



Polar

RECESSED SPOTLIGHTS | NON-DALI SERIES

Polar, recessed spotlight has an adaptable angle mechanism, allowing for very precise beam direction. Perfect fit for modern spaces with a wide range of goods needing custom lights like shops and showrooms. Spotlight rotates through 355° and pivots through 50°. Can be equipped with special color light to match various products requirements. Modern, aluminum housing comes in three colors - signal white, jet black and white aluminum – for a perfect blend with the environment.

Polar recessed spotlight come in several series, with various add-on and controls:

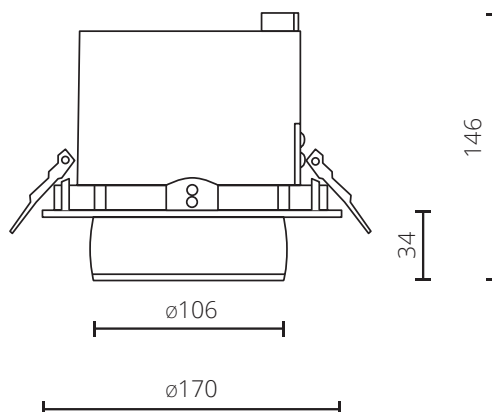
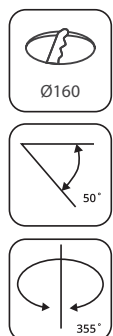
- Polar Non-DALI – the standard for any project in the retail sector
- Polar DALI – with DALI controls for illumination adjustments

APPLICATION

Grocery & Supermarkets | Retail | Office | Healthcare | Hospitality | DIY

FEATURES & BENEFITS

- CRI > 80 as standard, up to 98 for certain special color
- 15 color temperatures, including 11 specialized options for food, fashion, art, hospitality and AGI light
- Several optics variants: 4 angles from narrow beams to flood beams
- Luminaire efficiency: 117lm/W @4000K
- Dimmable (only for DALI Series)



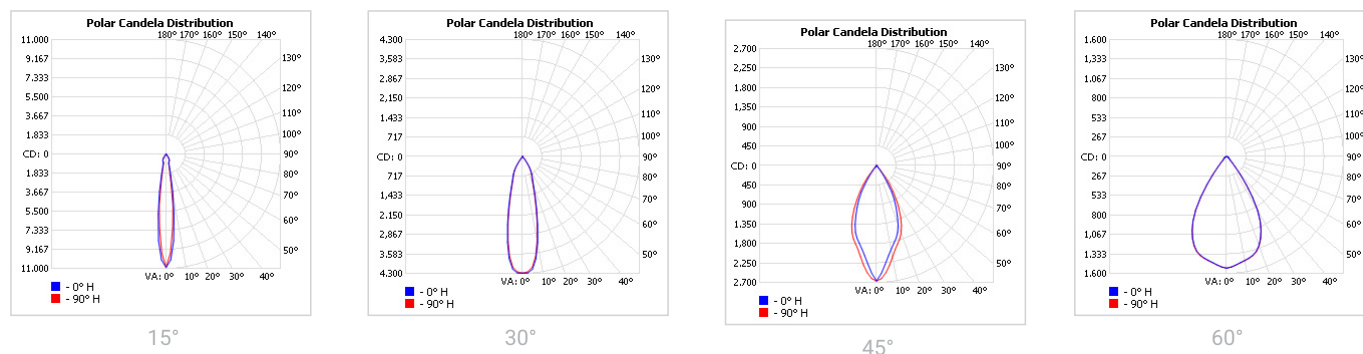
SPECIFICATIONS

Power consumption	12W, 14W, 17W, 20W, 23W, 27W, 29W
Dimensions	D170 x H146 x Ø160mm±1mm
Weight	1.1 - 1.2 kg
Housing materials	Aluminium, glass
IK code	IK02
THD (at 230V, 50Hz, Full load)	<20%
Protection class	Safety class 1
Operating temperature [°C]	-20°C ... +45°C / -4F ... +113F
Operating humidity [%]	10 ÷ 85
Power factor	≥0.95
AC Input [Vac]	220 - 240
Lens angle [°]	15°, 30°, 45°, 60°
Lifespan [h]	50,000
Housing color	○ RAL 9003 - Signal white, ● RAL 9005 - Jet Black, ● RAL 9006 - White Aluminium
Lumen maintenance	L90/B10@50,000h at 25°C
IP factor	IP20
Control optional	-
Warranty [years]	5
Storage temperature range [°C]	-20°C ... +55°C / -4F ... +131F
Emergency option	-

#	Standard	Food	Fashion	AGI	ART	AMB
CRI	CRI80	CRI80	CRI95	CRI93	CRI98	CRI80
CCT [K]	2700 / 3000 / 3500 / 4000	BVF / FBS / FZM / FSM / FSH	FAS	AGI 3000 / 3500 / 4000	3000	2200
MacAdam	3	3 / 4 / 4 / 3 / 3	3	3	2	3

CRI - Color rendering, CCT - Color temperature, MacAdam - Color consistency

LIGHT DISTRIBUTION



TOLERANCES

Luminous flux tolerances: -/+ 5%

Consumption tolerance: -/+ 5% for Non-DALI | -/+ 10% for Non-DALI & KIT EM | -/+ 10% for DALI | -/+ 15% for DALI & KIT EM

BATTERY WARRANTY

Non-DALI EM & DALI EM: 12 months warranty

Non-DALI & DALI: -

MAXIMUM NO. OF LUMINAIRES ON A CIRCUIT

Luminaire Power(W)	Control type	Circuit Breaker Type					
		B			C		
		20	16	10	20	16	10
8-20W	Non-DALI	62	50	31	104	85	52
23-35W	Non-DALI	24	20	10	47	40	20
42W	Non-DALI	20	16	8	38	32	16
8-20W	DALI	62	50	31	104	85	52
23-27W	DALI	25	21	13	50	42	26
34-42W	DALI	17	14	9	34	28	18

RISK GROUP

Standard (CRI80)	RG1
FOOD (BVF, FBS, FSM)	RG1
FOOD ≤35W (FZM, FSH)	RG2 (dthr=1.8m)
FOOD >35W (FZM, FSH)	RG2 (dthr=2.2m)
FAS	RG1
AMB2200	RG1
ART	RG1
AGI	RG1
CRI90	RG1
CRI95	RG1
ENT	RG1

RG1
 The evaluation of photobiological safety is carried out according to the standard IEC 62471:2008 ("Photobiological safety of lamps and lamp systems"). Following the definition of the risk grouping system of the mentioned IEC standard, the LEDs mounted on this family fall into the class "Low Risk (RG1 – No photobiological hazard under normal behavioral limitations)". Under real circumstances (regarding exposure time, pupils, observation distance), it is assumed that there is no endangerment to the eye from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect.

RG2
 The evaluation of photobiological safety is carried out according to the standard IEC 62471:2008 ("Photobiological safety of lamps and lamp systems"). Following the definition of the risk grouping system of the mentioned IEC standard, the LEDs mounted on this family fall into the class "Moderate Risk (RG2)". Under real circumstances (regarding exposure time, pupils, observation distance), it is assumed that there is no endangerment to the eye from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect.

SKU SPECIFICATIONS

Product Code	Dimensions (mm)	CCT (K)	Lumens (lm)	Power (W)	Eff. (lm/watt)	Lens Angle (°)
CRI 80						
117000 Polar R31002/2700/14W/80/A15	D170 x H146 x Ø160mm±1mm	2700	1485	14W	107	15°
117001 Polar R31002/3000/14W/80/A15	D170 x H146 x Ø160mm±1mm	3000	1500	14W	108	15°
117002 Polar R31002/3500/14W/80/A15	D170 x H146 x Ø160mm±1mm	3500	1540	14W	110	15°
117003 Polar R31002/4000/14W/80/A15	D170 x H146 x Ø160mm±1mm	4000	1570	14W	113	15°
117005 Polar R31002/2700/14W/80/A30	D170 x H146 x Ø160mm±1mm	2700	1485	14W	107	30°
117006 Polar R31002/3000/14W/80/A30	D170 x H146 x Ø160mm±1mm	3000	1500	14W	108	30°
117007 Polar R31002/3500/14W/80/A30	D170 x H146 x Ø160mm±1mm	3500	1540	14W	110	30°
117008 Polar R31002/4000/14W/80/A30	D170 x H146 x Ø160mm±1mm	4000	1570	14W	113	30°
117010 Polar R31002/2700/14W/80/A45	D170 x H146 x Ø160mm±1mm	2700	1485	14W	107	45°
117011 Polar R31002/3000/14W/80/A45	D170 x H146 x Ø160mm±1mm	3000	1500	14W	108	45°
117012 Polar R31002/3500/14W/80/A45	D170 x H146 x Ø160mm±1mm	3500	1540	14W	110	45°
117013 Polar R31002/4000/14W/80/A45	D170 x H146 x Ø160mm±1mm	4000	1570	14W	113	45°
117015 Polar R31002/2700/14W/80/A60	D170 x H146 x Ø160mm±1mm	2700	1485	14W	107	60°
117016 Polar R31002/3000/14W/80/A60	D170 x H146 x Ø160mm±1mm	3000	1500	14W	108	60°
117017 Polar R31002/3500/14W/80/A60	D170 x H146 x Ø160mm±1mm	3500	1540	14W	110	60°
117018 Polar R31002/4000/14W/80/A60	D170 x H146 x Ø160mm±1mm	4000	1570	14W	113	60°
117020 Polar R31002/2700/20W/80/A15	D170 x H146 x Ø160mm±1mm	2700	2080	20W	104	15°
117021 Polar R31002/3000/20W/80/A15	D170 x H146 x Ø160mm±1mm	3000	2100	20W	105	15°
117022 Polar R31002/3500/20W/80/A15	D170 x H146 x Ø160mm±1mm	3500	2160	20W	108	15°
117023 Polar R31002/4000/20W/80/A15	D170 x H146 x Ø160mm±1mm	4000	2200	20W	110	15°
117025 Polar R31002/2700/20W/80/A30	D170 x H146 x Ø160mm±1mm	2700	2080	20W	104	30°
117026 Polar R31002/3000/20W/80/A30	D170 x H146 x Ø160mm±1mm	3000	2100	20W	105	30°
117027 Polar R31002/3500/20W/80/A30	D170 x H146 x Ø160mm±1mm	3500	2160	20W	108	30°
117028 Polar R31002/4000/20W/80/A30	D170 x H146 x Ø160mm±1mm	4000	2200	20W	110	30°
117030 Polar R31002/2700/20W/80/A45	D170 x H146 x Ø160mm±1mm	2700	2080	20W	104	45°
117031 Polar R31002/3000/20W/80/A45	D170 x H146 x Ø160mm±1mm	3000	2100	20W	105	45°
117032 Polar R31002/3500/20W/80/A45	D170 x H146 x Ø160mm±1mm	3500	2160	20W	108	45°
117033 Polar R31002/4000/20W/80/A45	D170 x H146 x Ø160mm±1mm	4000	2200	20W	110	45°
117035 Polar R31002/2700/20W/80/A60	D170 x H146 x Ø160mm±1mm	2700	2080	20W	104	60°
117036 Polar R31002/3000/20W/80/A60	D170 x H146 x Ø160mm±1mm	3000	2100	20W	105	60°
117037 Polar R31002/3500/20W/80/A60	D170 x H146 x Ø160mm±1mm	3500	2160	20W	108	60°
117038 Polar R31002/4000/20W/80/A60	D170 x H146 x Ø160mm±1mm	4000	2200	20W	110	60°
117040 Polar R31002/2700/27W/80/A15	D170 x H146 x Ø160mm±1mm	2700	2945	27W	110	15°
117041 Polar R31002/3000/27W/80/A15	D170 x H146 x Ø160mm±1mm	3000	2970	27W	110	15°
117042 Polar R31002/3500/27W/80/A15	D170 x H146 x Ø160mm±1mm	3500	3055	27W	114	15°
117043 Polar R31002/4000/27W/80/A15	D170 x H146 x Ø160mm±1mm	4000	3135	27W	117	15°
117045 Polar R31002/2700/27W/80/A30	D170 x H146 x Ø160mm±1mm	2700	2945	27W	110	30°
117046 Polar R31002/3000/27W/80/A30	D170 x H146 x Ø160mm±1mm	3000	2970	27W	110	30°
117047 Polar R31002/3500/27W/80/A30	D170 x H146 x Ø160mm±1mm	3500	3055	27W	114	30°
117048 Polar R31002/4000/27W/80/A30	D170 x H146 x Ø160mm±1mm	4000	3135	27W	117	30°
117050 Polar R31002/2700/27W/80/A45	D170 x H146 x Ø160mm±1mm	2700	2945	27W	110	45°
117051 Polar R31002/3000/27W/80/A45	D170 x H146 x Ø160mm±1mm	3000	2970	27W	110	45°
117052 Polar R31002/3500/27W/80/A45	D170 x H146 x Ø160mm±1mm	3500	3055	27W	114	45°
117053 Polar R31002/4000/27W/80/A45	D170 x H146 x Ø160mm±1mm	4000	3135	27W	117	45°
117055 Polar R31002/2700/27W/80/A60	D170 x H146 x Ø160mm±1mm	2700	2945	27W	110	60°
117056 Polar R31002/3000/27W/80/A60	D170 x H146 x Ø160mm±1mm	3000	2970	27W	110	60°
117057 Polar R31002/3500/27W/80/A60	D170 x H146 x Ø160mm±1mm	3500	3055	27W	114	60°
117058 Polar R31002/4000/27W/80/A60	D170 x H146 x Ø160mm±1mm	4000	3135	27W	117	60°
117072 Polar R31002/BVF/27W/80/A15	D170 x H146 x Ø160mm±1mm	BVF	2065	27W	77	15°
117073 Polar R31002/FBS/27W/80/A15	D170 x H146 x Ø160mm±1mm	FBS	1635	27W	61	15°

SKU SPECIFICATIONS

Product Code	Dimensions (mm)	CCT (K)	Lumens (lm)	Power (W)	Eff. (lm/watt)	Lens Angle (°)
CRI 80						
117074 Polar R31002/FZM/27W/80/A15	D170 x H146 x Ø160mm±1mm	FZM	1530	27W	57	15°
117075 Polar R31002/FSM/27W/80/A15	D170 x H146 x Ø160mm±1mm	FSM	1530	27W	57	15°
117092 Polar R31002/FSH/27W/80/A15	D170 x H146 x Ø160mm±1mm	FSH	2250	27W	84	15°
117076 Polar R31002/BVF/27W/80/A30	D170 x H146 x Ø160mm±1mm	BVF	2065	27W	77	30°
117077 Polar R31002/FBS/27W/80/A30	D170 x H146 x Ø160mm±1mm	FBS	1635	27W	61	30°
117078 Polar R31002/FZM/27W/80/A30	D170 x H146 x Ø160mm±1mm	FZM	1530	27W	57	30°
117079 Polar R31002/FSM/27W/80/A30	D170 x H146 x Ø160mm±1mm	FSM	1530	27W	57	30°
117093 Polar R31002/FSH/27W/80/A30	D170 x H146 x Ø160mm±1mm	FSH	2250	27W	84	30°
117080 Polar R31002/BVF/27W/80/A45	D170 x H146 x Ø160mm±1mm	BVF	2065	27W	77	45°
117081 Polar R31002/FBS/27W/80/A45	D170 x H146 x Ø160mm±1mm	FBS	1635	27W	61	45°
117082 Polar R31002/FZM/27W/80/A45	D170 x H146 x Ø160mm±1mm	FZM	1530	27W	57	45°
117083 Polar R31002/FSM/27W/80/A45	D170 x H146 x Ø160mm±1mm	FSM	1530	27W	57	45°
117094 Polar R31002/FSH/27W/80/A45	D170 x H146 x Ø160mm±1mm	FSH	2250	27W	84	45°
117084 Polar R31002/BVF/27W/80/A60	D170 x H146 x Ø160mm±1mm	BVF	2065	27W	77	60°
117085 Polar R31002/FBS/27W/80/A60	D170 x H146 x Ø160mm±1mm	FBS	1635	27W	61	60°
117086 Polar R31002/FZM/27W/80/A60	D170 x H146 x Ø160mm±1mm	FZM	1530	27W	57	60°
117087 Polar R31002/FSM/27W/80/A60	D170 x H146 x Ø160mm±1mm	FSM	1530	27W	57	60°
117095 Polar R31002/FSH/27W/80/A60	D170 x H146 x Ø160mm±1mm	FSH	2250	27W	84	60°
117224 Polar R31002/AMB2200/14W/80/A15	D170 x H146 x Ø160mm±1mm	AMB2200	1020	14W	73	15°
117225 Polar R31002/AMB2200/14W/80/A30	D170 x H146 x Ø160mm±1mm	AMB2200	1020	14W	73	30°
117226 Polar R31002/AMB2200/14W/80/A45	D170 x H146 x Ø160mm±1mm	AMB2200	1020	14W	73	45°
117227 Polar R31002/AMB2200/14W/80/A60	D170 x H146 x Ø160mm±1mm	AMB2200	1020	14W	73	60°
117228 Polar R31002/AMB2200/20W/80/A15	D170 x H146 x Ø160mm±1mm	AMB2200	1410	20W	71	15°
117229 Polar R31002/AMB2200/20W/80/A30	D170 x H146 x Ø160mm±1mm	AMB2200	1410	20W	71	30°
117230 Polar R31002/AMB2200/20W/80/A45	D170 x H146 x Ø160mm±1mm	AMB2200	1410	20W	71	45°
117231 Polar R31002/AMB2200/20W/80/A60	D170 x H146 x Ø160mm±1mm	AMB2200	1410	20W	71	60°
117232 Polar R31002/AMB2200/27W/80/A15	D170 x H146 x Ø160mm±1mm	AMB2200	1870	27W	70	15°
117233 Polar R31002/AMB2200/27W/80/A30	D170 x H146 x Ø160mm±1mm	AMB2200	1870	27W	70	30°
117234 Polar R31002/AMB2200/27W/80/A45	D170 x H146 x Ø160mm±1mm	AMB2200	1870	27W	70	45°
117235 Polar R31002/AMB2200/27W/80/A60	D170 x H146 x Ø160mm±1mm	AMB2200	1870	27W	70	60°
CRI 93						
117212 Polar R31002/AGI3000/12W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3000	735	12W	62	15°
117213 Polar R31002/AGI3500/12W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3500	780	12W	65	15°
117214 Polar R31002/AGI4000/12W/93/A15	D170 x H146 x Ø160mm±1mm	AGI4000	830	12W	70	15°
117215 Polar R31002/AGI3000/12W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3000	735	12W	62	30°
117216 Polar R31002/AGI3500/12W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3500	780	12W	65	30°
117217 Polar R31002/AGI4000/12W/93/A30	D170 x H146 x Ø160mm±1mm	AGI4000	830	12W	70	30°
117218 Polar R31002/AGI3000/12W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3000	735	12W	62	45°
117219 Polar R31002/AGI3500/12W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3500	780	12W	65	45°
117220 Polar R31002/AGI4000/12W/93/A45	D170 x H146 x Ø160mm±1mm	AGI4000	830	12W	70	45°
117221 Polar R31002/AGI3000/12W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3000	735	12W	62	60°
117222 Polar R31002/AGI3500/12W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3500	780	12W	65	60°
117223 Polar R31002/AGI4000/12W/93/A60	D170 x H146 x Ø160mm±1mm	AGI4000	830	12W	70	60°
117152 Polar R31002/AGI3000/17W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3000	985	17W	58	15°
117153 Polar R31002/AGI3500/17W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3500	1050	17W	62	15°
117154 Polar R31002/AGI4000/17W/93/A15	D170 x H146 x Ø160mm±1mm	AGI4000	1115	17W	66	15°
117155 Polar R31002/AGI3000/17W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3000	985	17W	58	30°
117156 Polar R31002/AGI3500/17W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3500	1050	17W	62	30°
117157 Polar R31002/AGI4000/17W/93/A30	D170 x H146 x Ø160mm±1mm	AGI4000	1115	17W	66	30°

SKU SPECIFICATIONS

Product Code	Dimensions (mm)	CCT (K)	Lumens (lm)	Power (W)	Eff. (lm/watt)	Lens Angle (°)
CRI 93						
117158 Polar R31002/AGI3000/17W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3000	985	17W	58	45°
117159 Polar R31002/AGI3500/17W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3500	1050	17W	62	45°
117160 Polar R31002/AGI4000/17W/93/A45	D170 x H146 x Ø160mm±1mm	AGI4000	1115	17W	66	45°
117161 Polar R31002/AGI3000/17W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3000	985	17W	58	60°
117162 Polar R31002/AGI3500/17W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3500	1050	17W	62	60°
117163 Polar R31002/AGI4000/17W/93/A60	D170 x H146 x Ø160mm±1mm	AGI4000	1115	17W	66	60°
117164 Polar R31002/AGI3000/23W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3000	1330	23W	58	15°
117165 Polar R31002/AGI3500/23W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3500	1440	23W	63	15°
117166 Polar R31002/AGI4000/23W/93/A15	D170 x H146 x Ø160mm±1mm	AGI4000	1550	23W	68	15°
117167 Polar R31002/AGI3000/23W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3000	1330	23W	58	30°
117168 Polar R31002/AGI3500/23W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3500	1440	23W	63	30°
117169 Polar R31002/AGI4000/23W/93/A30	D170 x H146 x Ø160mm±1mm	AGI4000	1550	23W	68	30°
117170 Polar R31002/AGI3000/23W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3000	1330	23W	58	45°
117171 Polar R31002/AGI3500/23W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3500	1440	23W	63	45°
117172 Polar R31002/AGI4000/23W/93/A45	D170 x H146 x Ø160mm±1mm	AGI4000	1550	23W	68	45°
117173 Polar R31002/AGI3000/23W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3000	1330	23W	58	60°
117174 Polar R31002/AGI3500/23W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3500	1440	23W	63	60°
117175 Polar R31002/AGI4000/23W/93/A60	D170 x H146 x Ø160mm±1mm	AGI4000	1550	23W	68	60°
117176 Polar R31002/AGI3000/29W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3000	1680	29W	58	15°
117177 Polar R31002/AGI3500/29W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3500	1820	29W	63	15°
117178 Polar R31002/AGI4000/29W/93/A15	D170 x H146 x Ø160mm±1mm	AGI4000	1960	29W	68	15°
117179 Polar R31002/AGI3000/29W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3000	1680	29W	58	30°
117180 Polar R31002/AGI3500/29W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3500	1820	29W	63	30°
117181 Polar R31002/AGI4000/29W/93/A30	D170 x H146 x Ø160mm±1mm	AGI4000	1960	29W	68	30°
117182 Polar R31002/AGI3000/29W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3000	1680	29W	58	45°
117183 Polar R31002/AGI3500/29W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3500	1820	29W	63	45°
117184 Polar R31002/AGI4000/29W/93/A45	D170 x H146 x Ø160mm±1mm	AGI4000	1960	29W	68	45°
117185 Polar R31002/AGI3000/29W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3000	1680	29W	58	60°
117186 Polar R31002/AGI3500/29W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3500	1820	29W	63	60°
117187 Polar R31002/AGI4000/29W/93/A60	D170 x H146 x Ø160mm±1mm	AGI4000	1960	29W	68	60°
CRI 95						
117068 Polar R31002/FAS/27W/95/A15	D170 x H146 x Ø160mm±1mm	FAS	2080	27W	78	15°
117069 Polar R31002/FAS/27W/95/A30	D170 x H146 x Ø160mm±1mm	FAS	2080	27W	78	30°
117070 Polar R31002/FAS/27W/95/A45	D170 x H146 x Ø160mm±1mm	FAS	2080	27W	78	45°
117071 Polar R31002/FAS/27W/95/A60	D170 x H146 x Ø160mm±1mm	FAS	2080	27W	78	60°
CRI 98						
117100 Polar R31002/ART3000/27W/98/A15	D170 x H146 x Ø160mm±1mm	ART3000	1995	27W	74	15°
117101 Polar R31002/ART3000/27W/98/A30	D170 x H146 x Ø160mm±1mm	ART3000	1995	27W	74	30°
117102 Polar R31002/ART3000/27W/98/A45	D170 x H146 x Ø160mm±1mm	ART3000	1995	27W	74	45°
117103 Polar R31002/ART3000/27W/98/A60	D170 x H146 x Ø160mm±1mm	ART3000	1995	27W	74	60°

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