

	MAX	FUTURA	Max p. 268 Futura p. 270
		BRALLO	Brallo p. 272
MINITONALE	TONALE	TONALE	Mini Tonale p. 274 Tonale p. 276
GIOVI	MONZA	MONZA	Giovi p. 278 Monza p. 280
	APRICA	APRICA	Aprica p. 282
SEMPIONE	GHISALLO	GHISALLO	Sempione p. 284 Ghisallo p. 285
	MONTECARLO	CAMPANA	Montecarlo p. 288 Campana p. 289
TOWN	TEX	IRIDE	Town p. 290 Tex p. 290 Iride p. 291
OLIVA	SECTOR	ALIANTE	Street lighting accessories Oliva p. 292 Sector p. 292 Aliante p. 292

Cuneo (Italy)



Rovigo (Italy)



Milan



Sesto San Giovanni - Milan



Milan



La Valletta - Malta



Milan



Milan



Svincolo stradale - Florence



Sesto San Giovanni - Milan



Milan Expo



Milan



Milan



Milan



La Valletta, airport - Malta



Milan



Milan



Milan



Milan



Milan



Poland



Desheng - China



Milan



Sesto San Giovanni - Milan



Arezzo (Italy)



Lousado Nine - Portugal



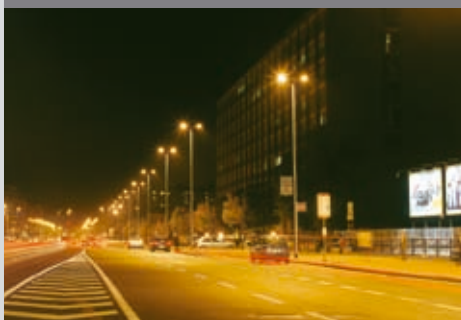
Francofonte - Syracuse (Italy)



Malta



Milan



Milan





Housing: Made of die-cast aluminium.

Cover: single piece die-cast aluminium, opens on hinges. With aluminium latches and safety device against accidental opening.

Diffuser: Tempered glass 5mm. 5 mm thick, resistant to impact and thermal shock (UNI7142 tests, British standard 3193).

Coating: Graphite grey polyester housing; grey cover (polyester powder coating, resistant to corrosive and saline environments).

Electric gear: 230V/50Hz power supply: Flexible wire terminated with quick connecting admiralty brass clamps; silicone insulation; cross-section: 1 sqmm. 2P terminal block (maximum allowed lead cross-section: 2.5mm sqmm).

Standard supply: Electric gear on a removable tray with quick connectors for line and lampholder connection. With anti-condensation filter. Option to install a photocell.

Equipment: During maintenance the cover stays attached by means of a device that prevents accidental closing. Environment-friendly gasket. Swivel mounting unit with protractor scale to control housing angle; supplied with knife switch.

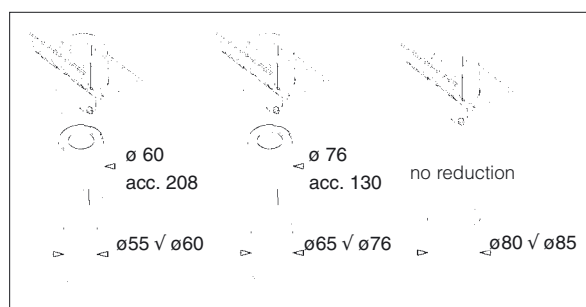
On request: the articles can be provided with the remote-control and remote management system, also with power reduction.

Lighting results: Max + pole 1499												
Source	Position	Flux	Disp.	S	H	L	D	I	Lm	Uo	UI	TI%
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	30	0°	1,34	0,43	0,66	8,8
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	26	0°	1,53	0,42	0,76	8
SAP-T250	X=2 Y=1	33000	Uni.	0	10	10	38	0°	1,59	0,42	0,71	9,8
SAP-T400	X=1 Y=1	55500	Opp.	0	12	12	44,5	0°	2,06	0,44	0,70	9,2

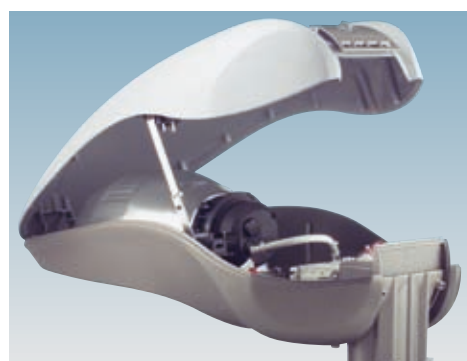
LIGHT-POLLUTION PREVENTING OPTIC:

Ideal for installation in **Zone 1** (UNI 10819) with the appropriate angle.

Lm = medium Luminance
Uo = general Uniformity
UI = Longitudinal Uniformity
TI% = debilitating glare



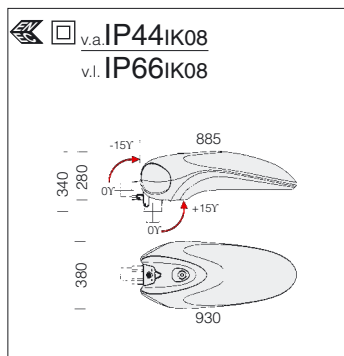
When acc. 130/208 is utilized.



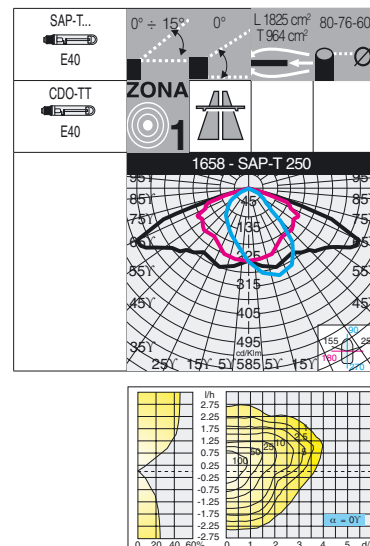
Reflector mounted on the fixture housing, equipped with base for lampholder with bayonet coupling and anti-condensation filter.

Electric gear on a removable tray for easier maintenance, with quick connectors for line and lampholder connection.





Reflector: LIGHT POLLUTION PREVENTING OPTICAL SYSTEM. Pressed aluminium 99.85, anodised and polished, with flux recovery device.

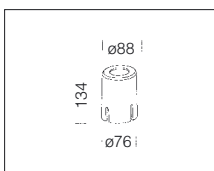
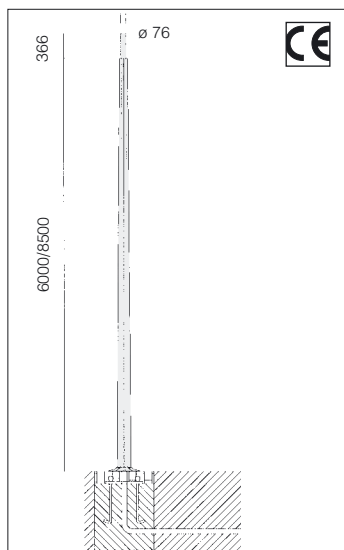


1658 Max

		CNRL		CNR		CNR - dual power wiring		Lamps (Ta=25°C)
wattage	colour	weight	code	weight	code	weight	code	Kelvin - ølm - Ra
CDO-TT 150	silver + graphite	12.50	314261-00					2800K - 13200lm - Ra 1b
SAP-T 150	silver + graphite			12.70	314262-00	12.70	314262-30	
SAP-T 250	silver + graphite			13.50	314263-00	13.50	314263-30	
SAP-T 400	silver + graphite			15.00	314264-00	15.00	314264-30	

Use the appropriate power adaptor for pole/head installation.

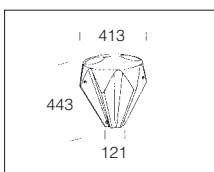
SAP-T: emission of yellow light with high luminous efficiency. Excellent for installation near junctions.



acc. 130 ø76 pole adapter

0,50 991230

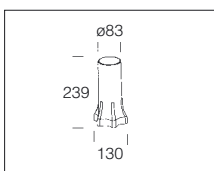
Made of aluminium. To be used to apply the fixture on a Ø76 pole.



acc. 207 diamond

s. silver 991241

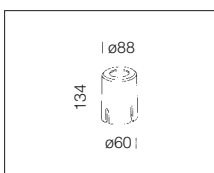
Made of aluminium. To be installed on the top of pole 1499 to install Max with arm acc. 204.



acc. 209 mast-top mounting

s. silver 991243

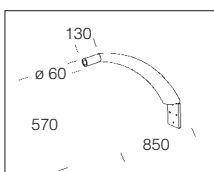
To be always used with acc. 130 for mast top installation on acc. 1499.



acc. 208 ø60 pole adapter

grey 991242

Made of aluminium. To be used to apply the fixture on a Ø60 pole.

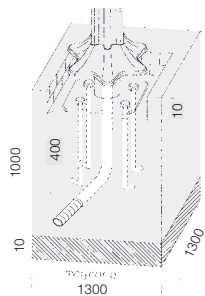


acc. 204 arm

s. silver 991240

Made of aluminium. For installation on poles acc. 1499. Supplied with Ø60 pole adapter. To be used with acc. 207.

Cement base size (subject to terrain variations, to bury the four log bolts).



acc 1499 pole with base

h = 6000 silv. 426490

h = 8500 silv. 426491

Made of steel. To be used with acc 207 for arm mounting with acc. 204 or with acc. 208 and 130 for mast-top mounting. Use acc. 209 for mast-top mounting.

On request: grey graphite at extra cost



Simulation

Housing: in die-cast aluminium.

Cover: in die-cast aluminium with hinged opening in one single piece. Aluminium latches and safety device against accidental opening.

Diffuser: tempered glass, 5 mm thick, resistant to impact and thermal shock (UNI EN 12150-1: 2001 tests).

Coating: graphite grey housing and polyester powder silver coating, resistant to corrosive and saline environments.

Electric gear: 230V/50Hz power supply. Flexible wire terminated with quick connect admiralty brass clamps, silicone double insulation, cross section 1.0 sq mm. 2P terminal block, maximum allowed lead cross section 2.5 sq mm.

Standard supply: electric gear on a removable tray with quick connectors for line and lamp holder connection. With anti-condensate filter. Dimmer switch option available.

Equipment: during maintenance the cover stays hooked on by a special device against accidental closure. Rotating socket with goniometric scale to adjust the housing and the standard knife switch.

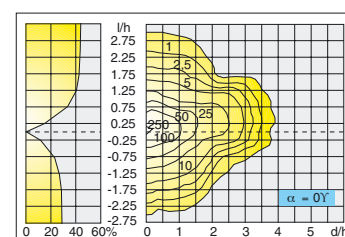
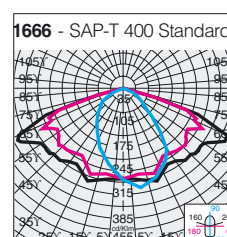
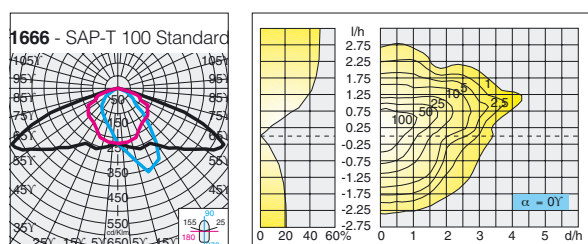
Upon request: fixtures can be supplied with a remote control system and power adaptor.

Lighting results: Futura												
Source	Position	Flux	Disp.	S	H	L	D	I	Lm	Uo	UI	TI%
SAP-T100	X=3,5 Y=1	10000	Uni.	0	7	7	26	0°	1,01	0,42	0,64	7,9
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	30	0°	1,34	0,43	0,66	8,8
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	26	0°	1,53	0,42	0,76	8
SAP-T250	X=2 Y=1	33000	Uni.	0	10	10	38	0°	1,59	0,42	0,71	9,8
SAP-T400	X=1 Y=1	55500	Opp.	0	12	12	44,5	0°	2,06	0,44	0,70	9,2

LIGHT-POLLUTION PREVENTING OPTIC:

Ideal for installation in **Zone 1** (UNI 10819) with the appropriate angle.


Lm = medium Luminance
Uo = general Uniformity
UI = Longitudinal Uniformity
TI% = debilitating glare

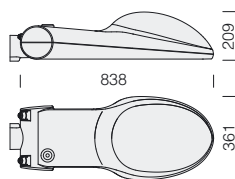


Reflector mounted on the housing with bayonet connector for the lamp holder and anti-condensation filter.

Electric gear on a removable tray for easier maintenance, with quick connectors for line and

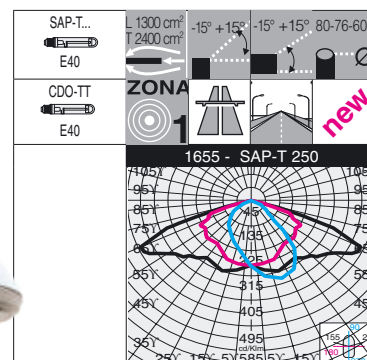
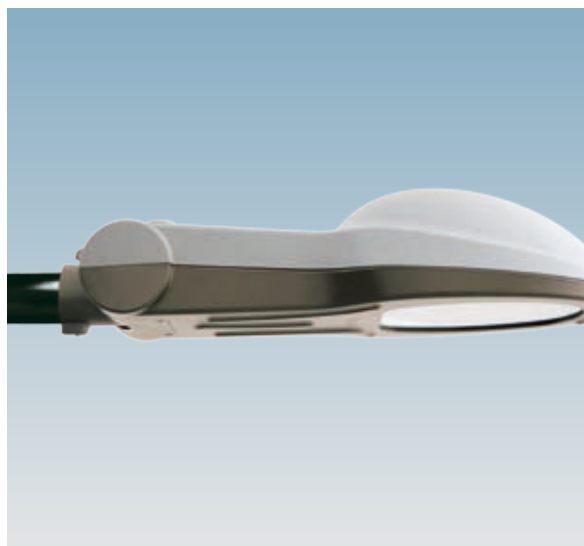


v.a. **IP44IK08** 
v.l. **IP66IK08**



Reflector: LIGHT POLLUTION PREVENTING OPTICAL SYSTEM.

In pressed 99.85 aluminium, oxidized and polished. The lamp focus can be adjusted.



1666 Futura						
		CNR		CNRL		Lamps (Ta=25°C)
wattage	colour	weight	code	weight	code	Kelvin - ølm - Ra
SAP-T 100	silver + graphite	9.00	324310-00			
SAP-T 150	silver + graphite	9.90	324311-00			
SAP-T 250	silver + graphite	10.90	324312-00			
SAP-T 400	silver + graphite	12.40	324313-00			
CDO-TT 150	silver + graphite			10.90	324316-00	2800K - 13500lm - Ra 1b

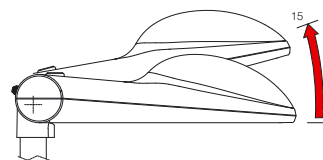
SAP-T: High luminous efficiency yellow light emission. Available upon request: bipower, sub code -30.

1666 Futura - with control system			
		CNR	
wattage	colour	weight	code
SAP-T 150	sil. + grap.	9.00	324311-0083
SAP-T 250	sil. + grap.	9.90	324312-0083

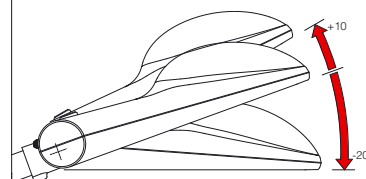
The following can also be ordered:

- with power-reducing electronic ballast
- with electronic ballast for remote control management

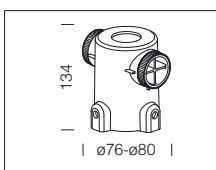
Mast-top mounting with possibility of inclination of the fixtures.



Mast-arm mounting with possibility of inclination of the fixtures.



Latches: made of die-cast aluminium. Option to install a photocell.



acc. 363 pole reduction ø76

0.50 991231

In aluminium. To be used to apply Futura on pole Ø76, Ø80.



Housing: Made of die-cast aluminium.

Cover: single piece die-cast aluminium, opens on hinges, steel latch and safety device against accidental opening.

Diffuser: tempered glass, 5 mm thick, resistant to impact and thermal shock (UNI EN 12150-1: 2001 tests).

Coating: graphite grey housing and polyester powder silver coating, resistant to corrosive and saline environments.

Electric gear: 230V/50Hz power supply: Flexible wire terminated with quick-connect admiralty brass clamps; double silicone insulation; cross-section: 1 sqmm . 2P nylon terminal block (maximum allowed lead cross-section: 2.5 sqmm).

Standard supply: Electric gear on a removable tray with quick connectors for line and lampholder connection. With anti-condensation filter. Option to install a photocell.

Equipment: During maintenance the cover stays attached by means of a device that prevents accidental closing. Environment-friendly silicone rubber gasket.

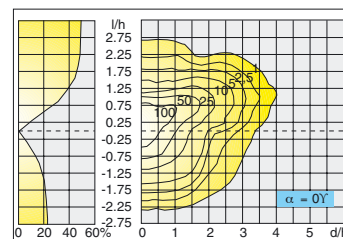
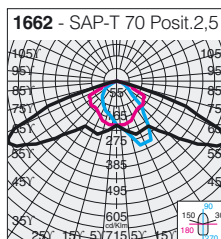
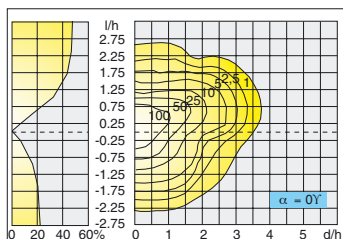
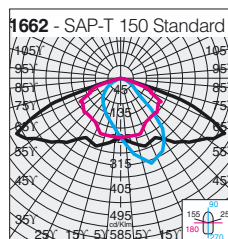
On request: fixtures can be provided with the remote-control and remote management system, also with power reduction.

Lighting results: Brallo												
Source	Position	Flux	Disp.	S	H	L	D	I	Lm	Uo	UI	TI%
SAP-T70	X=2,5 Y=1	6500	Uni.	0	6	6	24	0°	0,83	0,44	0,56	8,5
SAP-T100	X=3,5 Y=1	10000	Uni.	0	7	7	26	0°	1,01	0,42	0,64	7,9
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	30	0°	1,34	0,43	0,66	8,8
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	26	0°	1,53	0,42	0,76	8

LIGHT-POLLUTION PREVENTING OPTIC:

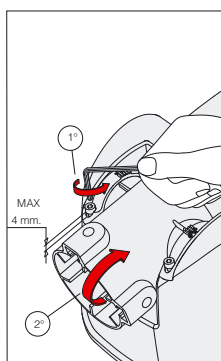
Ideal for installation in **Zone 1**
(UNI 10819) with the appropriate
angle.

Lm = medium Luminance
Uo = general Uniformity
UI = Longitudinal Uniformity
TI% = debilitating glare

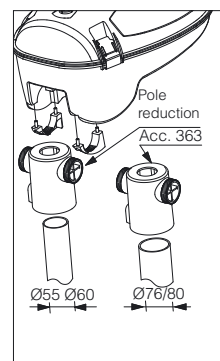
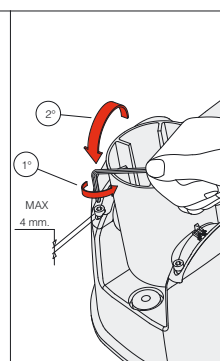


Hooks of closing in stainless steel with safety device. Option to install a photocell.

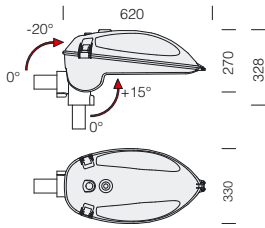
Electric gear on a removable tray for easier maintenance with quick connectors for line connection.



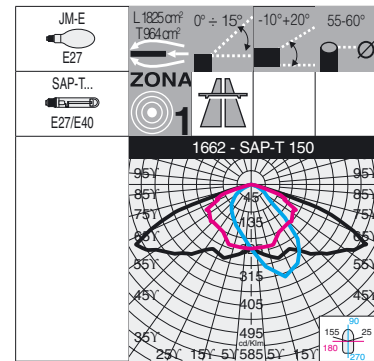
Mast-top or
mast-arm
fixing system.



IP66IK08



Reflector: Light pollution preventing optic unit. Pressed prismatic aluminium 99.85, anodised and polished.

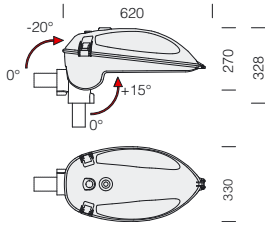


1662 Brallo

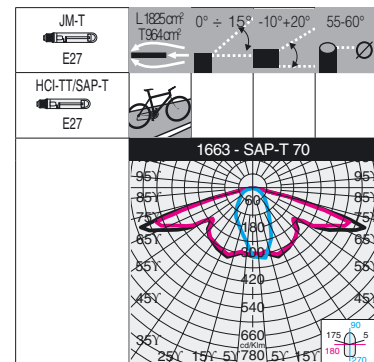
		CNR	
wattage	colour	weight	code
JM-E 100	silv.+grap.	7.40	313566-00
JM-E 150	silv.+grap.	8.20	313567-00
SAP-T 70	silv.+grap.	7.40	313565-00
SAP-T 100	silv.+grap.	7.40	313562-00
SAP-T 150	silv.+grap.	8.20	313563-00
SAP-T 250	silv.+grap.	8.90	313564-00

On request: bipower version with sub-code -30.

IP66IK08



Reflector: Light pollution preventing optic unit. Pressed prismatic aluminium 99.85, anodised and polished.



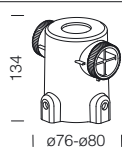
1663 Brallo bicycle pathways

		CNRL		Lamps (Ta=25°C)
wattage	colour	weight	code	Kelvin - ølm - Ra
SAP-T 70	silv.+grap.	7.50	313570-00	2000K - 6000lm - Ra 4
HCI-TT 70	silv.+grap.	7.50	313571-00	3000K - 7000lm - Ra 1b
JM-T 150	silv.+grap.	8.30	313572-00	4000K - 14000lm - Ra 1b

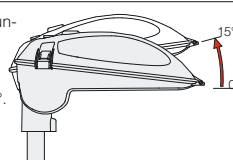
acc. 363 Ø76 pole adapter

0.50 991231

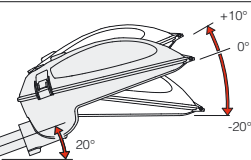
Made of aluminium. To be used to apply the fixture on a Ø76 pole, Ø80.

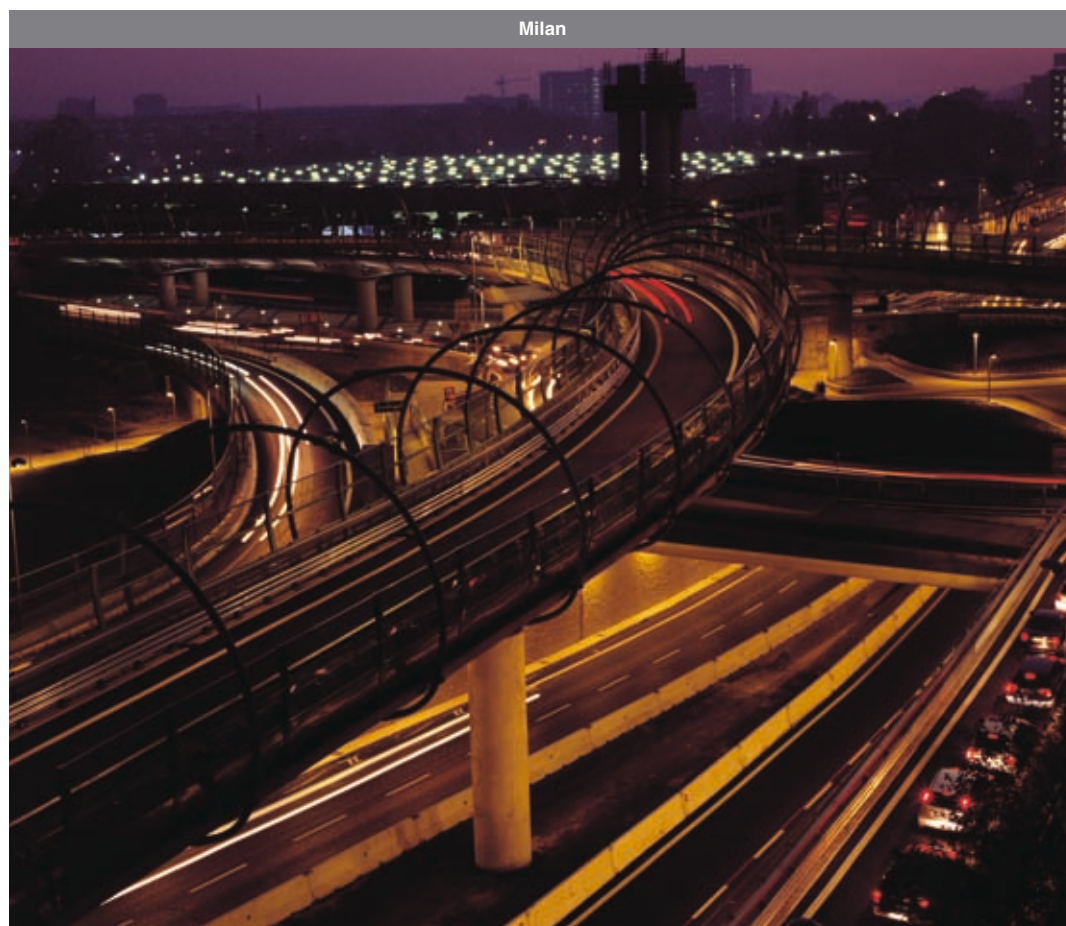


Mast-top mounting ø60 with possibility of inclination from 0° to 15°.



Mast-arm mounting with possibility of inclination from 20° to 0° (in negative) and 0° to 10° (in positive).





Milan

Housing: die-cast aluminium.

Cover: single-piece die-cast aluminium; hinge opening with stainless steel fastening and a safety device to prevent any accidental opening.

Diffuser: 5mm. thick tempered glass; resistant to thermal shock and impact (UNI12150-1: 2001 tests: 2001).

Coating: graphite grey polyester housing; grey cover (resistant to corrosive and saline environments).

Electric gear: 230V/50Hz supplied with thermal protection. Silicone wired terminated with admiralty brass quick-connect clamps; silicone double insulation, cross-section: 1 sqmm. 2P terminal block (maximum allowed lead cross-section: 2.5 sqmm).

Standard supply: wiring on removable gear tray with quick connectors for line to lampholder cup connection. Anti-condensation filter. Option to install a photocell.

Equipment: during maintenance the cover remains attached by means of a device against accidental closing. Environment-friendly gasket. Swivel connecting unit with protractor scale for housing adjustment and knife switch included in standard supply.

On request: fixtures can be provided with the remote-control and remote management system, also with power reduction.

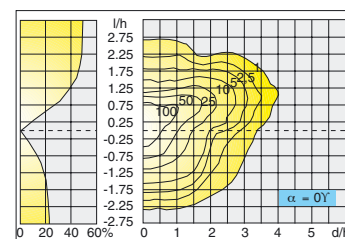
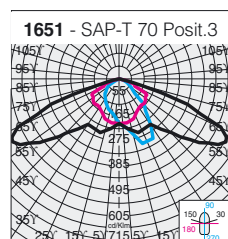
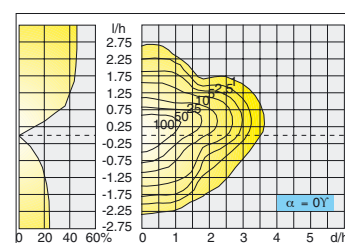
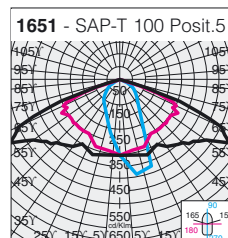
Lighting results: Mini Tonale												
Source	Position	Flux	Disp.	S	H	L	D	I	Lm	Uo	UI	TI%
SAP-T70	X=2,5 Y=1	6500	Uni.	0	6	6	24	0°	0,83	0,44	0,56	8,5
SAP-T100	X=3,5 Y=1	10000	Uni.	0	7	7	26	0°	1,01	0,42	0,64	7,9
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	30	0°	1,34	0,43	0,66	8,8
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	26	0°	1,53	0,42	0,76	8
SAP-T250	X=2 Y=1	33000	Uni.	0	10	10	38	0°	1,59	0,42	0,71	9,8
JM-T150	X=4 Y=1	14000	Uni.	0	8	8	24	0°	1,28	0,46	0,58	4,1

Lighting results: 1660 Mini Tonale												
Source	Position	Flux	Disp.	S	H	L	D	I	Em	Ug		
SAP-T70		6500	Uni.	0	5	2,5	30	0°	18,0	0,31		

Lm = medium Luminance
Uo = general Uniformity
UI = Longitudinal Uniformity
TI% = debilitating glare

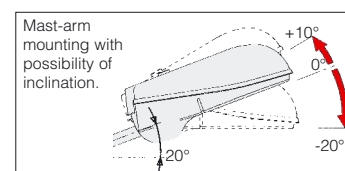
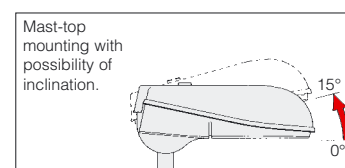
LIGHT-POLLUTION PREVENTING OPTIC:
Ideal for installation in
Zone 1 (UNI10619) with the appropriate
angle.

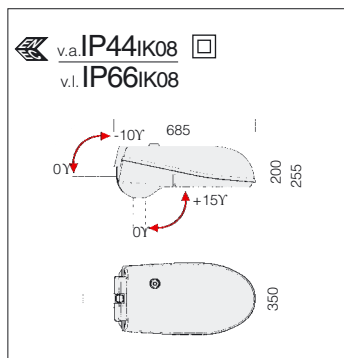
SAP the yellow light ensures high luminous efficiency. Perfect for installation near crossroads.



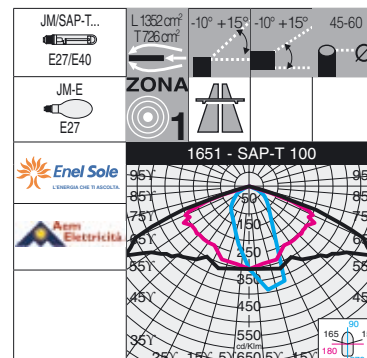
Option to install a photocell.
Hooks of closing in stainless steel with safety device.
Mast-arm: \varnothing 45-60.

Protractor scale for aiming adjustment.
For mast-top or mast-arm mounting.
Mast-top:
 \varnothing 60-76.

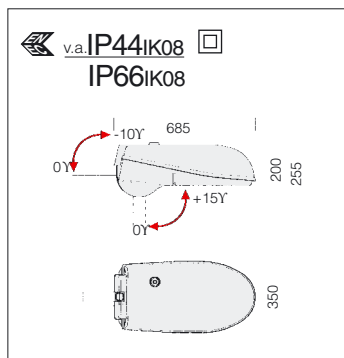




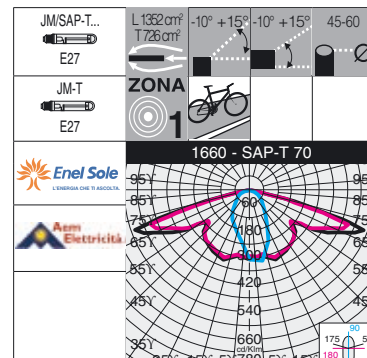
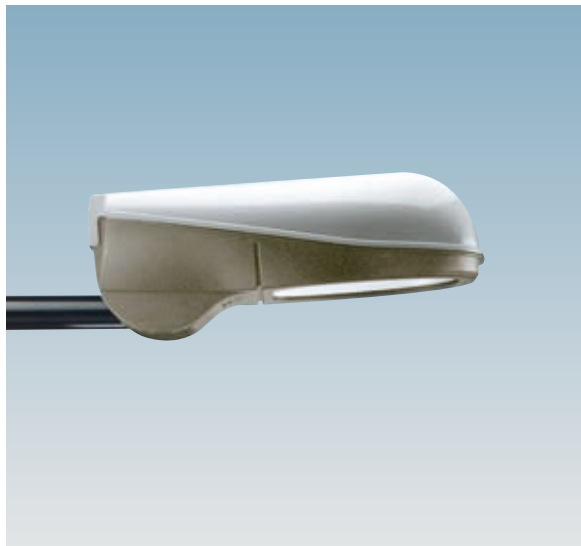
Reflector: LIGHT-POLLUTION PREVENTING OPTIC.
Pressed, anodised and polished 99.85 aluminium.



1651 Mini Tonale								
		CNR		CNRL		CNR - bipower version		Lamps (Ta=25°C)
wattage	colour	weight	code	weight	code	weight	code	Kelvin - ølm - Ra
SAP-T 70	silv.+grap.	9.40	313465-00			9.40	313465-30	
SAP-T 100	silv.+grap.	9.70	313466-00			9.70	313466-30	
SAP-T 150	silv.+grap.	10.10	313461-00			10.10	313461-30	
JM-T 150	silv.+grap.	10.10	313462-00					
SAP-T 250	silv.+grap.	11.50	313464-00			11.50	313464-30	
JM-E 100	silv.+grap.			10.10	313467-00			4000K - 9000lm
JM-E 125	silv.+grap.			9.50	313463-00			3700K - 12000lm



Reflector: LIGHT-POLLUTION PREVENTING OPTIC.
Pressed, anodised and polished 99.85 aluminium.



1660 Mini Tonale - bicycle pathways				
		CNRL		Lamps (Ta=25°C)
wattage	colour	weight	code	Kelvin - ølm - Ra
SAP-T 70	silv.+grap.	9.40	313450-00	2000K - 6000lm - Ra 4
JM-T 70	silv.+grap.	10.10	313451-00	4000K - 5300lm - Ra 1b
JM-T 150	silv.+grap.	10.10	313452-00	4000K - 14000lm - Ra 1b

Coloured housing and cover available on request.



La Valletta Airpot - Malta



Housing: In die-cast aluminium.

Cover: Hinge opening in aluminium, die-cast in a single piece. With stainless steel latches and safety device against accidental opening.

Diffuser: Tempered glass, 5 mm thick, thermal shock and impact resistant (UNI12150-1: 2001 tests: 2001).

Coating: Graphite grey polyester housing; grey cover (resistant to corrosive and saline environments).

Electric gear: 230V/50Hz power supply. Silicone wired terminated with quick connect clamps in admiralty brass, fibreglass braid, 1.0 sqmm cross-section. 2P terminal block with maximum allowed lead cross section of 2.5 sqmm.

Standard supply: Electric gear on a removable tray with quick connectors for line and lampholder connection. Equipped with anti-condensation filter. Option to install a photocell. Standard with pole unit adapter Ø 60.

Equipment: During maintenance the cover stays attached by means of a device that prevents accidental closing. Environment-friendly gasket. Rotating attachment with protractor scale to adjust the housing. Standard-supply knife switch.

On request: fixtures can be provided with the remote-control and remote management system, also with power reduction.

Lighting results: Tonale 1

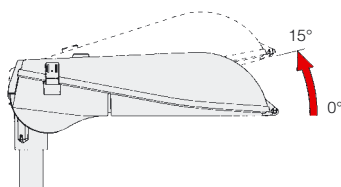
Source	Position	Flux	Disp.	S	H	L	D	I	Lm	Uo	UI	TI%
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	30	0°	1,34	0,43	0,66	8,8
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	26	0°	1,53	0,42	0,76	8
SAP-T250	X=2 Y=1	33000	Uni.	0	10	10	38	0°	1,59	0,42	0,71	9,8
SAP-T400	X=1 Y=1	55500	Opp.	0	12	12	44,5	0°	2,06	0,44	0,70	9,2

**LIGHT-POLLUTION
PREVENTING OPTIC:**

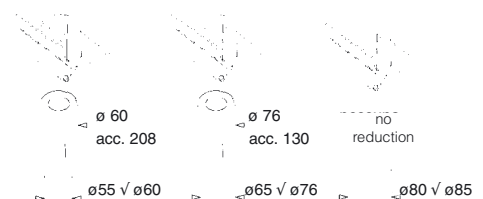
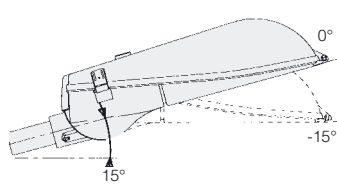
Ideal for installation in **Zone 1** (UNI10619) with the appropriate angle.

Lm = medium Luminance
Uo = general Uniformity
UI = Longitudinal Uniformity
TI% = debilitating glare

Mast-top mounting with possibility of inclination.



Mast-arm mounting with possibility of inclination.



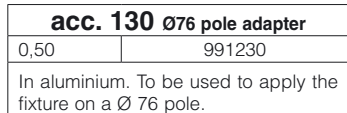
Protractor scale for aiming adjustment. Enables mast top or mast arm mounting. Option to install a photocell. Stainless steel locks with safety device to prevent any accidental opening.

Standard-supply knife switch to cut off the power supply automatically during maintenance. Class II insulation.



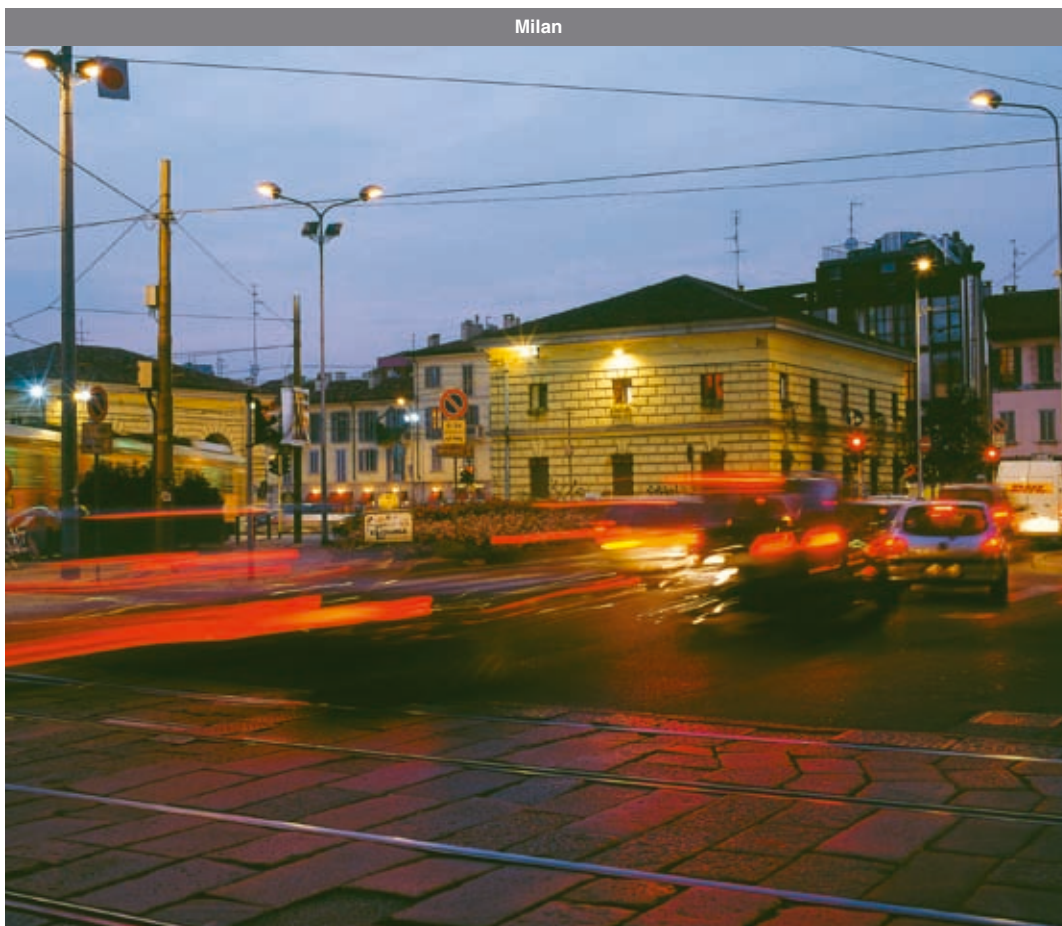


STREET LIGHTING



1153 Tonale - polycarbonate diffuser									
		CNR		CNRL			CNR - bipower version		Lamps (Ta=25°C)
wattage	colour	weight	code	weight	code		weight	code	Kelvin - ølm - Ra
SAP-T 150	sil.+grap.	12.20	313763-00				12.20	313763-30	
SAP-T 250	sil.+grap.	13.00	313764-00				13.00	313764-30	
SAP-T 400	sil.+grap.	14.50	313765-00				14.50	313765-30	
JM-E 100	sil.+grap.			12.20	313766-00				4000K - 9000lm
JM-E 150	sil.+grap.			12.20	313767-00				4000K - 14000lm

Standard supply includes pole adapter Ø 60 mm



Housing: in die-cast aluminium.

Cover: hinge opening in aluminium, die-cast in a single piece. With stainless steel latch with safety device.

Diffuser: tempered, 5 mm thick, thermal shock and impact resistant (UNI12150-1: 2001 tests: 2001).

Coating: graphite grey polyester housing and metallized silver paint for better resistance to corrosion and salty environments.

Electric gear: 230V/50Hz power supply. Silicone wired terminated with quick connect clamps in admiralty brass, fibreglass braid, 1.0 sqmm cross-section. 2P terminal block with maximum allowed lead cross section of 2.5 sqmm.

Standard supply: electric gear on a removable tray with quick connectors for line and lampholder connection. Equipped with anti-condensation filter. Option to install a photocell.

Equipment: during maintenance the cover stays attached by means of a device that prevents accidental closing. Environment-friendly gasket. Rotating attachment with protractor scale to adjust the housing. Standard-supply knife switch.

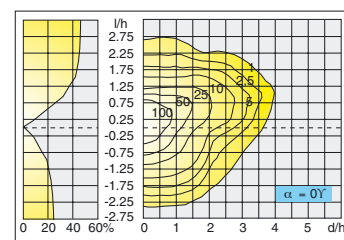
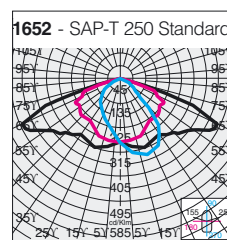
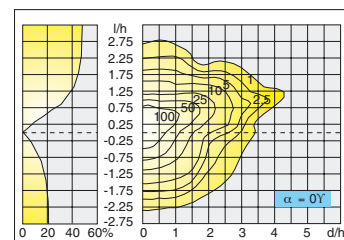
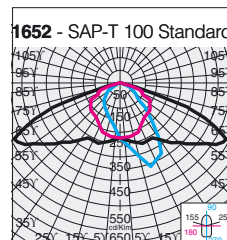
On request: fixtures with remote-control and remote management system, plus power reduction

Lighting results: Giovi												
Source	Position	Flux	Disp.	S	H	L	D	I	Lm	Uo	UI	TI%
SAP-T70	X=2,5 Y=1	6500	Uni.	0	6	6	24	0°	0,83	0,44	0,56	8,5
SAP-T100	X=3,5 Y=1	10000	Uni.	0	7	7	26	0°	1,01	0,42	0,64	7,9
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	30	0°	1,34	0,43	0,66	8,8
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	26	0°	1,53	0,42	0,76	8
SAP-T250	X=2 Y=1	33000	Uni.	0	10	10	38	0°	1,59	0,42	0,71	9,8
SAP-T400	X=1 Y=1	55500	Opp.	0	12	12	44,5	0°	2,06	0,44	0,70	9,2
Lighting results: 1654 Giovi												
Source	Position	Flux	Disp.	S	H	L	D	I	Em	Ug		
SAP-T70		6500	Uni.	0	5	2,5	30	0°	18,0	0,31		

Lm = medium Luminance
Uo = general Uniformity
UI = Longitudinal Uniformity
TI% = debilitating glare

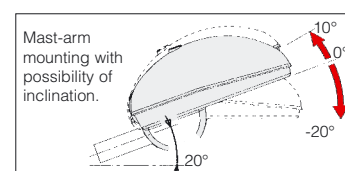
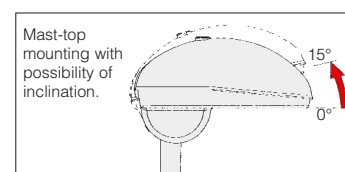
LIGHT-POLLUTION PREVENTING OPTIC:
Ideal for installation in
Zone 1 (UNI10619) with the appropriate
angle.

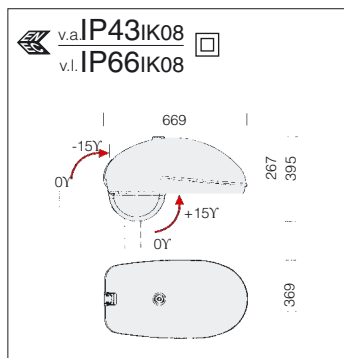
SAP the yellow light ensures high luminous efficiency. Perfect for installation near crossroads.



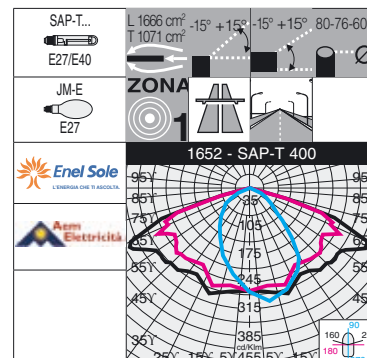
Reflector mounted on the fixture housing, equipped with base for lampholder with bayonet coupling and anti-condensation filter. Electric gear on a removable tray for easier maintenance

Quick connectors for line and lampholder connection.

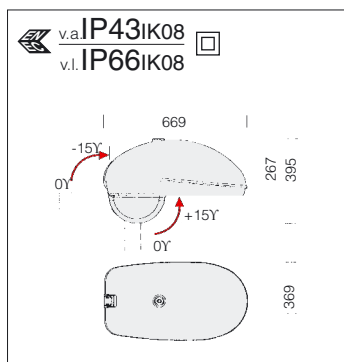




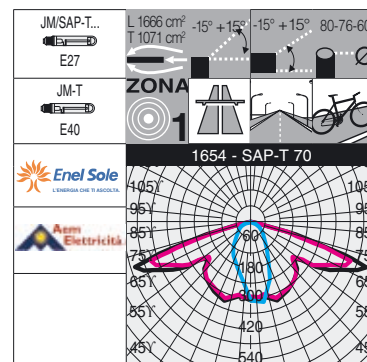
Reflector: LIGHT POLLUTION-CONTROL LOUVRE.
In anodised, polished, pressed 99.85 aluminium.



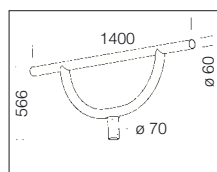
1652 Giovi								
		CNR		CNRL		CNR - bipower version		Lamps (Ta=25°C)
wattage	colour	weight	code	weight	code	weight	code	Kelvin - ølm - Ra
SAP-T 70	silv.+grap.	10.20	314063-00			10.20	314063-30	
SAP-T 100	silv.+grap.	10.50	314064-00			10.50	314064-30	
SAP-T 150	silv.+grap.	11.00	314065-00			11.00	314065-30	
SAP-T 250	silv.+grap.	12.30	314066-00			12.30	314066-30	
SAP-T 400	silv.+grap.	13.90	314067-00			13.90	314067-30	
JM-E 100	silv.+grap.			10.50	314068-00			4000K - 9000lm
JM-E 150	silv.+grap.			10.50	314069-00			4000K - 14000lm



Reflector: LIGHT POLLUTION-CONTROL LOUVRE.
In anodised, polished, pressed 99.90 aluminium.



1654 Giovi - bicycle pathways							
		CNRL		Lamps (Ta=25°C)			
wattage	colour	weight	code	Kelvin - ølm - Ra			
SAP-T 70	silv.+grap.	10.20	314090-00	2000K - 6000lm - Ra 4			
JM-T 70	silv.+grap.	10.50	314091-00	4000K - 5300lm - Ra1b			
JM-T 150	silv.+grap.	11.00	314092-00	4000K - 14000lm - Ra 1b			



Coloured housing available on request.

acc. 140 dual connection	
7.30	991350
For use with acc. 130 to be mast-arm mounting on acc.1499.	



Simulation

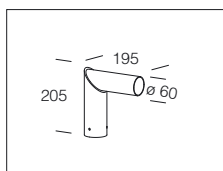
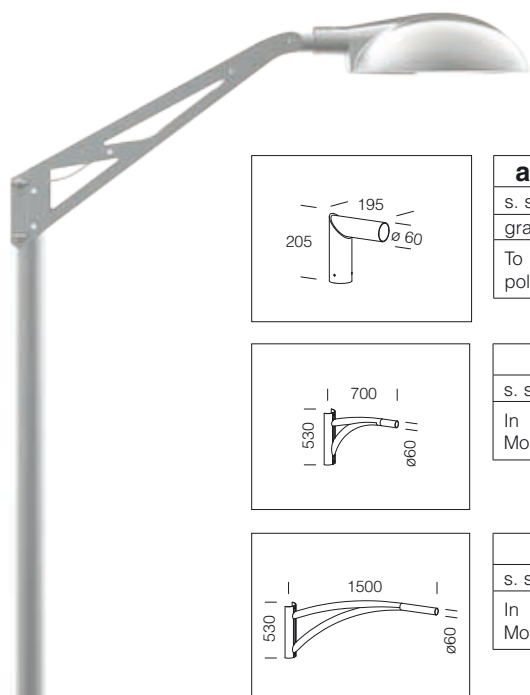
Lighting results: Monza												
Source	Position	Flux	Disp.	S	H	L	D	I	Lm	Uo	UI	TI%
HCI-T70	P=1 Y=0	6700	Uni.	0,5	6	6	21	0°	1,06	0,42	0,5	2,78

Lm = medium Luminance
 Uo = general Uniformity
 UI = Longitudinal Uniformity
 TI% = debilitating glare

LIGHT-POLLUTION PREVENTING OPTIC:
 Ideal for installation in **Zone 1** (UNI10619)
 with the appropriate angle.
SAP the yellow light ensures high luminous

efficiency. Perfect for installation near
 crossroads.

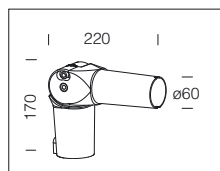
Equipped with base
 for lampholder with
 bayonet coupling
 and anti-condensa-
 tion filter.



acc. 205 mast-top attachment

s. silver	426948
graphite	426949

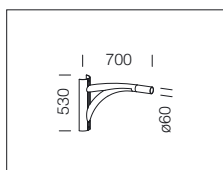
To be used when installing Monza on
 pole Ø60. 90° fixed.



acc. 405 adjust. mount. unit

m. silver	991385
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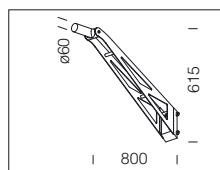
To be used when installing Monza on
 pole Ø60 with acc.130. Adjustable
 mounting unit.



406 Aliante arm

s. silver	991387
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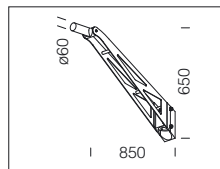
In steel. To be used when installing
 Monza on pole.



407 Aliante arm

s. silver	991389
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In steel. To be used when installing
 Monza on pole.

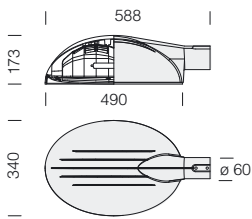


acc. 467 arm

s. silver	991413
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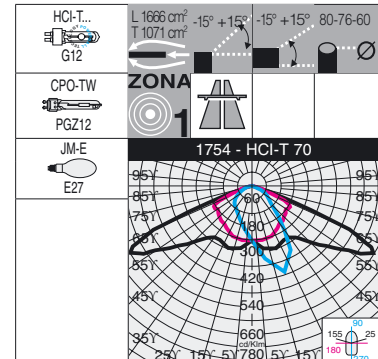
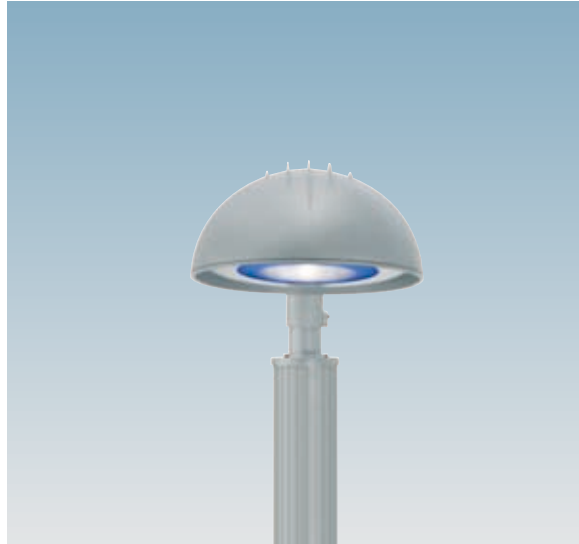
To be used when installing Monza on
 pole art. 1492/1494.

IP66IK08



Reflector: LIGHT POLLUTION-CONTROL LOUVRE.

In anodised, polished, pressed 99.85 aluminium, with flux recovery.



1754 Monza 1 - with blue printed glass

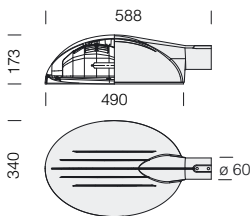
wattage	colour	CELL		Lamps (Ta=25°C)
		weight	code	Kelvin - ølm - Ra
HCI-T 70	s. silver	6.00	423041-00	4200K - 6700lm - Ra 1b
HCI-T 150	s. silver	6.00	423046-00	4200K - 14500lm - Ra 1b
CPO-TW 60	s. silver	6.00	423042-00	2800K - 6850lm - Ra 2a
CPO-TW 90	s. silver	6.00	423044-00	2800K - 10450lm - Ra 2a
JM-E 100	s. silver	6.00	423045-00	3200K - 9000lm - Ra 2a

Over-price on request:

- 1) bicycle pathways versions
- 2) coloured versions
- 3) versions with red or green coloured optics, which characterize different lit areas and also create light effects.

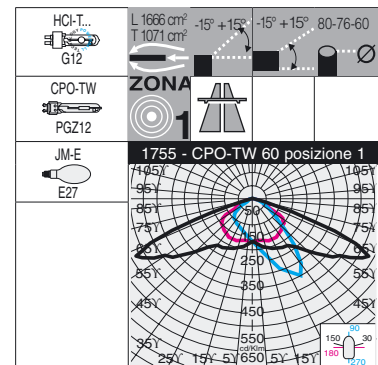


IP66IK08

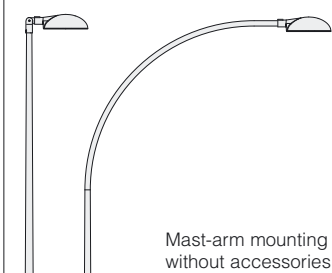


Reflector: LIGHT POLLUTION-CONTROL LOUVRE.

In anodised, polished, pressed 99.85 aluminium, with flux recovery.



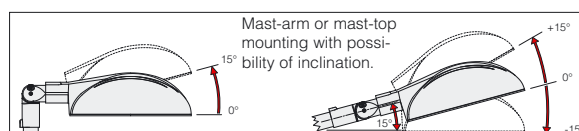
Mast-top mounting
with acc. 405



Mast-arm mounting
without accessories

1755 Monza 2 - with glass

wattage	colour	CELL		Lamps (Ta=25°C)
		weight	code	Kelvin - ølm - Ra
HCI-T 70	s. silver	6.00	423051-00	4200K - 6700lm - Ra 1b
HCI-T 150	s. silver	6.00	423056-00	4200K - 14500lm - Ra 1b
CPO-TW 60	s. silver	6.00	423052-00	2800K - 6850lm - Ra 2a
CPO-TW 90	s. silver	6.00	423054-00	2800K - 10450lm - Ra 2a
JM-E 100	s. silver	6.00	423055-00	3200K - 9000lm - Ra 2a



Marostica (Vicenza) - Italy



Housing: In die-cast aluminium.

Cover: Single-piece die-cast aluminium; hinge opening with die-cast aluminium fastening and a safety device to prevent any accidental opening.

Reflector: LIGHT POLLUTION-CONTROL LOUVRE. In anodised, polished, pressed 99.85 aluminium.

Coating: Graphite grey polyester housing; grey cover (resistant to corrosive and saline environments).

Electric gear: 230V/50Hz power supply. Silicone wired terminated with quick connect clamps in admiralty brass, fibreglass braid, 1.0 sqmm cross-section. 2P terminal block with maximum allowed lead cross section of 2.5 sqmm.

Standard supply: Electric gear on a removable tray with quick connectors for line and lampholder connection. Equipped with anti-condensation filter. Option to install a photocell. Standard with pole unit adapter Ø 60.

Equipment: During maintenance the cover stays attached by means of a device that prevents accidental closing. Environment-friendly gasket. Rotating attachment with protractor scale to adjust the housing. Standard-supply knife switch.

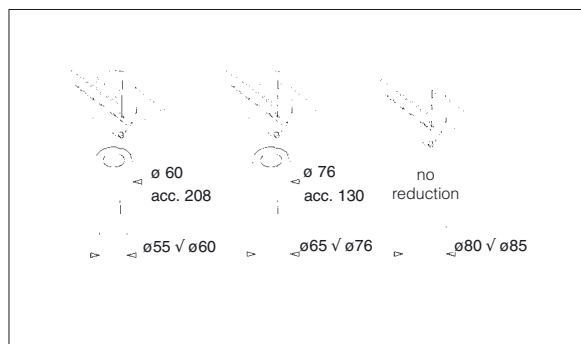
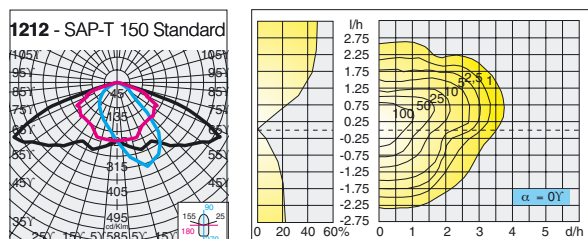
On request: fixtures with remote-control and remote management system, plus power reduction

Lighting results: Aprica 1

Source	Position	Flux	Disp.	S	H	L	D	I	Lm	Uo	UI	TI%
SAP-T100	X=3,5 Y=1	10000	Uni.	0	7	7	26	0°	1,01	0,42	0,64	7,9
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	30	0°	1,34	0,43	0,66	8,8
SAP-T150	X=4 Y=1	17200	Uni.	0	8	8	26	0°	1,53	0,42	0,76	8
SAP-T250	X=2 Y=1	33000	Uni.	0	10	10	38	0°	1,59	0,42	0,71	9,8

LIGHT-POLLUTION PREVENTING OPTIC:

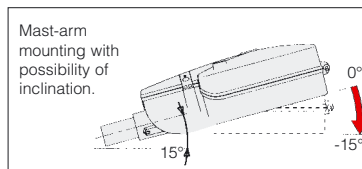
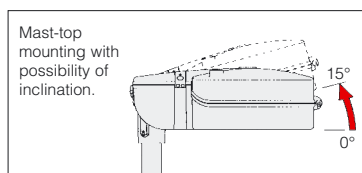
Ideal for installation in **Zone 1** (UNI10619) with the appropriate angle.
 Lm = medium Luminance
 Uo = general Uniformity
 UI = Longitudinal Uniformity
 TI% = debilitating glare

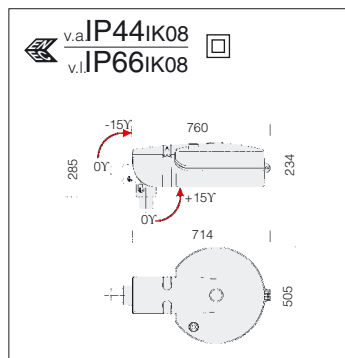


Reflector mounted on fixture housing, equipped with bayonet coupling lampholder base and anti-condensation filter. Equipped with quick connector for line and lampholder connection. Standard-supply knife switch to cut off the power supply automatically during maintenance.

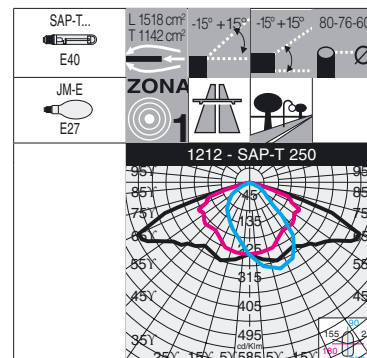
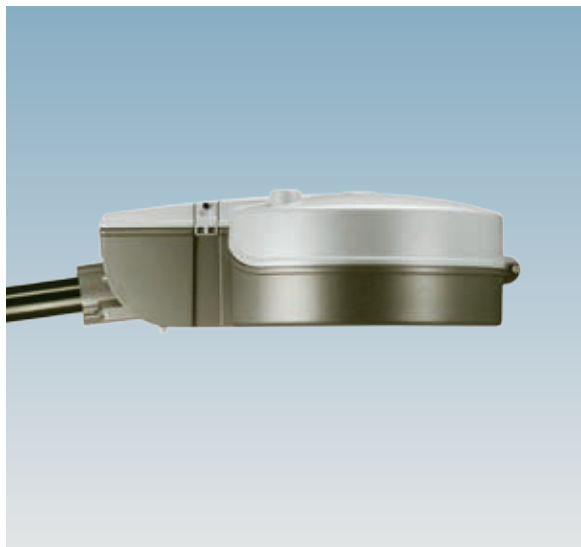


Other colours available on request.



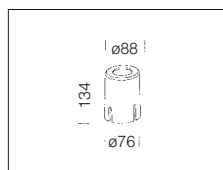


Diffuser: tempered glass, 5 mm thick, thermal shock and impact resistant (UNI12150-1: 2001 tests: 2001)



1212 Aprica 1 - glass diffuser

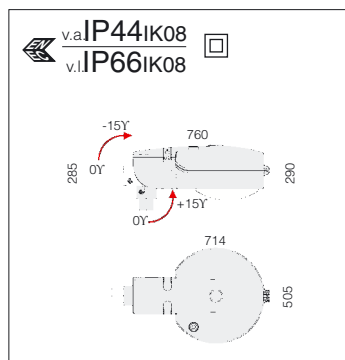
		CNR		CNRL		CNR - bipower version		Lamps (Ta=25°C)
wattage	colour	weight	code	weight	code	weight	code	Kelvin - ølm - Ra
SAP-T 100	silv.+grap.	14.00	313863-00			14.00	313863-30	
SAP-T 150	silv.+grap.	14.30	313864-00			14.30	313864-30	
SAP-T 250	silv.+grap.	15.80	313865-00			15.80	313865-30	
JM-E 100	silv.+grap.			14.00	313866-00			4000K - 9000lm
JM-E 150	silv.+grap.			14.00	313867-00			4000K - 14000lm



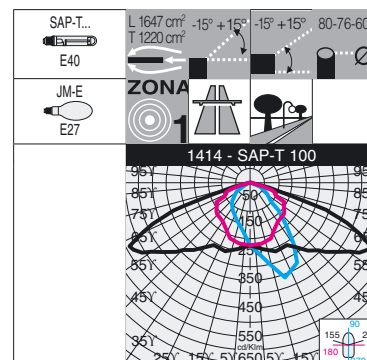
acc. 130 pole reduction Ø76

0,50 991230

In aluminium. To be used to apply the fixture on a Ø 76 pole.

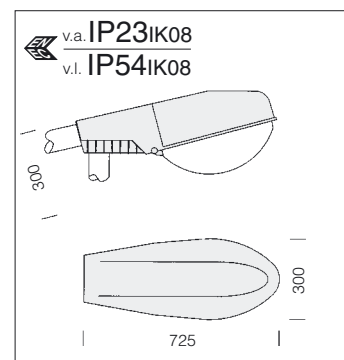
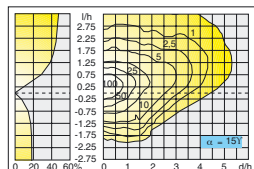
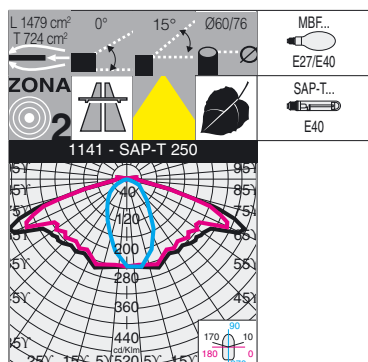


Diffuser: pressed tempered and prismatic glass.



1412 Aprica 1 - prismatic glass diffuser

		CNR		CNRL		CNR - bipower version		Lamps (Ta=25°C)
wattage	colour	weight	code	weight	code	weight	code	Kelvin - ølm - Ra
SAP-T 100	silv.+grap.	14.20	313973-00			14.20	313973-30	
SAP-T 150	silv.+grap.	15.40	313974-00			15.40	313974-30	
SAP-T 250	silv.+grap.	16.30	313975-00			16.30	313975-30	
JM-E 100	silv.+grap.			14.20	313976-00			4000K - 9000lm
JM-E 150	silv.+grap.			14.20	313977-00			4000K - 14000lm



Housing: in die-cast aluminium.

Cover: hinge-opening, vandal resistant and self-extinguishing polycarbonate, UV-stabilised.

Reflector: in anodised, polished, pressed 99.85 aluminium, with flux recovery.

Diffuser: in vandal resistant and V2 self-extinguishing polycarbonate, UV-stabilised. With latches in steel.

Coating: with epoxy-polyester fluid, grey, RAL 7035, resistant to corrosion.

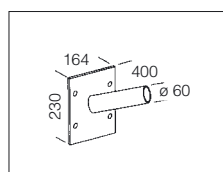
Electric gear: 230V/50 Hz power supply. Silicone wire terminated with quick-connect clamps in admiralty brass, cross-section 1.0 sqmm. 2P+T nylon terminal block with maximum allowed lead cross-section of 4 sqmm.

Equipment: silicone rubber gasket. Equipped with an anti-condensation filter. Lamp focus can be axial adjusted. Mast-top (Ø 60/76) or mast-arm (Ø 42/60) mounting. During maintenance the housing and diffuser remain attached for easy maintenance.

1141 Sempione

		CNR		CNR double insulation	
wattage	colour	weight	code	weight	code
MBF 125	s. silver	6.00	313141-00	6.10	313151-00
MBF 250	s. silver	6.90	313142-00	6.90	313152-00
SAP-T 100	s. silver	7.20	313143-00	7.20	313153-00
SAP-T 150	s. silver	6.70	313144-00	6.70	313154-00
SAP-T 250	s. silver	8.10	313145-00	8.10	313155-00

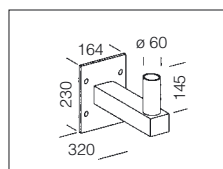
Double insulation, without knife witch.



acc. 48 wall bracket

1.30 997706

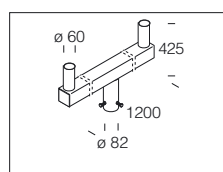
In grey steel. Used for wall mounting. Connection Ø 60. Angle 15°.



acc. 72 wall bracket

4.00 997910

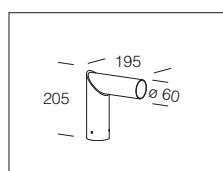
Cationic-electrocoated tropicalised black steel, with mounting plate. For wall mounting.



acc. 74 double mounting on mast

7.00 997911

Cationic-electrocoated tropicalised black steel. For on-mast installation of two fixtures. Connection Ø 60/76.



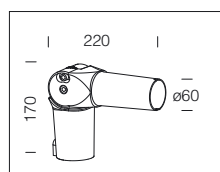
acc. 205 mast-top mounting

s. silver. 426948

graphite 426949

galvanized 426941

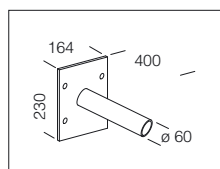
To be used when installing **Ghisallo** on pole Ø60. 90° fixed.



405 adjust. mount. unit

m. silver 991385

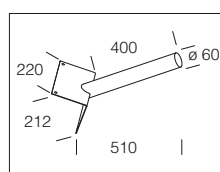
To be used when installing Monza on pole Ø60 with acc.130. Adjustable mounting unit. **For Ghisallo.**



248 wall bracket

1.30 997708

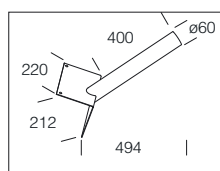
In grey steel. For wall mounting. Connection Ø 60. **For Ghisallo.**



249 corner bracket

1.90 997803

In grey steel. For wall corner mounting. Connection Ø 60. **For Ghisallo.**

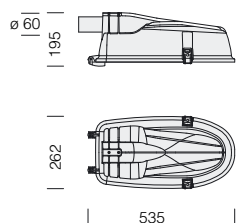


acc. 49 corner bracket

1.90 997802

In grey steel. For wall corner mounting. Connection Ø 60. Angle 15°.

IP66IK08



Housing: In die-cast aluminium with hinge opening and stainless steel latches.

Diffuser: Tempered glass, 5 mm thick, thermal shock and impact resistant (UNI12150-1: 2001 tests: 2001).

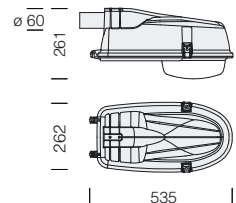
Reflector: LIGHT POLLUTION-CONTROL REFLECTOR. In anodised, polished, pressed 99.85 aluminium, with flux recovery.

Coating: silver polyester housing (resistant to corrosive and saline environments).

Electric gear: 230V/50Hz power supply. Silicone wired terminated with quick connect clamps in admiralty brass, fibreglass braid, 1.0 sqmm cross-section. 2P terminal block with maximum allowed lead cross section of 2.5 sqmm.

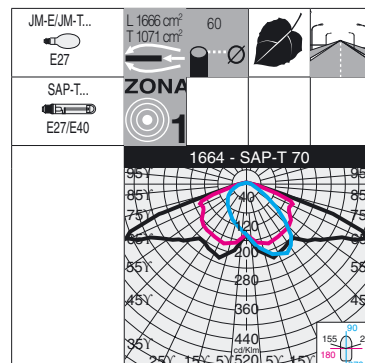
Standard supply: Electric gear on a removable tray with quick connectors for line and lampholder connection. Equipped with anti-condensation filter.

IP65IK08

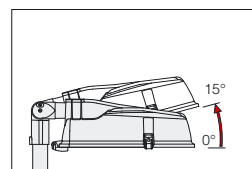


Diffuser: in clear polycarbonate vandal-resistant and V2 self-extinguishing, UV-stabilised.

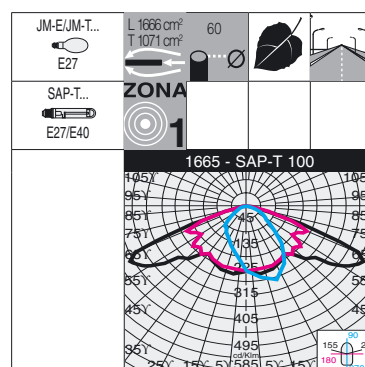
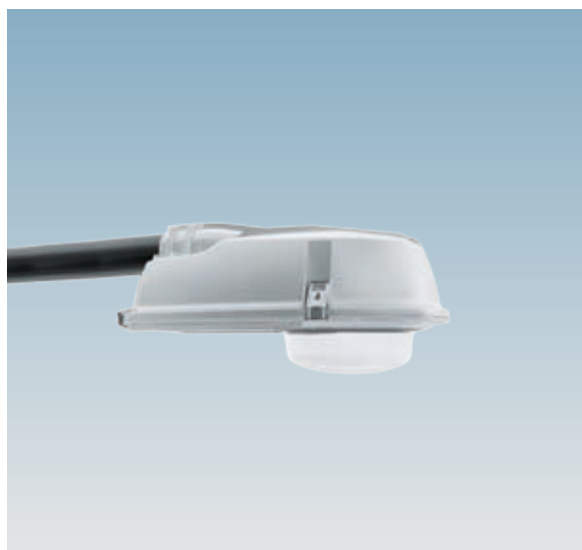
Reflector: LIGHT POLLUTION-CONTROL REFLECTOR. In anodised, polished, pressed 99.85 aluminium,



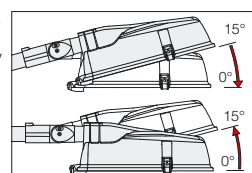
Mast-top mounting with possibility of inclination.



1664 Ghisallo 1 - with glass						
		CNRL		CNR		Lamps (Ta=25°C)
wattage	colour	weight	code	weight	code	Kelvin - ølm - Ra
JM-T 70	s. silver	5.50	314030-00			4000K - 5300lm
JM-E 100	s. silver	5.70	314032-00			4000K - 9000lm
JM-E 150	s. silver	6.80	314033-00			4000K - 14000lm
SAP-T 70	s. silver			5.50	314034-00	
SAP-T 100	s. silver			5.70	314035-00	
SAP-T 150	s. silver			6.80	314036-00	
SAP-T 250	s. silver			7.10	314038-00	



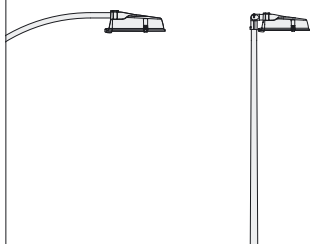
Mast-arm acc. 405 mounting with possibility of inclination.



1665 Ghisallo 2 - with diffuser						
		CNRL		CNR		Lamps (Ta=25°C)
wattage	colour	weight	code	weight	code	Kelvin - ølm - Ra
JM-T 70	s. silver	4.60	314040-00			4000K - 5300lm
JM-E 100	s. silver	4.90	314042-00			4000K - 9000lm
JM-E 150	s. silver	4.90	314043-00			4000K - 14000lm
SAP-T 70	s. silver			4.60	314044-00	
SAP-T 100	s. silver			4.90	314045-00	
SAP-T 150	s. silver			4.90	314046-00	

Mast-arm mounting without accessories

Mast-top mounting with acc. 405

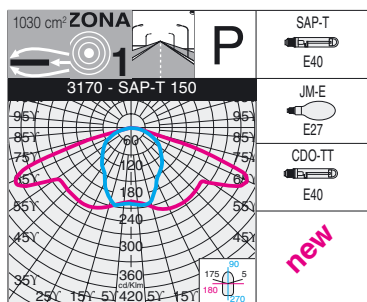




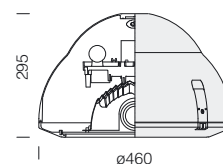


Many street lighting renovation projects for city centres, high streets or buildings close to one another very often require street-designed optics to be mounted in the middle of the road on ropes or tie rods.

For a few years now Disano Illuminazione has been designing lighting fixtures for this type of application, beautifully combining lighting technology and sophisticated design.



IP65IK08



Housing / Frame: in die-cast aluminium with latch.

Reflector: LIGHT POLLUTION-CONTROL REFLECTOR. In anodised, polished, pressed 99.85 aluminium.

Diffuser: in pressed, prismatic glass, 5 mm thick thermal shocks and impact resistant (UNI EN 12150-1/2001 tests).

Coating: grey epoxy cationic electrocoating, resistant to corrosive and saline environments. Second coating using sandblasted silver colour green acrylic resin, UV-stabilized.

Electric gear: 230V/50 Hz (CNR) power supply and heat protection. Flexible cable, terminated with quick connector tin-plated brass tips.

Equipment: during maintenance the housing and diffuser remain attached for easy maintenance. Electric gear on removable tray and quick connectors for connection to the power supply and the lamp holder.

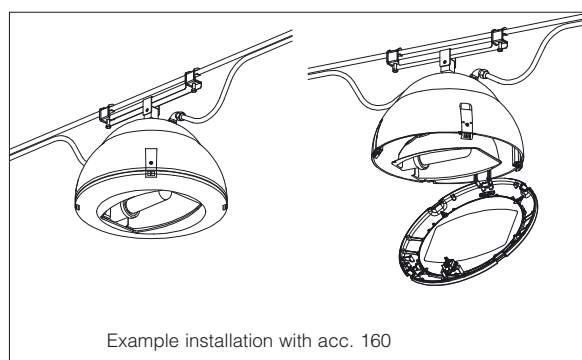
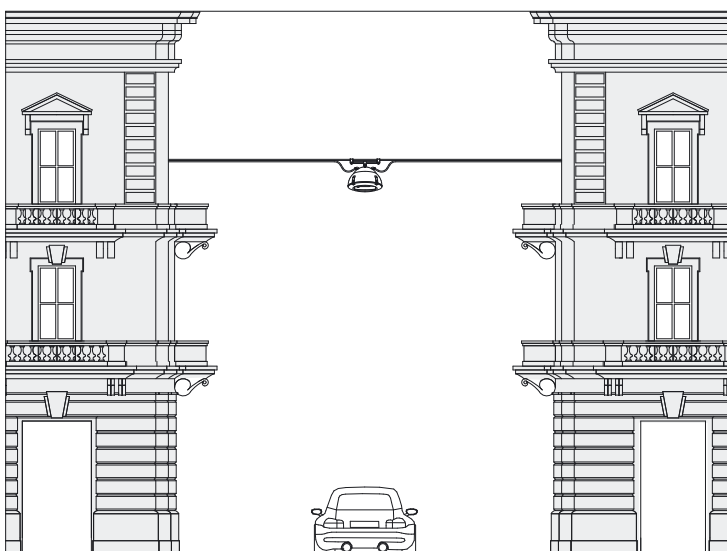
Standard supply: safety knife switch. Power supply can be cut off in case of maintenance. Electric gear on removable tray and quick connectors for connection to the power supply and the lamp holder.

3170 Montecarlo - street optical				
wattage	colour	CNRL		Lamps (Ta=25°C)
		weight	code	Kelvin - ølm - Ra
SAP-T 150	silv. + grap.	9.00	326610-00	2000K - 15000lm - Ra 4
SAP-T 250	silv. + grap.	10.20	326611-00	2000K - 28000lm - Ra 4
CDO-TT 150	silv. + grap.	9.00	326612-00	2800K - 13500lm - Ra 1b
JM-T 150	silv. + grap.	9.00	326613-00	4000K - 14000lm

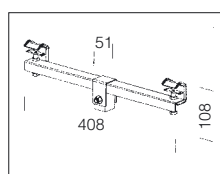


Safety knife switch. Power supply can be cut off in case of maintenance

On request:
coloured versions



Example installation with acc. 160

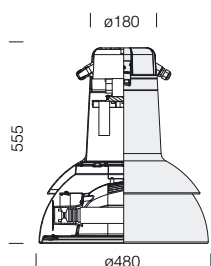


acc. 160 suspension connection

0.90 998090

In stainless steel AISI 304. To apply Montecarlo on ropes or steel cables.

IP65IK08



Housing: in die-cast aluminium; outside reflector in turned aluminium

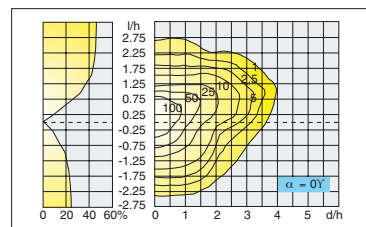
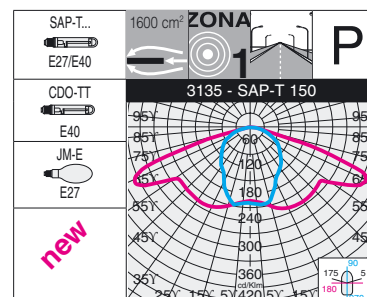
Reflector: LIGHT POLLUTION-CONTROL REFLECTOR. In anodised, polished, pressed 99.85 aluminium.

Diffuser: in pressed, prismatic glass, 4 mm thick thermal shocks and impact resistant (UNI EN 12150-1/2001 tests).

Coating: multi-stage process. Stage 1: grey epoxy cationic electrocoating, resistant to corrosion and saline environments. Stage 2: UV-stabilising priming. Stage 3: sandblasted silver acrylic finishing. White ceramic reflector

Electric gear: 230V/50 Hz (CNR) power supply. Flexible silicone wire, double insulation, terminated with quick connector tin-plated brass tips.

Standard supply: safety knife switch. Power supply can be cut off in case of maintenance. Electric gear on removable tray and quick connectors for connection to the power supply and the lamp holder.



3135 Campana - street optical

wattage	colour	CNRL		Lamps (Ta=25°C)	
		weight	code	Kelvin - ølm - Ra	
SAP-T 150	grap.+white	9.30	326710-00	2000K - 15000lm - Ra 4	
SAP-T 250	grap.+white	9.30	326711-00	2000K - 28000lm - Ra 4	
JM-E 150	grap.+white	9.30	326712-00	4000K - 14000lm - Ra 1b	
CDO-TT 150	grap.+white	8.80	326713-00	2800K - 13200lm - Ra 1b	

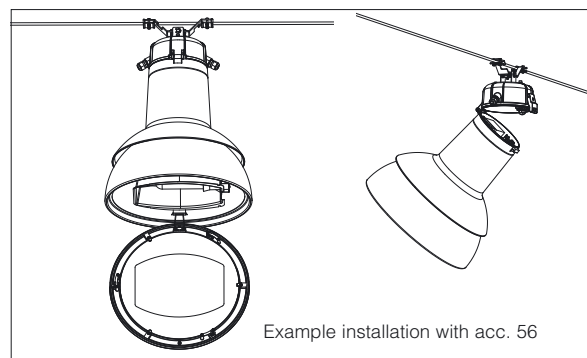
Adjustable focus lamp.



On request:
coloured versions

Safety knife switch. Power supply can be cut off in case of maintenance. Removable electric gear for easy maintenance.

Die-cast aluminium hooks.
Con filtro anticondensa.

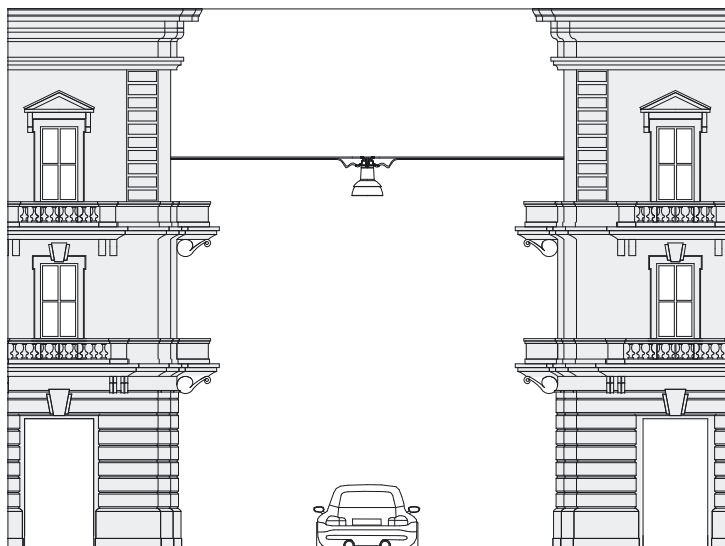
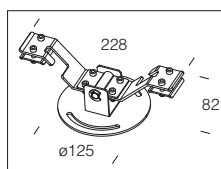


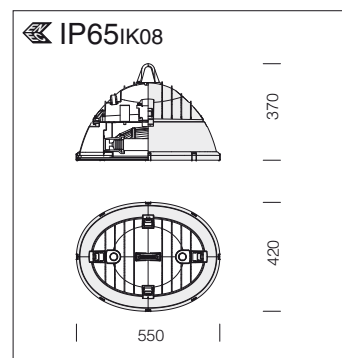
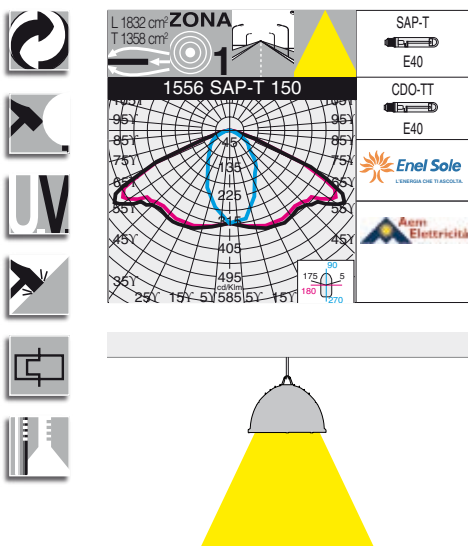
Example installation with acc. 56

acc. 56 suspension connection

0.70 995727

Made of stainless steel AISI 304. For installation on rope and steel cables of Campana.





Outer housing: die-cast aluminium, with wide cooling fins.

Reflector: LIGHT POLLUTION PREVENTING OPTICAL SYSTEM in pressed 99.85 aluminium, anodically oxidized, 3 mm thick and polished.

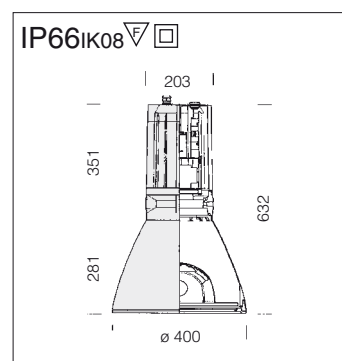
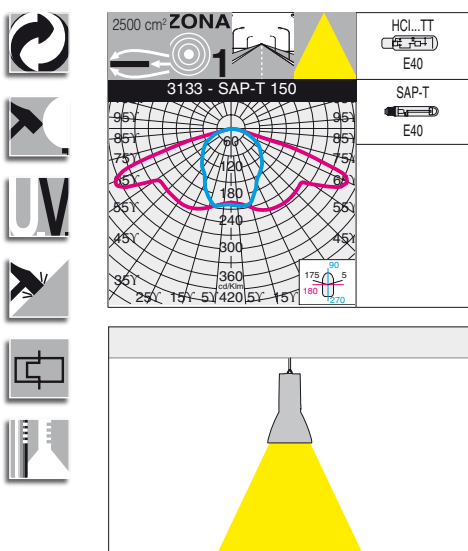
Diffuser: in tempered glass, 5 mm thick, resistant to impact and thermal shock.

Screen: in unbreakable, self-extinguishing V2 polycarbonate, UV-stabilized.

Coating: polyester powder coating.

Electric gear: 230V/50 Hz power supply with heat protection. Flexible wire terminated with quick connect admiralty brass clamps, silicone double insulation with fibreglass braid, 1.0 sq mm cross-section. 2P+T terminal block, maximum allowed lead cross-section 2.5 sq mm.

1556 Town - painted diffuser + glass					
		CNRL		CELL	
wattage	colour	weight	code	weight	code
SAP-T 150	s. silver	9.30	422536-00		
CDO-TT 150	s. silver			10.00	422537-00



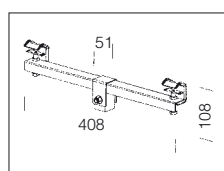
Housing/Frame: in die-cast aluminium, with wide cooling fins.

Reflector: in 99.85 aluminium, oxidized and polished with protection glass.

Coating: multi-stage process. Stage 1: grey epoxy cationic electrocoating, resistant to corrosion and saline environments. Stage 2: UV-stabilising priming. Stage 3: sandblasted silver acrylic finishing.

3133 Tex - street optical					
		CNRL		Lamps (Ta=25°C)	
wattage	colour	weight	code	weight	code
HCI-TT 150	silver + grap.	11.00	326050-00		
SAP-T 150	silver + grap.	11.00	326051-00		

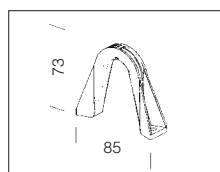
Use to suspend acc. 329 or 160.



acc. 160 suspension connection

0.90 998090

In stainless steel AISI 304. For installation on ropes and steel cables. **For Town, Tex, Iride.**



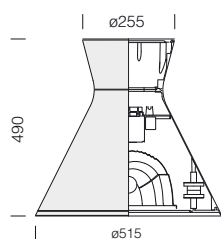
acc. 329 suspension connection

graphite 998061

s. silver 998060

Made of aluminium. To be used when suspending art. **Town, Tex, Iride.**

IP66IK08



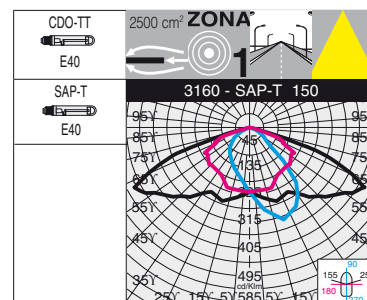
Housing/Frame: die-cast aluminium.

Reflector: in pressed 99.85 aluminium, anodically oxidized and polished.

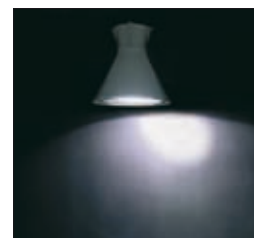
Diffuser: in tempered glass, 5 mm thick, resistant to impact and thermal shock. (test UNI EN 12150-1/2001).

Electric gear: 230V/50 Hz power supply. Disconnecting switch supplied as a standard feature to interrupt the line in the case of maintenance.

Equipment: during maintenance the housing and diffuser remain attached for easy maintenance. Electric gear on a removable tray with quick connectors for line and lampholder connection.



Light beam,
art. 3160,
viewed
from the side

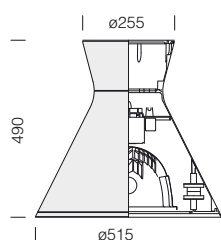


3160 Iride - direct light

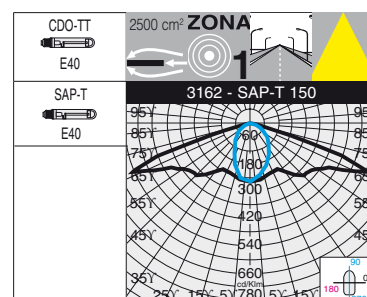
		CNRL		Lamps (Ta=25°C)
wattage	colour	weight	code	Kelvin - ølm - Ra
SAP-T 150	s. silver	10.50	326510-00	2000K - 15000lm - Ra 4
CDO-TT 150	s. silver	10.50	326511-00	2800K - 13500lm - Ra 1b

Use to suspend acc. 380 or 329. Other colour on request. Ideal for shopping centres.

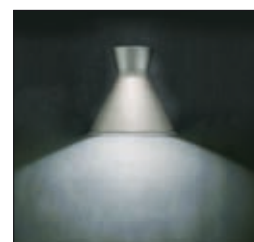
IP66IK08



Reflector: in pressed 99.85 aluminium, anodically oxidized and polished.



Light beam,
art. 3162



3162 Iride - direct light

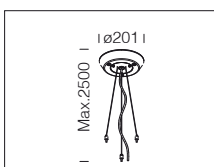
		CNRL		Lamps (Ta=25°C)
wattage	colour	weight	code	Kelvin - ølm - Ra
SAP-T 150	s. silver	11.50	326530-00	2000K - 15000lm - Ra 4
CDO-TT 150	s. silver	11.50	326531-00	2800K - 13500lm - Ra 1b

Recommended version for application on ropes or tie rods. Use to suspend acc. 380, 329 or 14.

acc. 380 suspension connection

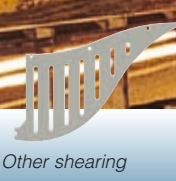
s. silver 326500

In die-cast aluminium with 3 steel cables. To be use with articles to direct/indirect light.





Stickers

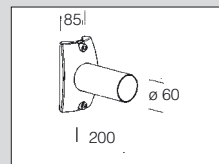


Other shearing



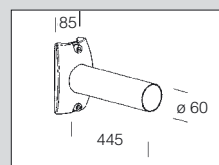
Casting



**acc. 327 arm**

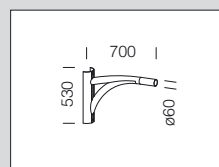
s. silver	426942
graphite	426943

Made of aluminium. To be used with acc. 302 for wall mounting, or with acc. 300/211 for pole mounting.

**acc. 328 arm**

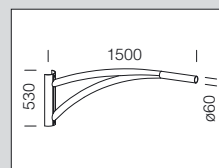
s. silver	426944
graphite	426945

Made of aluminium. To be used with acc. 302 for wall mounting, or with acc. 300/211 for pole mounting.

**acc. 406 Aliante arm**

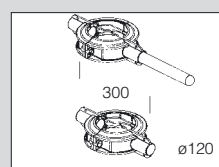
s. silver	991387
graphite	991388

Made of steel. To be used when installing Monza on pole art. 1475/1476.

**acc. 407 Aliante arm**

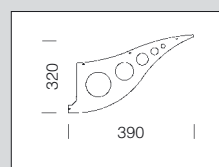
s. silver	991389
graphite	991390

Made of steel. To be used when installing Monza on pole art. 1475/1476.

**acc. 213 long banner connec.**

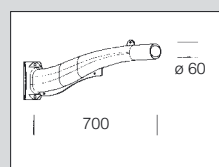
s. silver	426956
graphite	426957

Made of aluminium. To be used on pole ø120 a flag.

**acc. 214 small banner connec.**

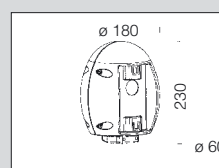
s. silver	426958
graphite	426959

Made of aluminium. To be used with acc. 212 for pole mounting.

**acc. 210 Sector arm**

s. silver	426950
graphite	426951

Made of aluminium. To be used with acc. 211 for pole mounting.

**acc. 300 Oliva**

s. silver	426970
graphite	426971

Made of steel. To be installed acc. 210/327/328 on ø60 pole.

**acc. 211 Sector**

s. silver	426952
graphite	426953

Made of aluminium. To be used with acc. 210 or 327/328 for pole mounting ø120.



INTRODUCTION

The geographic extension of public lighting systems makes it very difficult to ensure adequate levels of **efficiency, quality, reliability and energy saving** of the service by relying on traditional instruments.

In fact, the systems are characterised by a large number of crucial points distributed throughout the country, where there is a need to monitor and manage the operating status constantly.

In particular, public lighting systems in urban areas are very extensive and widespread, with a large number of electric distribution boards and above all lighting points.

Therefore, locating malfunctions in various components, identifying the cause and repairing the fault, implementing a prudent and timely management scheme for the system and verifying the luminous flux of each single lighting fixture is a problem and is extremely expensive.

All the above involves very high costs in terms of time and above all money.

Bipower system

This system is applicable to the service lighting sector for mainly public environments, such as roads, crossroads, parks... This context involves the need to be able to reduce the power used to energise the lamps at night, to obtain an energy saving.

It is useful to obtain an energy saving at a pre-established time, particularly in the case of street lighting, for example, in relation to the volume of traffic and the subsequent safety requirements. Establishing a consistent time at which to switch over the operating mode is a necessary feature to avoid different lighting conditions. The reduced power output can be obtained by using voltage changers combined with lighting fixtures wired using conventional components, or with appropriate components, making the change over automatic from the nominal power output to the reduced power output, as described below. The different wiring solutions of the lighting fixture foresee replacing the ballast with a model that has two

selections (Bipower) and the corresponding selection switch.

PRINCIPAL FEATURES OF THE BIPOWER SYSTEM:

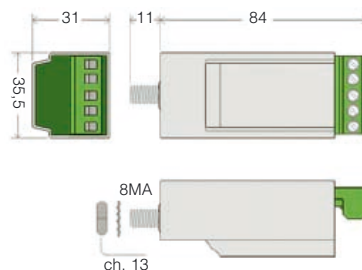
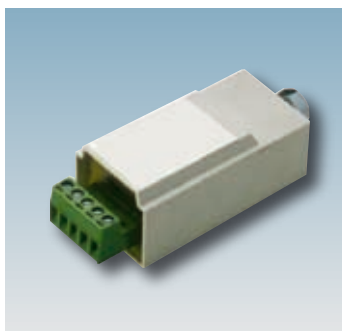
Use of the "BIPOWER" solution determines:

- A 40/45% decrease in the power absorbed during operation in the reduced power mode;
- Reduced ordinary maintenance: increase of the lamps' average useful working life;
- Reduced fuel consumption necessary to produce electric energy.

FLUX REDUCTION = ENERGY SAVING

TECHNICAL FEATURES OF COMPONENTS:

Supply voltage	220 - 240V
Frequency	50 - 60 Hz
Contacts	250 - I _{max} 6A (cosφ = 0,5)
Ambient temperature	80°C



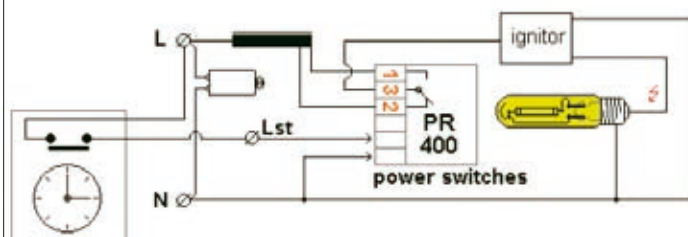
TECHNICAL FEATURES OF THE BIPOWER SYSTEM:

The "BIPOWER SYSTEM" is designed with ballast complete with socket, comprising a nominal impedance and an increased impedance that reduces the current energising the lamp, the flux emitted and the power absorbed. The transition from full power to reduced power is ensured by an electronic switching device. The "BIPOWER SYSTEM" cannot be used with metal halide lamps and switching on/restricking the lamps when in

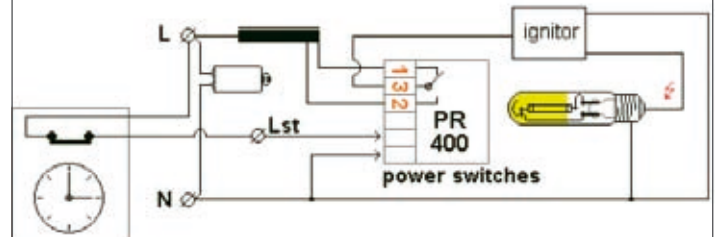
nominal power mode is recommended.

The electronic device requires a pilot wire in addition to the power line: in this way, the power mode switch over can be programmed at pre-established times using a centralised timer.

Operation at nominal power output



Operation at reduced power output



The current situation of lighting systems can be summarised as follows:

- a) High service consumptions;
- b) High maintenance costs;
- c) Limited management monitoring;
- d) Light and environmental pollution.

Disano Illuminazione proposes different methods to address efficiently the problems which have been highlighted in order to achieve ENERGY-SAVING, to MONITOR THE SYSTEM'S OPERATION and consequently to obtain a significant ECONOMIC SAVING; these methods refer to the following solutions:

- **BIPOWER SYSTEM**
- **REMOTE CONTROL AND REMOTE MANAGEMENT SYSTEM**



Monitoring and remote management system

The **remote-control and remote management** system is a cutting-edge system capable of controlling the public lighting network up to the single lighting point, without needing to change the existing system. This system allows a single operator to perform the operations which would require an expensive use of manpower and means if the system was not installed; in addition, the system enables significant savings to be achieved with reference to energy and maintenance costs, while at the same time ensuring high levels of **reliability, continuity and service quality**.

PRINCIPAL FEATURES:

- Can be applied to systems that already exists;
- Performs diagnosis, monitoring and management in remote mode;
- Manages the single lighting point;
- Enables energy and maintenance savings to be achieved (more than 35%);
- Limits light and environmental pollution;
- Extends the lighting systems' average useful working life;
- Improves the service and the quality of public lighting;
- Initial costs will be absorbed over a short period of time.

REMOTE DIAGNOSIS AND REMOTE MANAGEMENT UP TO THE SINGLE LIGHTING POINT:

Monitoring the operation of the single lamp represents a totally innovative function, above all, because the lamp can be monitored to identify the following operating conditions with a simple connection of the electronic device in series with the power supply line:

- lamp energised/switched off by command;
- lamp operating at full power output;
- lamp operating at reduced power output following a command;
- condenser failed (or insufficient power factor correction);
- lamp burning out (intermittent operation);
- lamp short-circuited;
- fuse failure;
- no current (lamp circuit not connected).

The electronic device is compatible with any lamp existing on the market (type, power and brand) and can be installed indifferently inside the well, in the pole slot or inside the lighting fixture.

COMMUNICATIONS OVER HIGH-VOLTAGE LINES:

The application of communications over high-voltage lines eliminates the need for additional wiring and has the flexibility of implementing commands in dynamic mode, in different areas and at different times (can be changed at any time depending on requirements), to partialise the systems (switching off single lighting points selectively) and/or reducing their luminous flux. The partialised systems and/or the reduced luminous flux meet the need of rationalising the energy resources at those times and/or periods when the number of persons and vehicles is reduced, thereby creating economic and environmental benefits. More in detail the technique of transmitting over high-voltage lines enables the following:

- to receive information from each lighting point regarding the individual status (switched on/switched off) and/or malfunction;
- to transmit instructions to each lighting point for switch on/switch off

commands;

- to transmit instructions to each lighting point for full power/reduced power operation (for lamps equipped with power ballasts);
- to transmit instructions to each lighting point for gradual control (dimming) of the luminous flux (for lamps equipped with dimmable electronic ballasts);

SAVINGS AND BENEFITS:

• Economic and energy savings

Programmed and continuous use by means of remote diagnosis enables significant management and energy savings to be achieved and to improve the service quality rendered to the inhabitants. The following principal factors enable a 25% saving in energy costs to be achieved compared to traditional management solutions:

- rationalised use of the lamps by partialised solutions (switching off and targeted reduced flux)
- optimising operating cycles
- reduced daytime operation to identify faults
- reduced line dispersion due to low power factor (incorrect lamps power factor correction)
- reduced luminous flux of the lamps.

• Savings in maintenance costs

The following can be achieved using the remote management solution:

- saving in staff costs, thanks to optimising the intervention times
- savings in materials, thanks to the targeted monitoring of components which are actually faulty
- optimised management of warehouse facilities and vehicles
- avoiding unnecessary costs due to operations involved to identify failures
- saving costs for the general organisation of the service.

• Safety

The remote management system has been designed to address effectively all the safety and adaptability requirements of the systems' technical aspects:

- all the lamp control and panel control modules are produced with double insulation
- the system modules ensure total compatibility with the systems which are already installed (panels, lamps and their accessories)
- any fault or tampering with the components does not change the system's operation since the system continues to function normally.

SYSTEM ARCHITECTURE:

The system enables the public lighting systems to be operated in remote mode. In particular, the system allows customised remote diagnosis, remote-control and remote management using one or more remote PCS, of all the components that comprise a public lighting system network that already exists or has been recently implemented, according to the single operator's needs. The remote diagnosis system is simple to use and to install and consists of small hardware devices, plus management and communications software.