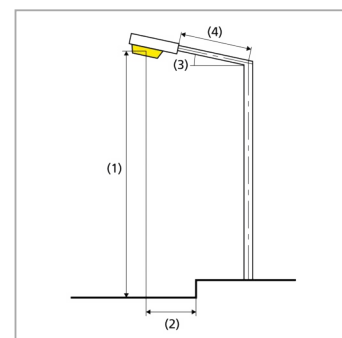
P	10.0 W
$\Phi_{\text{Lamp}}$	1111 lm
$\Phi_{\text{Luminaire}}$	1111 lm
$\eta$	100.00 %

Kergliiklustee eraldi valgustitega

**Summary (according to EN 13201:2015)**

MRUE 010 730 L22 AA004\_Bin-L\_TH (single side bottom)

Pole distance	25.000 m
(1) Light spot height	5.000 m
(2) Light point overhang	-1.000 m
(3) Boom inclination	0.0°
(4) Boom length	0.000 m
Annual operating hours	4000 h: 100.0 %, 10.0 W
Wattage / route	400.0 W/km
ULR / ULOR	0.00 / 0.00
Max. luminous intensities Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	$\geq 70^\circ$ : 577 cd/klm $\geq 80^\circ$ : 192 cd/klm $\geq 90^\circ$ : 2.41 cd/klm
Luminous intensity class The luminous intensity values in [cd/klm] for calculation of the luminous intensity class refer to the luminaire luminous flux according to EN 13201:2015.	G*1
Glare index class	D.6
MF	0.80



Kergliiklustee eraldi valgustitega

## Summary (according to EN 13201:2015)

Results for valuation fields

A maintenance factor of 0.80 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
Kergtee (P5)	$E_{av}$	4.49 lx	[3.00 - 4.50] lx	✓
	$E_{min}$	1.88 lx	$\geq 0.60$ lx	✓

Results for energy efficiency indicators

	Symbol	Calculated	Energy Consumption
Kergliiklustee eraldi valgustitega	$D_p$	0.030 W/lx*m <sup>2</sup>	–
MRUE 010 730 L22 AA004_Bin-L_TH (single side bottom)	$D_e$	0.5 kWh/m <sup>2</sup> yr	40.0 kWh/yr